

PROOF OF THE EXISTENCE OF GOD FROM MOTION (THE KINETIC PROOF)

Contents

PREFACE

1. The reason for demonstrating the existence of God nowadays	4
2. The form of the proof of the existence of God	9
3. The significance of the term “demonstration”	11
4. The scientific status of the proof of the existence of God	16
5. The name of God	19
6. Man’s natural desire to know God	24
7. Fernand’s van Steenberghen assessment of the validity of the kinetic proof by St. Thomas Aquinas	38
8. The Word of God and human words	43

CHAPTER I. METHOD

1. Scientia subalternata (the subordinate science)	47
2. The order and system of sciences.	51

CHAPTER II. MODERN EUROPEAN SCIENCE AND ARISTOTELIANISM

1. The mathematical paradigm of science versus Aristotelianism and philosophy	61
2. The laws of nature	81
3. Values	102
<i>Christian values</i>	117

CHAPTER III. MATHEMATICS 121

1. Are natural processes reversible?.	122
2. The mathematical abstraction	138
3. Number e	151
4. Mathematics and experiment	158

CHAPTER IV. RELATIONS

1. Analogy: the order of relations.	166
2. The principles of things are contrary (principia contraria sunt)	170
3. The problem of relativism	171
3. 1. Cognoscibility and relativity of nature	172
3. 2. Towards relativism	175
3. 3. Homo mensura	195
4. The starting point of science	208
5. Facts and being-naturally-related. The language of being-naturally-related	217
6. Analogy: the relation of the judgment to the spoken and to causes	235
7. The existential judgment and the identity principle. The fundamental option and the causal relations. The cultural and final identity.	245
8. The problem of the ontological proof	268
9. The spiritual relation of paternity. Matrices of cognition. Their disconnection from reality	277
10. The analogy of proportionality animating the progress of science. The “supernatural” “consciousness” hindering it	289
11. The cognitive relation. The a-locality of cognition	301

CHAPTER V. MEASURING MOTION

1. The beginning in time. Numerus numerans and numerus numeratus	312

2. Aesthesis – perception	326
3. Perceiving and Reflecting	333
<i>Reflexing and reflecting</i>	340
4. The problem of the absolute measure of things and the sensual perception .	347
5. The extent to which the geometrical optics can be applied	359
<i>Various sense data (phenomena) stem from the same definite source – the substance</i>	366
6. The superposition of wave courses and the borders of the experiment . . .	367
7. The problem of the natural place	372
8. Time	382
9. The fullness of being and the formalism of mathematics. The problem of Kantianism	391
10. Experiencing God’s absence	411

CHAPTER VI. FORMALIZATION OF CONCEPTS

1. Mechanistic philosophy versus the language of qualities	415
2. The quality of truth and the scientific truths	426
3. Definitions and signs	435
4. Intentionality of nature and the maximum of freedom and creativity . . .	446

CHAPTER VII. DIVERSITY OF BEINGS

1. The separability of objects in science	452
2. The intentionality and complementarity	469
3. Between the measurable and unmeasurable	478
4. A non-physical interpretation of the principle of complementarity . . .	481
5. Holism	483
6. Evolution	491

CHAPTER VIII. COGNITIO CONFUSA

1. The subject matter and the starting point of science	497

2. Cognitio confusa	506
3. The hidden variable. Forma totius. Species	514
4. The lambda variable	517
 CHAPTER IX. INTENTIO NATURAE	 520
1. The historical background of the problem	521
2. The animal perception	527
3. The nature of perception	532
4. The effect of the sensual perception	534
5. The cosmos	544
6. The natural desire	552
7. The barrier of potential	560
8. The asymmetry of nature	565
9. The nature of bodies	569
10. ἀντιπερίστασις	575
 CHAPTER X. BEING TOWARDS THE PLENITUDE OF BEING. CONCLUSION	 600
1. Being	604
2. The problem of the existence of God formulated in terms of classical philosophy	611
3. χωρισμός	623

PREFACE

1. The reason for demonstrating the existence of God nowadays

It has been rather commonly assumed that the conviction that God exists depends on one's worldview; is something subjective or private and not to be intruded. Moreover, the very fact of God's existence happens to be deemed but a problem of faith, and the faith understood as "a matter of conscience" (whatever the meaning of the latter), not, consequently, to be settled objectively. The very terms used appear to be affected by some vagueness. Consequently, every attempt to prove the thesis in question might be perceived as breaching the integrity of one's "consciousness" or intruding into the very personal, possibly with the objective to dominate over, or tamper with, the "personality" made up of some "ideas".

According to Thomas Aquinas, the statement "God exists" is not an article of faith. It is a preamble or prerequisite thereof. The reason seems to be plain enough: a Christian accepts the Revelation because of God's veracity, and it is impossible to believe someone whose existence has been *decidedly* doubted of. Thus, so as to believe *in* God, it is indispensable to have first a notion of Him really existing. According to Thomas, every man's natural intellect (not even directed by science) whilst observing the natural order of things, tends to conceive a conviction as to the existence of an Author of the order. Both faith and science (philosophy) renders this conviction accurate and complete. The Revelation is directed toward the natural intellect and cannot be an argument for its own veracity. Neither can Bible provide an argument for the existence of God, albeit it provides an argument of God's *gratuitous* existence in the world for those who admit His existence as such first.

In Thomas, the order of the *natural* world and its *personal* cognizance is meant. Now, what happens to be called science nowadays (in an exceptionally grotesque manner appropriated by e.g. Marxism) is far from being the competence of the *individual and natural reason*. Moreover, the "world" many believe to live in is but an artificial or "virtual" one, and created by man. The only order to be perceived there is that instilled therein by its creators. Now, the aim of the present book is to substantiate the statement "God exists" in both natural individual intellect and the natural order of things.

When accepting this statement, humans obtain the maximum of freedom achievable in the natural order. True, the statement happens to make humans accept the Revelation, but it is only because this acceptance is free par excellence, and is experienced personally as such. The acceptance is not emotionally motivated. The cognizance in question is *completely disengaged* in the sense of being harbored due to sheer observation of the world. Nay, it is but *one and only* cognizance stamped with the mark of *absolute freedom* – all the others cognitive acts being *engaged* in the fabric of the "human" world in some way, which is to say: *translated* into it. Hildegard of Bingen says: "We cannot live in a world that is not our own, in a world that is interpreted for us by others. An interpreted world is not a home".

The question arises as to the foundation of the freedom in question. Generally speaking, it is the cognizance that allows a man to determine his position in the world and to make decisions at all. From ages, it has been questioned how far a personal freedom is permitted to advance. And the simple answer reads: as far as it is not to conflict with *another* freedom. The answer must be called simplistic, because the freedom has been *imagined* to be material endowed with properties of bodies (expanding), whereas freedom as such must be *immaterial*, and if integrated of many is bound to enhance each of its participants.

In the first book of “Metaphysics”, Aristotle speaks of a science that gives the maximum of freedom just because it is most intellectual and provides the intellectual certitude, a kind of stability the current of material events bounces off. Needless to say, the certitude understood in such a way is – in the era of postmodernism – rejected a priori. Similarly, the possibility is precluded to achieve the plenitude of life in the way Aristotle thought it achievable. To be free is, according to him, tantamount to being for one’s own sake, and the science must be called free that is sought after for its own sake, which is the case with metaphysics. Now, the science demonstrates the existence of God, but every cognizance of God broadly speaking shares in the same characteristics to some extent.

The name of Thomas Aquinas has been adduced, because when searching a rational demonstration of the existence of God it seems to be only natural to turn towards the epoch when – as never before and after – the natural individual intellect was appreciated. For it is in the Middle Ages that Universities were founded and the foundations laid for the edifice of science about to be raised subsequently. In particular, it is in the 12th and 13th centuries that great scholastic systems were built. Thomas’s system was the most perfect of them.

In vain are then books to be sought written so “readily” as those of the “rationalist” – Voltaire. In vain are texts to be sought juggling with images and suggestive. In vain is the appreciation to be sought of phantasy and emotions. Both were stipulated to *serve* the individual natural intellect, which added up to *serving nobody else* and being *absolutely free*. The tongue of scholasticism is that of the distance towards the world (no matter how understood); that of no yielding to its influence, especially when the “human” world is meant bound to dominate over the animal in man, i.e. his/her emotions. For “man’s dignity demands that he act according to a knowing and free choice (*secundum conscientiam et liberam electionem agat*) that is personally motivated and prompted from within, not under blind internal impulse nor by mere external pressure. Man achieves such dignity when, emancipating himself from all captivity to passion (*sese ab omni passionum captivitate liberans*), he pursues his goal ... ” (Pastoral Constitution on the Church in the Modern World, *Gaudium et spes*, promulgated by His Holiness, Pope Paul VI on December 7, 1965, ch.17). And “the assent of faith is by no means a blind action of the mind”.¹

The medieval intellectualism was unique to a degree, but its archetype was the Greek *parrhesia* already. 24 centuries have passed since the term was coined in the ancient Greece. The spell of time makes it difficult to realize the precise meaning thereof. For it is not only the freedom of speech, but the freedom to express the most personal in us – the freedom of *word*. Humans try to articulate everything that happens to be conceived in the deepest strata of his/her intellect. In fact, the Greek imperative of living according to nature amounts to the same, as the human nature is intellectual, and the deepest in man is the very intellectual, as Aristotle has it. The freedom to unfold *actively* the deepest in man is just *parrhesia*. The Greek idiom crossed the boundaries of the ancient pagan Greece. The word occurs 31 times in the New Testament. Since it means: to speak the truth for the common good, it means: “boldness”, “confidence” and “trust” also; the truth we want to share with others.

¹ The Dogmatic Decrees of the Vatican Council Concerning the Catholic Faith and the Church of Christ. A.D. 1870, Chapter III. On Faith. English translation from Archbishop Manning.

Freedom of speech must be neatly distinguished from freedom of thought, as the latter happens to be understood as the license of contesting every definite guise of thought, to the effect of foiling every attempt of petrifying thoughts in the intellect and obliterating every word conceived in the intellect. For that is tantamount to destroying the basis of life and living space for human beings. Awkwardly as a space may appear to be used (and the freedom abused), it is not without a great damage, or at least, a great pain inflicted upon those who (ab-)used it, that a structure of human words happens be shattered. For the most arrogant is the attempt to “knock down” the structure and to try and “build from scratch”.

Freedom of thought understood as a license to offend (even those irrational) convictions of the others is not that much freedom as rather boorishness. Freedom of speech (freedom of word) is a desire to cherish every sparkle of truth (no matter how tiny), when preserving mutual respect, even towards those regarded as entertaining downright wrong ideas. For we cannot in advance be absolutely certain, whether our own views are adequate. This attitude was meant by the intellectualism of the Middle Ages. Never was it attempted to silence or shout down the convictions regarded as wrong. To the contrary: even those apparently inconvenient were systematically analyzed and thoroughly questioned.

“Respect and love ought to be extended also to those who think or act differently than we do (*reverentia et amor erga adversarios*) In fact, the more deeply we come to understand their ways of thinking through such courtesy and love (*humanitate et caritate modos sentiendi eorum intimius comprehendemus*), the more easily will we be able to enter into dialogue with them. This love and good will, to be sure, must in no way render us indifferent to truth and goodness (*indifferentes erga veritatem et bonum nos reddere*). ... it is necessary to distinguish between error (*distinguere oportet inter errorem*), which always merits repudiation (*semper reiciendum*), and the person in error (*et errantem*), who never loses the dignity of being a person (*qui dignitatem personae iugiter servat*) even when he is flawed by false or inadequate religious notions (*falsis minusve accuratis notionibus religiosus inquinatur*)”. (*Gaudium et spes*, 28).

Πᾶν-ρήσια, however, is “speaking of all” or “speaking of the whole”, also. Moreover, the whole in question may be understood as (in the Greek philosophy) – the world. This adds up to broadening the scope of interest of philosophy maximally. Alas, the attitude had been lost in the centuries following this spate of intellectual activity and the right for confidence (for *parrhesia* is that too) in the unshakable truth denied.

That is why, when coping with the problem of the existence of God, it is convenient to hark back to the medieval heritage of the West. It cannot be expected of anyone to accept such an (“unmodern”) assessment of the medieval bequest as adequate in advance. Neither could it be demanded of anybody to undertake the systematic survey of medieval texts on his/her own, so as to ascertain as for their value. The objective of the present book is to show this value in concreto (possibly in quotations) when advancing step by step towards the objective set down at the beginning.

Since the death of St Thomas (more than seven centuries ago), science has developed significantly, and the very dynamics of the development has been believed to be founded on the opposition towards the “backward” Dark Ages. Now, it remains to show how, and to which degree, the achievements of the Middle Ages possibly exercised real (albeit unhidden) influence upon the development in question.

Thomas Aquinas is deemed a theologian first of all. Now, in this book his theology is but parenthetically addressed. We focus on his philosophy, which is neatly and methodologically distinguished by Thomas himself (the philosopher) from theology. In other words: the natural basis of theology is “theologics” (the term coined by Aristotle). We can concentrate on the ground floor without taking into account the upper storey of his intellectual edifice. The founder of metaphysics (theologics) was Aristotle (Metaph., VI, c. 1, 1026a 18-21). He was Thomas’s master, too; the Philosopher with the capital “P”. For the philosopher, the ultimate objective of science is the cognizance of God (*θεός*). In the present book, we shall address the views of Aristotle (the advocate of natural reason) as often as only possible. As however, the distinction in question was generally abandoned (to the detriment of both philosophy and theology) some purely theological problems will be addressed (as entangled in philosophical thought) nonetheless.

The absence of philosophy as such or the philosophy setting such ambitious objectives as those proposed by Aristotle is clearly perceptible nowadays. Many physicists tried to tackle philosophical problems; apparently bearing the testimony to that philosophy is the kind of human rationality not sufficiently explored until now. Thomas called metaphysics the natural wisdom everyone tends to obtain, for “the intellectual nature of the human person (*personae intellectualis natura*) is perfected by wisdom and needs to be (*per sapientiam perficitur et perficienda est*), ... Our era needs such wisdom more than bygone ages ... For the future of the world stands in peril unless wiser men are forthcoming (*nisi sapientiores suscitentur homines*)”. (*Gaudium et spes*, 15).

In the present book, we focus on the theoretical demonstration of the existence of God. But if so, it is impossible to answer the question of the usefulness of this knowledge. Accordingly, the title of this chapter is meant to address the nature of the fundamental (which is to say: not subordinate to another end) aspirations of human intellect. To ask “what for” in this context is as preposterous as to ask “what for we may feel pleasure”. The bliss of the contemplation the Aristotelian philosophy promises surpasses all what is useful only. The cognizance we are speaking of is a kind of intellectual fulfilment. But there might be some *particular* obstacles on the way. Every science, according to Aristotle, concerns universals, and the science in question concerns the universal Cause of the good. But on the other hand, the universal value whatsoever can be contested *for some reason*, and some special difficulty appear; all the more so as it is just universal, i.e. precious. That is why the question of the reason of the demonstration of the existence of God had to be put forward.

In the present book, the problem of the existence of God is undertaken, because the knowledge in question is *valuable as such; is worth choosing for its own sake*. The problem is addressed despite the very disengagement being commonly assessed worthless nowadays. Or rather to the contrary: the problem is addressed *because* it seems necessary to restore a non-reductive, non-utilitarian dimension of human life. The forgotten treasure of the Western Civilization is to be unearthed for the sake of the integer humanity and human freedom. There is something *beyond* what is normally acknowledged as valuable. The problem is that it was lost sight of.

A man can experience his/her being free to the extent he/she *approaches* God, Who is absolutely free. To be and to live so (freely) excludes every imperfection, e.g. being ill or ill-natured. Being affected so can befall anyone and it seems *reasonable* to remove the obstacles

when advancing towards the End. The *approach* to It philosophy proposes might seem reasonably modest; it is no ethics (albeit, according to Thomas, it is the best remedy for the spiritual illness called sorrow). Neither for that matter is it theology. The latter teaches to listen to the steps of the *approaching God*. In metaphysics, we can delineate the Way to the End, but we cannot pave it. Seeing what is worth choosing might be a token of liberty. But to be chosen is the source of freedom. Metaphysics shows but a possibility of being chosen.

Thomas uses the word “via” (way) when speaking of the modes of the demonstration in question. “The existence of God can be proved on five ways” he says. The kinetic proof is the first one. What is its relation to the other four? Can (or possibly: ought to) exist the other “ways” also? We cannot as yet answer these questions. Let it suffice to say that the analysis of motion seems to be the most convenient and apt for modern type of rationality, which was – parenthetically speaking – the case with scholastics, too. According to Thomas, the Way from motion is more apparent than the others. That is why, searching for a rational proof, we undertake the analysis of motion. Nevertheless, the other “Ways” will be mentioned in the following chapters, too. Thomas’ First Way is a continuation of Aristotle’s proof for the existence of the Unmoved Mover. Some call it the cosmological argument for the existence of God.

Addressing the aforementioned heritage of the Western Civilization is not to be understood as defending anachronistic views cherished in antiquity and for some time thereafter concerning the no-existence of void, infinite velocity of light, geocentric system, etc. They are nothing save *signs* (or examples). It is proper for the Aristotelian Physics to use both demonstrations strictly speaking and argumentations through signs. If so, it is possible, and sometimes indispensable to interpret those signs according to what is necessary for science as such, albeit *verbally contrary* to what Aristotle himself (perhaps wrongly) deemed to be demonstration *sensu stricto*.

To sum up: we face a problem of the pivotal importance for the rational human nature. We *happen* to face this problem *now*, no matter how much our “now” is affected by the idiosyncrasy towards the intellect. Harking back towards the past, we could find possible solutions of the problem; solutions that must not be overlooked, underestimated or disregarded in advance – which is to say: “silenced”, no matter how much the “now” seems to be “superior”.

2. Form of the proof of the existence of God

The kinetic proof of the existence of God assumes in Thomas the following form:

- a. Motion is the most apparent phenomenon to be perceived in the world;
- b. Everything moved is moved by something else;
- c. In the chain of the moving and moved we cannot advance in infinite;
- d. So, there is the *first* moving;
- e. The first moving is called God by all men.

The points a. – d. of the proof belong directly to the science called by Aristotle “physics”, which (for the sake of clarity and so as to distinguish it from physics commonly so called nowadays) will be subsequently called *scientia naturalis* or *Physica* (or *Physics* with the capital “P”). The point e. does not belong to *scientia naturalis*, for the complement of the proof is wrought by metaphysics, which, consequently, stamps it with its own characteristic, so that the proof as such (as a whole) belongs to metaphysics itself. (Aristotle, in the 1st and 12th book of “Metaphysics”, states that metaphysics as such is oriented towards the cognizance of God – the Prime Mover).

The reason seems to be plain enough: *scientia naturalis* considers being in motion, whereas metaphysics – being as such. Consequently, *scientia naturalis* demonstrates the existence of the first moving principle, whereas metaphysics demonstrates the existence of the First Being. Notwithstanding important differences in how Thomas and Aristotle proceed in metaphysics, the very fact that the subject matter thereof is being as such makes it that we prove the existence of a Being that is *the absolute act; absolute perfection* (which is included in the notion of the *first* being) and not merely a factor making the cosmic motion actual. For notwithstanding whether *form* is regarded as the absolute perfection (as in Aristotle), or is solely a *principium* thereof (as in Thomas), the actuality of being (connected with form after all) is the subject matter of metaphysics.

The proof in question is called by Thomas “more apparent” (*manifestior via*) than the others, which is (as mentioned above) connected with the fact that its starting point is the most evident one, motion being the most salient feature of the outer world we observe. To avoid misunderstanding, it should be pointed out just now that motion (or *a* motion) is to be understood as an event, fact, phenomenon, which is in the perfect accordance with what Thomas and Aristotle say themselves. Still, obvious as motion may appear and identical with the fact, the precise relation of motion *in general* to facts, events, etc., is to be settled, all the more so as the precise notion of fact is far from being plain nowadays, and the existence of naked facts happens to be even rejected. Still, as has been said above, “we cannot live in the interpreted world”; in the world where words obstruct nature. There is “no hard evidence” of God’s existence, but there is enough evidence in the world of crude nature to embark upon a systematized scrutiny for the existence of the First Being. No direct evidence of God’s existence is normally (according Thomas) accessible to humans. We can know Him but indirectly, by the proxy of a demonstration. There might be some evidence for/against the existence of anything at all, as far as the starting point of an inquiry is concerned. But the conclusions are peremptory nonetheless. No arguments raised “against” the existence of God ought to be ignored on purpose, unless formulated in the way making a constructive dialogue impossible.

Albeit the bulk of the demonstration is to be found in the two last books of the Aristotelian “Physics” and its mere complement – in the last book of “Metaphysics” (and the whole proof in a concise form occupies just several lines of Thomas’ “*Summa Theologiae*”), nevertheless, according to Thomas, it is metaphysics that is entirely responsible for the validity of the proof (in its totality). In other words: the natural cognizance of God involves all parts of philosophy, to the effect that philosophy in all its guises (those modern included) is in some way related to the problem of the cognizance in question. In consequence, we ought to undertake a polemic with those threads of modern philosophy that might appear to be less

distinctly interwoven into the tissue of the fabric of classical philosophy. On the other hand, “Summa contra Gentiles” is directed against philosophical errors, and the proof in question is adduced there in a more detailed form. But in fact, the Summa was written rather *for* heathens than *against* them. No matter how obstinately clung to, the errors can never become those who harbor them. People should be given an opportunity to be liberated from errors. The openness of mind (mentioned above) dominates in the Summa.

In the present book, the extent of the proof is far from being justified by stringent scientific requirements. The extent of the book might appear disproportionate to the concise syllogism adduced above. The proof as presented here may appear even prolix. Its extent is only justified by the fact that, *historically* speaking, the terms involved underwent such a significant change of meaning, that they should be reevaluated (their value restored), which cannot be done without addressing problems but *indirectly* connected with the proof. First of all, the very term of motion is meant.

3. The significance of the term “demonstration”

It remains to clarify the significance of the term: “demonstration”. The term is meant to correspond to the Latin *demonstratio* and the Greek *ἀπόδειξις*. Now, the notion of *ἀπόδειξις* is clarified in “Posterior Analytics” by Aristotle. It is such an argumentation that generates science. Science, in turn, consists in knowing both that something is such-and-such and that it impossible to be otherwise (Analitica Posteriora, I, c. 2).

Following the etymology of both the Latin and Greek word, it can be said that a demonstrating, nay, even, pointing out to something is meant here. True, scientific demonstration cannot consist in pointing, say, with a finger, because particular things (only possible to be pointed at literally) are not the subject matter of science, and the very science consists in the dematerialization of (and departing from the particulars endowed with) sensual data. Consequently, when speaking of *ἀπόδειξις* an analogy is used, similarly as when saying “in the light of ...” apparently not the physical light is meant, but something that spawns the effect in the immaterial mind somehow similar to effect of natural light, instead. To communicate anything to anybody, the terms are to be used that transcend the spatiotemporal, and apt to be evaluated in other material circumstances, remaining, nonetheless, the same. In this sense, the notion of dematerialization is an essential characteristic of science.

However, there is a science in which demonstrating could be understood almost literally, viz. mathematics, as the subject matter thereof is *put before our mind* with such a clarity that it makes us believe that the intellect of each one individual envisages the same. The reason of this illusion is that mathematical objects are grasped in imagination, and the imagined can be, in a sense, pointed at. Some (as Avicenna and Kant) even believed in the imagination being “creative”, as the objects imagined are, indeed, “created” within the imagination, whereas the material circumstances are but a rough “approximation” of an idea imagined in such a way. However, if searching for *the genesis* of the ideas (which was

dropped by Kant), a kind of dematerialization of those circumstances is to be expected. Perhaps, it is because of that feature of science in general that Claudius Ptolemy (Syntaxis Mathematica, I, Ch. 1) ascribed the term of demonstration to mathematics first of all and situated it in a vaster paradigm of science. The science is nowadays called exact, apparently because of the acuteness of the ideas imagined, the very dematerialization not being so salient now as it happened to be when mathematics tended to ascertain its own position in the edifice of science.

Now, should the demonstration in question be supposed “exact” in the contemporary sense, some serious misapprehensions might appear. For according to Thomas, both scientia naturalis and metaphysics differ distinctly (as to the method too) from mathematics. The former does so, because its subject matter is closer to the physical circumstances accepted as a margin of uncertainty of the laws universal to a degree, which is to say: the extent of their validity is as universal as how universally the nature is considered. The latter does so, because – to the contrary – it transcends both the material and imagined (Thomas, De Trinitate, 6, 1, 2, c). Using the same, universal method in them three leads to some unlawful extrapolation of a given system of statements upon the realm foreign to it. Should we regard the mathematical method as exemplary, none of the two others can be shaped after the exemplar. None of them, too, is “exact” in the sense commonly assumed nowadays nor, consequently, can they become more “scientific” or “exact”. The three aforementioned sciences are situated by Aristotle in the scheme of theoretical science on their own terms; and it is because they differ as to the method essentially that they happen to be no less deign the name of science than mathematics itself is.

Contemporarily, many people believe that mathematics is the most universal and precise mode of thinking, whereas other sciences are to be fashioned after this paradigm. They are believed to approximate the paradigm as far as being experimental. “Indeed today’s progress in science and technology (artiumque technicarum) can foster a certain exclusive emphasis on observable data, and an agnosticism about everything else (phaenomenismo et agnosticismo favere potest). For the methods of investigation (methodus investigandi) which these sciences use can be wrongly considered as the supreme rule of seeking the whole truth (immerito pro suprema totius veritatis inveniendae regula habetur). By virtue of their methods these sciences cannot penetrate to the intimate notion of things (ad intimas rerum rationes penetrare nequeunt). Indeed the danger is present that man, confiding too much in the discoveries of today (inventis hodiernis nimis fidens), may think that he is sufficient unto himself (se sibi sufficere) and no longer seek the higher things (altiora amplius iam non quaerat)”. (Gaudium et spes, 57).

Moreover, another aspect of the problem is to be pointed out. The mathematical demonstrations are those a priori. Should the problem be put in the terms of classical philosophy, it must be said that they lead from causes to effects. The “essence” of circle is a “cause” of its having certain properties. Moreover, due to the very fact that the subject matter of mathematics is grasped in imagination, it is grasped *completely*, for the intellect embraces the imagination. Consequently, mathematical objects are embraced by the human mind. Now, these both features are unacceptable in the case of the demonstration in question. The demonstrating of the existence of God is not the demonstrating of His cause, for God is commonly and appropriately understood not to have any cause at all. Neither can the fact of

His existence (which is to say: the existence of all possible manifestations thereof) be grasped completely, for we face the restrictions and weakness of our intellect when facing what surpasses it infinitely. The problem is mentioned in the 2nd book of Aristotle's "Metaphysics". In other words: there is another mode of the dematerialization of sensual data than that used in mathematics. Moreover, *scientia naturalis* and metaphysics do not proceed from causes to effects, but to the contrary: they conclude the existence of causes when observing the material objects (effects).

The problem can be expressed in the tongue of Aristotle and Thomas as follows: *demonstratio quia* (συλλογισμός τοῦ ὅτι) (demonstrating *that* something exists), is used in the proof, neatly to be distinguished from *demonstratio propter quid* (συλλογισμός τοῦ διότι) (demonstrating a cause of the existent fact). The *fact* that God exists is to be explained, but the *fact* is *not* *spawn* by any being. In "Posterior Analytics" (Bk. I, Ch. 13), Aristotle adduces downright banal examples of the former kind of demonstration, which testifies to that a sheer logical problem is faced here. In consequence, we cannot have a cognizance whatsoever, *why* God *must* exist, save in the sense that *we must* accept His existence, were our intellectual inquiry to advance towards the ultimate boundaries possibly accessible to human intellect. So, the statement "God must exist" (if taken literally) is nonsense; at best, it is but a colloquialism to be understood in the terms of the necessity of demonstration. The very necessity makes for it to be scientific *par excellence*.

The methodological context of the terms used here shall be clarified. For not a cognizance whatsoever is meant, but that generating certitude, i.e. the stability and firmness of the words conceived in our intellect. Every human activity is dynamic to the extent its foundations are firm and immovable. According to Thomas, the intellect is the foundation of freedom. The cognizance in question generates the maximum of freedom, often envied, taunted and despised just because of its firmness. Nobody, consequently, can be denied the right to intellectual certitude. "Reasoning is able to prove with certainty the existence of God" (Denzinger, *Enchiridion Symbolorum Fidei*, 1622).²

There is another problem yet. *Demonstratio quia* happens to be described by Thomas as *demonstratio per signum*. Now, as the proof in question is scientific *par excellence* (in the sense presented in "Posterior Analytics"), one should distinguish two types of *demonstratio quia*. The demonstration through a sign is bereft of a stringent scientific value, albeit not of a certain heuristic one. Addressing the matter at hand in the terms of the latter, we could *imagine* a house carefully arranged and ordered. It is only natural to assume that there exists an author of the order, an order not being likely to appear all by itself. No less natural is it to assume the author to be a person, for an order stems from an intellect, which makes for anybody to be a person. Now, it cannot be doubted that the natural world appears as an order,

² Theses a Ludovico Eugenio Bautain iussu sui episcopi subscriptae, 8 sept. 1840 (et 18 nov. 1835); (sous Grégoire XVI); Theses de fide et ratione oppositae fideismo. 2751 1622 1. Le raisonnement peut prouver avec certitude l'existence de Dieu et l'infinité de ses perfections. La foi, don du ciel, suppose (est postérieure à) la révélation; elle ne peut donc pas convenablement être alléguée vis-a-vis d'un athée en preuve de l'existence de Dieu (cf. DS 2812).

so that the natural intellect is prone to assume the existence of somebody that is its author. The assumption is as firm as not to be easily eradicable. It requires a considerable amount of energy on the part of the advocates of the co-called “scientific worldview” or rationalism to root it out. Indeed, we face here the human thought half-way to its fulfillment; to assuming a firm rational guise and yet really susceptible. The proof which is rational par excellence is about to appear but later on in the climate of the aforementioned parrhesia. To the contrary, the assumption that the order of things is completely casual is not that much irrational as rather antirational and downright destructive; its obtruding force must be foiled, because parrhesia is meant to defend human intellect; not to defend those who please to attack it. The former assumption, on the other hand, is fostered by every undebauched intellect, even if unguided by science or religion (Thomas, *Summa Contra Gentiles*, III, c. 38). For *demonstratio per signum* is just an argumentation endowed with a certain verisimilitude. Consequently, it should be distinguished from *demonstratio quia*, being but a spontaneous conviction as to the existence of the First Cause, whereas the latter is the stringent argumentation concerning the relation of everything that appears in a certain order (either in a certain sequence or in a certain objective connections) to its Cause. The existence of God is “an absolute fact” – the most important possibly knowable.

As the notion of the order of the Universe has been mentioned, it should be pointed out that the proof from finality of the world is somehow symmetrical to the kinetic proof. For every moving moves towards some end. The very term of end (in English) is affected by an equivocation, which, might hint to a hidden kinship of the notions involved. The same is the case with the Latin *finis* and Greek *τέλος*. The motion terminates in what proper to it, i.e. natural, and expected to correspond to this kind of motion. The demonstration of the existence of the First Mover is, consequently, the same as the demonstration of the existence of the Author of the order of the universe.

The verisimilitude of the proof from finality was even granted by Kant – the destroyer of metaphysics and the founder of agnosticism. Still, according to Kant, the proof from finality is that of the existence of an Architect, not of the Creator of the world as traditionally assumed before him. The core of Kant’s reasoning seems to apply to those (pre-scientific) convictions mentioned above, albeit its conclusions rash and unjustified. The existence of order of a house can be admitted without assuming the author thereof being a maker of the things ordered in a certain manner. Indeed, the assumption that the ordering must be identical with the creating could appear queer, for we do not expect e.g. a watchmaker to produce the material used, and, as not even material (e.g. the material used by a watchmaker) can be created by him, all the less so could matter as such. As was mentioned above, the criticism is addressed by Kant at the *demonstratio per signum*. For we use a *sign* taken from the *human* world, and humans are not expected to procure the material for their artefacts, if the material is to be understood as completely rough. Still, Kant did not take pains to survey the proof from finality as presented in the stringent scientific form; i.e. to define all the terms used. A layman can, for the time being, put up with a *sign*; a scientist is not allowed to do so. In fact, the philosophical notion of bodies had not been clarified. It might have appeared clear to Kant, but is not indeed, and (historically speaking) accepted from a medieval thinker writing in Arabic – Avicenna, and passed it on, subsequently, to Avicenna and Descartes. Avicenna assumed the existence of a form common to all the material things, and called it “corporeity”.

The existence of “corporeity” was by no means obvious to Aristotle, the forms of bodies being different, including those elementary. It is but a unity in variety that constitutes the world – not its allegedly deepest stratum. Similarly, in Thomas, the variety of elementary forms makes for the structured unity of the universe to appear. Now, the finality in question appears first of all in the tendency to assume and preserve a given elementary form. Should it be otherwise, the mythical matter devised by Avicenna and Kant must prove non-cognoscible, for it is the formal in things that makes them cognoscible at all. The conclusion was, parenthetically speaking, accepted by epigones of Kant, to the effect that the shapeless material of the universe “evolved” in an unforeseeable direction, at random, bluntly speaking. No inconvenience is foreign to the Kantian world, nay, the only rational is to be demanded from a creator of the *human* world. The problem is that the “creator” has proved not to live up to those *demanding* expectations. The “human” has proved to be *antihuman*.

Following the footsteps of Aristotle, we are entitled to ask what tends to accept a given elementary form. According to Aristotle, it is prime matter that does so. Some happen to say that, according to Aristotle, prime matter is eternal and uncreated. As can be easily gathered from the aforesaid, a Kantian pattern of thinking had been adopted here; the pattern foreign to Aristotle himself. True, prime matter might have been eternal, but the very fact of its tending towards elementary forms should be accounted for. The tension in question stems from somebody (or, at least, from *something*). According to deists and Kant, the “bodies” can dispense with a “creator”, which, however, is not the case in Aristotle, for putting aside the problem *when or if* a tendency in question begins (time being implied in the biblical Genesis), it *must* originate from a source, albeit not necessarily from a given point of time. The world might have been created from eternity, and Aristotle accepted such a possibility. No matter how the First Moving is called, the very fact of the existence and endurance of natural forms must be accounted for, the motion being not that much that of the “matter” (Buridan, Descartes) as the tension towards forms whatsoever, those elementary included.

Thus, the problem is that of the equivocation included in the term of “eternity”. The world might well have been “eternal” in the sense of the infinite series of events being theoretically possible (Aristotle did not know the first sentence of the Genesis). But this world would not be co-eternal to God nonetheless. God’s eternity is God’s life and the fact was admitted by Aristotle himself. This life cannot unfold parallelly to the existence of the world, which is to say: it precedes it absolutely and is creative thereof. The word of “creation” was not used by Aristotle, but the sense of his own words is plain enough.

Moreover, the very notion of the *existence* of God should be clarified. Now, the *fact* that God exists is meant here, similar to the fact of, say, the existence of atoms or the ancient Troy. What exactly was demonstrated by Schliemann? Apparently, some evidence (some facts cognitively ordered) led with a considerable amount of probability towards the acceptance of the existence of Troy. Many before Schliemann regarded Troy as an output of poetical imagination and “created” by Homer. “Schliemann’s dream” unfolded following the relations of things more easily perceptible towards the object whose existence was but *inferred*. Probably, the existence of Troy might be rejected someday, should the existence of objects occur which might render the cognizance in question unsubstantiated. It is not the case with the fact of the existence of God. It is *inferred* from, and *traced back* to, the relations of objects *towards something*. But it is impossible to occur objects that would render the

conclusion of the proof void, for the objects of metaphysics are not affected by the contingency of the spatiotemporal. A scientific proof, according to “Posterior Analytics” is necessary in general, and the conclusion we are speaking of is scientific *par excellence*. The necessary relation of the world to *something beyond* is proved, which might be *something before* but does not need to. Consequently, the existence of God is to be understood as the co-existence of the world with its transcendental Cause; the co-existence asymmetrical, as God can exist without any of His possible effects, whereas things must not exist without Him.

When speaking of the fact that is undeniable, it is to be distinguished between rational arguments that could be advanced against the statement, and the arguments raised to undermine objective truth (its cognoscibility) as such. True, forming the statement in question might appear *subjectively* difficult, the subjective being understood either as human subject as such or the human subjectivity historically formed. If the former is the case, the affectual in humans make them unwilling to accept this conclusion. The conclusion is meant to overcome the animal (emotional) in men and to liberate the intellectual. Emotions cling to particulars, and the general source of good might be overlooked. The general *reason* why it *could be* the case is the weakness of human intellect, which is prone to yield to emotions and be sluggish in seeking for absolute freedom. The weakness was pampered and the human subjectivity created hostile to the very outlooks of obtaining the definite truth. Consequently, these “historical” difficulties are to be addressed to the extent the truth might be extricated therefrom after all. For all its being hostile to the intellect, it is impossible for the subjectivism to attack reason without *some* reasoning. Such a reasoning is *indirectly* addressed in the book. When advancing towards the end, the obstacles waylaid must be removed, albeit no exceptional importance attached to what they are in themselves.

4. The scientific status of the proof of the existence of God

In the preceding chapters, the problem whether, and possibly in what sense, the existence of God could be proved scientifically, was addressed. In other words: are *scientia naturalis* and metaphysics to be deemed sciences as commonly understood nowadays, i.e. in the sense modern physics and mathematics are? To put it otherwise: granted (as it seems to be only natural) that mathematics and physics are theoretical sciences, might (or possibly should) it be assumed that besides the two aforementioned there are some no less theoretical ones yet? Are we allowed to assume that there is one genus of theory and the four species thereof?

The problem might be tackled from another point of view, viz. that of classical philosophy (which seems to be more general one) as follows: why physics and mathematics are to be regarded as theoretical sciences, i.e. those of an absolutely universal value? If tackled so, the problem appears to be, to the contrary, that of how the notion of theory is to be understood in the most general terms. The fact that mathematics proved to be a convenient means to get to know the physical world is not an answer, as the answer was formulated in historical terms, which are contingent. Similarly as when any historical problem is being coped with, some circumstances might have been overlooked and as effective as unheeded.

Possibly, some day we would awaken to the fact of our being bereft of the precious means of cognizance of physical works just because we have forgotten how to use it *effectively*. Consequently, the problem reads, *why* mathematics proved to be efficient at all, and we cannot put up with pointing out historical events that seem to bear testimony to its efficiency. Moreover, the very problem might have appeared impossible to be solved at all (Bourbaki), notwithstanding the fact that the future of science is at stake.

Still, when solved it would have enabled us to set down *boundaries* in which mathematics could be applied to the cognizance of physical world. Or to the contrary: the very problem might be tackled successfully when embarked upon from the point of view of *boundaries* in question. The problem does not need to be regarded as abstract: we can simply ask what is *between* our mind (and ideas in it) and the physical world?

The lack of such like considerations seems to be perceptible nowadays, for the boundaries of science must not be trespassed as is the case with popular science ideas that people the imagination of an ordinary “consumer” of scientific ideas.

The problem of neat distinctions in the matter at hand is connected with that, since Kant, metaphysics has been believed to hamper the progress of science. *Scientia naturalis*, according to Maritain, had been disposed of even earlier. Let us accept, for the sake of argument, that metaphysics did so, indeed (the sense of “hampering” will be elucidated next). Now, according to Aristotle, metaphysics is theoretical *par excellence*, so that it is obvious that every attempt to use its conclusions in accumulating the so-called material values (which is meant by progress) is doomed to failure. If something is a theory, it cannot become a praxis. Or to formulate the problem even more distinctly: possibly, every theory as such is bound to hamper the progress if the latter be understood in the aforementioned manner (A theory can gather conclusions, but not values, obviously enough). This assessment of theory seems to chime in with modern thinking; for pragmatism seems to be the token of modernity indeed. So, the status of theory as such is in fact questioned. But if so, the theoretical physics too that could happen not to live up to such like “expectations”. Theoretical physics proved to be of practical value, which, however, is but *indirectly* connected with how it developed itself. Paradoxically, the very fact that a theory is about to be used practically is likely to destroy and frustrate the inner dynamics thereof, which is to say: hamper the *actual* progress of scientific discovery. For if a science is being used, the one who is dedicated to it wholeheartedly might be used also. As can be easily seen, progress does not need to be understood in the commonly accepted manner. For the personal progress (making for the dynamics of life) seems to be prior to the social one. Similarly, the life scientific is the one of *a scientist* first of all. Now, the dynamics in question is connected rather with the disinterested (theoretical) pursuit of truth.

Hampering the “progress” is, consequently, to be regarded as thwarting the utilitarian attitude towards science and life in general. Still, as it is impossible to disregard practical issues, the problem of theory is the problem of the *equilibrium* between the two aforementioned aspects of human activity. Until about the turn of the 20th century the equilibrium still existed. Theory hampered effectively attempts to reduce man to the status of *homo faber*, which is, however, not the case nowadays. The equilibrium has been destroyed to the detriment of: (1) theoretical physics, (2) man as such, i.e. rational being not to be treated instrumentally, (3) the praxis that had been drawing its vital forces from the unhampered

theoretical activity. A scientist is likely to forget – as least for the time being – about how his theory could be used practically, regarding it as simply beautiful, and when reminded of the practical importunately, loses the interest in life and activity at all.

“Within the individual person there develops rather frequently an imbalance (in ipsa persona frequentius oritur inaequilibrium) between an intellect which is modern in practical matters and a theoretical system of thought (theoreticam cogitandi rationem: regard for theoretical considerations) which [or: who] can neither master (subigere) the sum total of its [or: their] ideas, nor arrange them adequately into a synthesis (neque in syntheses [plural] apte ordinare valet)” ... “because of development coming so rapidly and often in a disorderly fashion (tam rapida rerum mutatio inordinate saepe progrediens)”. (Gaudium et spes, 8).

So, metaphysics (effectively present in human mind at least till the turn of the 20th century) hampered the “progress” if understood in the aforementioned manner. Or, it hampered the unbridled greed for using everything precious and beautiful in human activity for the benefit of the practical.

Metaphysics cannot be used *directly*. Still, there is an “anthropological” aspect of the science. According to Cicero, (in “De finibus bonorum et malorum”) “for man, there is no cause for philosophizing except (in order) that he be happy” – as quoted by Augustine. For St. Augustine the final purpose of all learning is the acquisition of happiness in God. Nulla est homini causa philosophandi, nisi ut beatus sit, he says in De civ. Dei 19. 13. The same at core is said by Aristotle in the 10th book of „Nicomachean Ethics” and the 12th book of “Metaphysics”. Now, a man is happy if fulfilled and of dynamic personality – full of inner freedom. The freedom in question is given by metaphysics (Metaphysica, I c. 2, 982b 25 ss.). Now, it is impossible to *use* anybody’s happiness practically. A person free can both build the welfare state and make his own garden. To the contrary, it seems to be obvious that some can profit materially from the others being *unhappy*, e.g. poor or miserable. A material profit can be drawn from bringing people out of poverty and misery, provided the bringing out be never accomplished and serve those bringing out, not those brought out. That is a special kind of “charity”.

Consequently, everything depends on whether the acclaimed progress is devised in advance or left to the unhampered activity of humans. The theory as such fosters the latter one, whereas the former undermines the very freedom and activity in advance. So, the problem of theory is to be thought over from scratch. It will be attempted in the following chapters.

Once the status of a given theory is set down, it is possible to adopt its conclusions (using an analogy) to another one. The distinctions must not be blurred, but on the other hand, it is possible to use analogy when clothing a given system of statements in the tongue of another science. This is in perfect accordance with what is said by Aristotle in “Posterior Analytics”.

The scientific requirements must be met; the boundaries are not to be trespassed, which, however, does not add up to isolating sciences from each other. Indeed, according to Aristotle, all kinds of knowledge are hierarchically structured and ordered, which is expressed in the term *ὑποτιθέμεναι*. To put it in the tongue of scholasticism: they are *subalternatae*. The data of an “inferior” science are interpreted in the tongue of the “superior” one (subalternans). Consequently, if an inferior one puts up with the statement that it is so-and-so

(i.e. with a fact *particular* to a degree, or a particular *coexistence* of objects), it remains to prove in the superior one *why* it so, and, eventually to prove – so to say – the “absolute fact”, i.e. the *absolute correlation* of everything in the physical world, and the fact that the universe (as a whole) depends (as to its beings) on the Outer Side. A science is superior to the degree it departs from particulars and advances towards the immaterial. Now, as the relations of the material are *besides* the material (not being material themselves), they are retraceable to the Source of the order.

Averroes naively supposed that the totality the highest science faced consisted in its knowing literally all the objects, and attaining the highest possible state of “consciousness”. Averroists, in turn, deemed the ultimate beatitude of man to consist in such a cognition. According to Thomas, the totality understood as that of the entirety of objects is impossible to be known for human intellect, and the ideal unrealistic. The *relations* of the material or the *relation* of everything physical to its Transcendent Cause can be known nonetheless. The knowledge, in turn, is pivotal for man. For it is impossible for him to find the rest save in *dependence* on (i.e. a relation to) the Source of his existence. Now, the theory in question gives *some* rest.

For us humans, it is easier to define things; to grasp *an object* as immaterial. Nevertheless, the most perfect intellectual cognizance consists in seizing relations as such i.e. forming judgments instead of definitions (*intellectualiter procedere*). Now, this is proper to metaphysics. It is metaphysics that sheds a light upon conclusions (judges them) otherwise deemed peremptory if viewed in a particular aspect only (Contra Gentiles, II, c. 4, n. 5).

Nevertheless, metaphysics is far from being an idiosyncrasy toward any definite guise of thought, as in Bergson. To the contrary, the value of words of the intellect whatsoever is affirmed. The words happen to be perplexed, i.e. disarranged. It may appear easier to destroy them totally than order them patiently. A medication can succeed in killing bacteria along with their carrier, and it is a “perfect” treatment, in a sense.

When speaking of the cognizance of causes, a science is to be mentioned that gets to know the Ultimate Cause of everything, impossible to be known in any particular science directly. *Intellectualiter procedere* is tantamount to resigning from imagining the relation in question (*imaginatio est omnino reliquenda*). Thus, no spatial and temporal terms are of importance in coping with the problem of the existence of God. They might be *provisionally* used, but never taken literally. However, should we try to avail ourselves of the imagination after all, we must turn to particular sciences so as to “illustrate” the otherwise totally “abstract”.

5. The name of God

The expression: “the philosophical proof of the existence of God” is likely to jar upon the minds of those who are used to turning to God with the simple act of the intellect, without analyzing it. It could probably seem to them that the philosophy was about to intrude upon their very personal relation towards God. People happen (not very often, alas, nowadays

though), or at least used to be ascertained as to the existence of God, and every attempt to tamper with this certitude is duly to be regarded as unacceptable. Now, the philosophical proof of the existence of God is not meant to be such an attempt.

To explain the problem at hand, it should be noticed that man, albeit being a rational being (i.e. that endowed with the intellect and will) and able to address his/her desires (and possibly his/her thoughts, too) to God directly, is a material being too, which is to say: his/her being rational is a hostage to what is material he/she lives in. The acts of intellect are accomplished in material circumstances, and it is only obvious that man is free to the extent of being rational, whereas, the physical in him or around him happens to be unyielding to his *personal* wishes (which was somehow excessively underscored by Neo-Platonists). Especially, it is the case with language. There are two aspects of a sign: the immaterial significance, and the physical carrier thereof. Paradoxically, words happen to be destitute as soon as spoken or written (which is to say: clad with the material). They happened – to use the words of the 7th Epistle by Plato – “powerless”. Perhaps, the problem of Platonism is not so much that of “idealism” as that of being aware of the weakness (susceptibility) of the spiritual in men. And, as all the material is in perpetual change, so the attitude of a man towards God, *may happen* to share the same dole of instability, too. Durable and pure as it is, it might have been fragmented along with material circumstances we live in. Both natural and artificial objects are meant, although it are not the former that pose such a threat. Natural things show more distinctly their dependence upon God, whereas the same things when forced into an artificial set devised for a practical purpose, are bound to blur the aforementioned relation altogether. “Modern civilization itself often complicates (*difficiliorem reddere potest*) the approach (*accessum*) to God not for any essential reason but because it is so heavily engrossed in earthly affairs (*nimis rebus terrestribus intricata*)”. (*Gaudium et spes*, 19).

Savages are not likely to be atheists, just because their human world (i.e. the artificial one raised by them) is quite unsophisticated and unprepossessing, not able to “compete” with the natural. They are theists, although God is far from being seen by them distinctly enough. Nay, His essence might be fragmented into a variety of objects called “gods”. If, consequently, nature appears to pose an obstacle to the cognizance in question, all the more the “human” world does so. Indeed, there happen to exist “many gods”; nay, they may be so *many* that the very notion of deity disappears. We can seize the problem philosophically: there are many *objects* that are regarded as ultimate so that the very objects are, in fact, the same as “gods” of polytheists. Moreover, not even the very name of the ultimate needs to be used: it suffices to justify all human desires as *equally* acceptable. Thus man happens to “create” gods. There are as many gods as many are obstacles that separate humans from the *real* God.

The problem of the name proper to God appears distinctly in the so-called rationalism. Indeed, the rationalistic ideas of God may appear abhorrent to many, rightly enough. For it is not the transcendent God that is meant, but the *idea of God* devised by “specialists”. There is, according to Hegel, a *good infinity*, to be contrasted with the bad, transcendent one. Good means “tame” here. The Hegelian infinity stems from the human world; harmless and friendly. Hegel’s Absolute Spirit is a synthesis of the human mind and the “world” created by it. As a conclusion comes the statement by Feuerbach and Marx that it was man who “created” God, which is true, to a degree, because the created had been the “idea of god”.

The relation of a man towards God might be, theoretically speaking, quite simple. However, due to his existence in the world (understood in either of the aforementioned meanings) it is never *practically* simple. The act in question is complex to the degree how one's actual existence in the world happens to be complex. The existence could be not only complex, but complicated or even perplexed. One's attention and desires happen to be "distracted", i.e. led astray from the only thing to be desired at all. Consequently, the relation in question seems to be that of a wanderer (*viator*), and the very relation appears to be a pathway (*via*). The pathways happen to be winding, fraught with obstacles and snares. Every step advanced towards the ultimate is likely to fall upon unstable ground.

The problem may be illustrated as follows. Apparently, when speaking of the proof in question, a certain order of things (to be proved) is meant. The problem can be, however, envisaged not only from the, so to say, "objective" point of view, i.e. that of things as existing besides our mind. It could be addressed in terms of them occurring *to us* in a certain sequence. Obviously, there is an order in anybody's life, viz. that of one's *objectives*. Now, the latter are not meant if asking about the occurrences, but the *real objects* that occur to us; objects as natural as being practically out-of-control. The problem, accordingly, reads: is there any *order* in things apart from that brought about by men? Is the occurrence of, say, a disease to be regarded as "planned" or foreseen by anybody for the sake of good that might possibly issue? Is the sequence of *natural objects* to be regarded as casual? Is the order in the world only to be found if the existence of the "human" world is meant?

Now, the notion of *via* implies the order to be present in any span of human life, no matter how arbitrarily severed. The objects that do not bear upon the Ultimate, at least indirectly, do not exist at all. So, a disconnected sequence of events might be *imagined* but is inconceivable. Moreover, the very sequence is far from being a "movie". The "producer" is far too intelligent as to produce "images" in an arbitrarily devised manner.

The advocates of modern atheism "maintain that it gives man freedom to be an end unto himself, the sole artisan and creator of his own history (*propriae suae historiae solus artifex et demiurgus*). They claim that this freedom cannot be reconciled with the affirmation of a Lord Who is author and purpose of all things (*Domini, omnium rerum auctoris et finis*), or at least that this freedom makes such an affirmation altogether superfluous. Favoring this doctrine can be the sense of power which modern technical progress generates in man". (*Gaudium et spes*, 20).

The philosophical proof of the existence of God presented in the present book is not that much concerned with its absolute value as such (this being sufficiently substantiated by Thomas himself) but with its validity when uttered nowadays, i.e. in the tongue that evolved in the direction probably completely unforeseen by Thomas himself. The circumstances are meant downright hostile to human intellect and *parrhesia*; the circumstances likely to foil any attempt to achieve the intellectual fulfillment in question. In other words: it is about words that happen to be devaluated or even forged on purpose (analogically as a genuine tender), so that the efficiency of the proof in question does not appear as salient as it might have done otherwise.

Still, we do not depart from the philosophical background in which the proof had been originally formulated. It is only stated that the complexity of the aforementioned background nowadays is impossible to be ignored and incomparably larger than that of the Middle Ages.

The proof as presented in *Summa Contra Gentiles* does not require any amendment. Neither does it require any philosophical commentary at all. Its objective validity was already stated above. It is only typical of Thomas's all texts to be pellucid as such. If, however, its validity happens to be questioned now, it is only because the tongue used. In other words: the masters of manipulation demand importunately to force it into categories proved to be efficient enough to manipulate people. In this sense the proof does require a commentary. It is about reevaluating the words used; about restoring their proper validity.

Some allegedly "outdated" views (e.g. the infinite velocity of light, the geocentric system, etc.) are being adduced with a malicious joy so as to prove that the proof in question is but a historical curiosity, and worthless in the era when a secondary school pupil knows "more" than the masters of the "Dark Ages".

The attempt seems to be clever, but cleverness is not wisdom. Wisdom is about the maximum of intellectual effort put in the understanding a given idea thoroughly, in the climate of the aforementioned parrhesia. It is about not putting up with some preconceived ideas, which, in fact, may prove to be superstitions. It can be, for instance, attempted to elucidate what the idea of natural place really means, notwithstanding its "backwardness" taken for granted. It is about not reading texts superficially.

Each one of the five ways ends with the statement: "and this everyone understands to be God" (*et hoc omnes nominant Deum*). This (*hoc*) is the philosophical counterpart of the theological (or religious) notion.

The statement "and this everyone understands to be God" deserves a closer regard. The way we name God is meant. Now, it seems to be obvious that e.g. polytheists use the name otherwise. In general, people hardly ever agree completely when naming anything whatsoever. Perhaps it is because of ignorance, or (possibly more often than not) because of the manipulation efficient nowadays to a degree. In consequence, the name of God seems to be affected by the same ambiguity as all the others. Is, then, Thomas right in assuming that *all* the people name God in the same manner?

Apparently, not all those are meant that please to say about God anything at all, but those who take pains to name God appropriately (with the openness of mind mentioned above). Consequently, the name of God is neither univocal (as e.g. that of circle) – otherwise Wittgenstein would not be able to label it as senseless – nor is it equivocal, permitted to be used at whim. The name is analogical. When speaking of analogy a kind of relation is meant. If taken in a narrower scope, two lines might appear *parallel*. When, however, viewed from a more distant point of view, the same might appear to intersect at some point, previously overlooked. It the same with ideas: they might appear as equivocal, having nothing in common when regarded in a narrow scope, but to overlap when taken more generally. All human acts, when regarded from the most general coign of vantage, happen to focus on something *ultimate*. All human acts of cognizance, provided they are not viewed in a particular aspect, concentrate on the ultimate.

Naming God or invoking His name is connected, first of all, with prayer. The name was mentioned as a religious counterpart of the philosophical one, otherwise, possibly, not-understandable. Broadly speaking, the very naming of God might be connected this way or the other with a prayer. Now, the proof in question does not need to be addressed to atheists or agnostics only. Those who believe in God might be interested, too. For it is because of the

character of language (mentioned above) that they might harbor doubts as regards the existence of God. The cause is *the tongue*, not they themselves. “We live at the mercy of a malevolent word” Joseph Conrad wrote. The human heart might adhere to God, the mind, at the same time, falling prey of an ideologization and raising doubts. The idiosyncrasy towards intellect is bound to appear, for the intellect is susceptible to ideologization and really vulnerable if untrained by philosophy. That is why the natural intellect should be perfected and disciplined.

In the modern world “... there is a growing exchange of ideas (*dum idearum communicatio augetur*), but the very words by which key concepts (*magni momenti conceptus*) are expressed take on quite different meanings in diverse ideological systems (*in distinctis ideologiis*). Finally, man painstakingly searches for a better world, without a corresponding spiritual advancement. Influenced by such a variety of complexities (*implexis condicionibus affecti*), many of our contemporaries are kept from accurately identifying permanent values (*valores perennes vere dignoscant*) and adjusting them properly to fresh discoveries. As a result, buffeted between hope and anxiety (*inter spem et angorem agitati*) and pressing one another with questions about the present course of events, they are burdened down with uneasiness (*inquietudine premuntur*). This same course of events leads men to look for answers; indeed, it forces them to do so”. (*Gaudium et spes*, 4).

Clement of Alexandria was right in observing that philosophy must be a guardian of the vineyard. Fideism, to the contrary, yields to anybody that pleases to attack faith. If human intellect had been an accessory of our life, and possibly disposable, fideism would have been right in resigning from attempts to defend faith in such a way, i.e. intellectually. But the nature of man (which is rational) is not to be disregarded, because there is no other basis of the supernatural (possibly simple) save the natural (perfected by science). In consequence, to render people destitute of this (scientific) reasoning is tantamount to abandon them to any (apparent) reasoning. The so-called rationalism is meant. Rationalism has no right to be called rational strictly speaking, and the fact is easily perceptible in Pascal. This rationalist ended up with heartrending complaints about the frailty of human existence and of human mind too. But the matter at hand is far from being grotesque; the very name of being rational should have been denied to the so-called rationalism, and the omission proved to be detrimental for human rationality. The very name of being rational must, therefore, for the sake of accuracy, be denied to those who, as testified by history, attack reason instead of fostering the unhampered spiritual human activity.

Disregarded as it well may be, the fact is that people happen to cherish doubts as to the existence of God. Disregarding a disease is a poor method to treat it. The existence in question is, in a sense, the presence of God in the world. But in philosophy, the actuality of His effects is meant only. So “the existence of God” is not (strictly speaking) the same as “God’s existence”; the latter concerns God directly (including all modes of existence in the world *chosen freely* by Him; the former concerns the necessity of the fact of His existence (known indirectly through His natural effects). To put it otherwise: the efficacy in causing things is meant, because, generally speaking, all (material) effects are to be taken into account. In the notion of effect, the dependence upon God is meant (the so called “matter”, included). The latter is to be pointed out distinctly, because, since Kant, it has been assumed that nature (“matter”) and the spiritual (“the idea” of God) have to be neatly severed. The

sphere of the “spiritual” has been devised to be irreconcilable with that of the material (no matter how vaguely understood).

The problem may be illustrated thus. It is obvious that material things cause material effects. Am I, consequently, right in assuming that my prayer is directed to a Cause efficient enough to thwart any physical action? Deliver me from my enemies, O my God; and defend me from them that rise up against me. E.g. in this way: “Deliver me from them that work iniquity, and save me from bloody men”. Douay-Rheims, Ps. 58, 2-3; and: Ps. 30, 13; Ps. 70, 4; Ps. 139, 2; Ps. 143, 11 (Vulgate). Do not get me wrong. The problem is whether it is *possible*, not whether it happens according to what I wish. Metaphysics analyses such a possibility.

If seized in these terms, the problem addresses the very presence of God in the physical world. To put it on a razor’s edge: if God had been powerless in causing all the effects, then, in the sense accepted here, the prayer would have fallen on the deaf ears. It would be addressed to the “idea” of “god”, to the “weak” deity of transcendentalism. To be precise: the idea of the weak God may happen to be cherished recklessly without considering all its destructive power. Some are not perspicacious enough to see it. Nay, they may happen to play with it, taking it superficially, whereas the practice of their life does not follow this idea. The idea might have been devised by transcendentalists as a seasoning of some hackneyed and rigid considerations. However, as the old adage says: “one man’s food another man’s poison”. The idea of the weak God can be safely “consumed” by those not keen enough on ascertaining the *precise purport of the words*. Still, the same idea may be poisonous to those more prone to theoretical thinking. People are *considerably* different in this respect, which is to say: the fact deserves to be *considered accordingly*. The very fact of some being prone to philosophizing is not a sufficient cause to condemn such a tendency, as it cannot (and should not for that matter too) be eradicated. The intellect of some happens to be really vulnerable (because of its being inquisitive), and a victim is not to be blamed for crossing the path of a criminal. It is inhuman to assume that some are predestined to be victims just because they are not callous enough. The proof presented in this book is addressed to those who take the existence of God in the terms of His being actually present in the world.

The nominal definition of God, mentioned above (“and this everyone understands to be God”) is *de facto* a definition of Providence. In the physical world, the causes are envisaged that spawn the physical effects. Now, it is about demonstrating the Ultimate Cause able to foil any particular effect.

To the contrary, the philosophical ideas of God differ significantly, and that is just because of the philosophies being, in fact, different. Nevertheless, due to its being analogical the notion in question could be extricated from any system of thought, no matter how perplexed. In other words: the same object of notion is meant notwithstanding how precisely and how accurately it happens to be seized. True, some ideas may, at least for a layman, be bereft of practical value right enough. Their falsity is not proved; it is nonetheless, perceived as a dissonance. Such like ideas when engrafted in one’s mind make him/her simply feel uncomfortable. Are, consequently, laymen entitled to reject these ideas just because them being perceived as irksome? Are they free to reject them, or, to the contrary, are philosophers entitled to disseminate *any* thoughts just because of their variety and the ideas should be tamely accepted by nonprofessionals? Is a philosopher’s activity freer than that of e.g. a

shoemaker? It can be doubted, because it is possible to live with a sore foot, whereas the ill-conceived ideas of God might result in the complete ruin of life.

There is, moreover, another feature of the rationalistic idea in question yet. The ideas are exclusive. They are those of specialists. If so, the question arises whether they deserve being treated as seriously as the ideas of other sciences are. The negative answer is given only too often, and it was hardly anything else to be expected. The idea in question results in compromising philosophy in the eyes of non-philosophers. The latter are not to be blamed as the very fact of the name of God being analogical makes it that everybody, to some extent, is a right judge in the matter at hand. Nay, the name in question seems to be most inclusive of all human words.

God is – according to the aforementioned definition – someone responsible for the existence of all things, people being “things” in philosophical sense of the word. Had it been otherwise, it would have been a “god” (a “tribal god”, or the “idea of god”).

The proper name of God (revealed in Tetragrammaton; Ex. 6. 2) means at the same time “our God” (Deut. 6. 4) and Pure Being (Ex. 4. 14). A unique transformation of the verb TO BE (*hājā(h)*) occurred in it. All things but God are *something apart* from just being. That is why they can possibly sever us from God, WHO IS absolutely speaking. Their “something” must be reflected upon, so that the Pure Being might be known. Classical philosophy opens this possibility.

People are not likely to doubt the existence of particular objects. It is not the case with the relations of things. They might be either disregarded or overlooked on purpose, because a kind of responsibility is required – difficult and demanding. Now, the philosophy in the sense accepted here demonstrates the relation of both things to each other and the relation of them all to their transcendent Cause. The dependence is not the same as being subordinate to the whim of an autocrat or despot of the Arabic Ash’arites and Ockham. God acts in a rational manner, foreseeable to some extent at least and possibly to be elucidated. If God’s “omnipotence” had been as absolute as annihilating the efficacy of nature, all sciences would be either superfluous or uncertain; for they regard nature indeed. The inference is clear if the problem of metaphysics is posed.

Paradoxically however, the dependence on the Ultimate is tantamount to being *ultimately* independent of anything else, the human (“human bondage” as Maugham puts it) included. The independence is another name of freedom, and it is because of it that metaphysics happens to be begrudged. Freedom of speech (the freedom of word) is meant, first of all; the freedom to express every word, and the word of faith, possibly, too.

When speaking of the fact of God’s existence, it can be falsely assumed (as in Wittgenstein) that “facts” are equal, just because possible to be expressed by the same “is”. For according to Brentano, every statement including a verb (the statement *de secundo adiacente*) could be transformed into a statement including the complement “to be” (the statement *de tertio adiacente*). Had it been the case, the statement: “it rains” could have been replaced by the statement: “it is raining”, which, however, is apparently at odds with the English grammar. These statements are not equivalent, because the former is more general, whereas the latter is but temporary. To put it in other words: were we about to use “is” after all, it would be necessary to determine to which extent a given statement is general. The validity of statements is meant. Now, the statement “Gods exists” is most pregnant with

meaning (and most general, in a sense), just because the Ultimate Cause acts more dynamically and spawns more, nay, all the possible, effects in the world.

6. Man's natural desire to know God

The first words of “Metaphysics” by Aristotle (the book regarded as the main branch of philosophy) speak of man's natural desire to know causes. Consequently, it is to be expected just of metaphysics that this desire finds fulfillment and human rational nature – its perfection.

However, a paradox is being faced here, which is addressed on the following pages of the book. For the cognizance of causes, and that of the First Cause especially, seems to surpass the natural intellectual capacities of man. Human mind seems to cope better with what is evidently proportionate to it. Positivists radicalized this stance, claiming that the cognizance of causes is altogether impossible to man, and the objective not that of science. Instead, we should put up with the cognizance of a sheer *sequence* of events, the sequence in question not being a law properly speaking.

Cognitive minimalism had already been ascribed by Aristotle to Simonides of Keos. Simonides was not a philosopher. To the contrary, the whole tradition of the Greek philosophy before Aristotle had been oriented towards the cognizance of causes, called first ἀρχαί, and later on αἴτια. “Metaphysics” by Aristotle is but a crowning of this tradition.

Simonides was a poet, and many deemed philosophy to be a kind of poetry afterwards, as poets competed in uttering general truths with philosophers. Thus, philosophy happened to be regarded with condescension; especially, the maximalist one. Moreover, the program of (Neo-)positivism was stamped with the mark of downright hostility towards metaphysics. The program proved to be, albeit defined in this respect not clearly enough, anti-philosophical. At the same time, the program was proclaimed to be that of science and its rights to be vindicated. Thus, the problem of science happened to be connected, at least indirectly, with the problem of man's natural desire for intellectual fulfillment and with his rational nature, too. Are we entitled to claim, if so many objections have been raised, that man is a rational being to the effect of the cognizance of causes, and the First Cause especially, being natural to him and about to be *objectively* (as in any other science) founded?

Not only positivists did attack metaphysics. Martin Heidegger assaulted the traditional definition of man: animal rationale (ζῶον λόγον ἔχον) from the point of view of the so-called fundamental ontology devised to replace (as the highest science) metaphysics. The cognizance of the objective truth was targeted.

It seems to be rather obvious that the cognizance of material objects is easier to man than that of e.g. mathematical ones. However, to be precise, it should be noticed that, according to Thomas, the cognizance of no matter what objects is that of universals that happen to exist in particulars,³ whereas the particulars themselves are rather sensed than

³ Super De Trinitate, Pars 3 q. 5 a. 3 co. 1: So there are two abstractions of the intellect. One corresponds to the union of form and matter or accident and subject. This is the abstraction of form

known, properly speaking. That is because the formal in them is only cognoscible, and the formal is shared in (or participated) by particulars. The letter might be *grasped* literally speaking, albeit not grasped intellectually.

However, due to the weakness of the human mind, metaphysics was, according to Kant, not that much difficult but rather completely inaccessible to man and proper to spirits instead (devoid of matter and having the intellect possibly not connected with body). Consequently, Kant described ironically a metaphysician as a spirit-seer (Geisterseher).

Aristotle, as has been said, was not unaware of the problem. He did not put up with quoting Simonides, but addressed the difficulty methodically, perhaps just because the minimalism was likely to appear “sober”. Moreover, his remarks have the universal value and not restricted to Antiquity. The same line of reasoning may be adopted when discussing any criticism of metaphysics at all, including those that were about to issue after his death, e.g. that of Francis Bacon.

The problem of the weakness of human intellect was metaphorically presented in the 2nd (not authentic) book of “Metaphysics”. Still, the very problem *to which extent* the cognizance of causes is accessible to man is being tackled throughout the whole text of “Metaphysics”. This is especially the case with the cognizance of the Ultimate Cause. This cause must be devoid of matter at all, to the effect that the weakness in question should be (if ever) especially noticeable here. In other words: the possible objections in this matter are most likely to bear a resemblance of truth when the cognizance of God is meant. The cognizance would have appeared superhuman – non humana possessio.

However, following the footsteps of Aristotle, Thomas points out that but a tiny amount of knowledge achieved in metaphysics (the most precious of sciences), and that concerning the First Cause especially, is incomparably more valuable than all the ordinary knowledge⁴.

from sensible matter. ... Through the first operation, however, we can abstract things that are not separate in reality; not all, it is true, but some. For, since everything is intelligible insofar as it is in act, as the Metaphysics says, we must understand the nature itself or the quiddity of a thing either inasmuch as it is a certain act (as happens in the case of forms themselves and simple substances); or through that which is its act (as we know composite substances through their forms); or through that which takes the place of act in it (as we know prime matter through its relation to form, and a vacuum through the absence of a body in place). And it is from this that each nature is given its definition. Reply to 1. When the mathematician abstracts he does not consider something otherwise than it is. Thus, he does not think that a line exists without sensible matter, but he treats of a line and its properties without considering sensible matter. So there is no disagreement between his intellect and reality, because even in reality what belongs to the nature of a line does not depend upon that which makes matter sensible, but vice versa. Consequently, it is evident that “there is no error in the one who abstracts”, as is said in the Physics. (Armand Mauer).

<http://dhspriority.org/thomas/>

⁴Summa Theologiae I-II, q. 66 a. 5 ad 3. As the Philosopher says (De Anima i, text. 1), “one knowledge is preferable to another, either because it is about a higher object, or because it is more certain.” Hence if the objects be equally good and sublime, that virtue will be greater which possesses more certain knowledge. But a virtue which is less certain about a higher and better object,

The problem is that of whether the animal in man can possibly be subjugated to the spiritual in him, and might be formulated as follows: *Utrum in divinis sit omnino imaginatio relinquenda* (Super De Trinitate, pars 3 q. 6 pr. 2. Secundo). Is, indeed, the imagination to be put aside as metaphysics demands it for the sake of human dignity? For it is the imagination in man that is shared with beasts, apparently unable to get to know God at all. The problem, consequently reads: is man any superior to beasts or rather a beast gulled by the prospect of what is inaccessible to him at all?

The imagination, as can be easily known from introspection, plays a capital role in human understanding. According to Thomas, when about to understand anything, we form an image so as to illustrate the otherwise purely spiritual, devoid of any material “clothes”.⁵

is preferable to that which is more certain about an object of inferior degree. Wherefore the Philosopher says (De Coelo ii, text. 60) that “it is a great thing to be able to know something about celestial beings, though it be based on weak and probable reasoning”; and again (De Part. Animal. i, 5) that “it is better to know a little about sublime things, than much about mean things.” Accordingly wisdom, to which knowledge about God pertains, is beyond the reach of man, especially in this life, so as to be his possession: for this “belongs to God alone” (Metaph. i, 2): and yet this little knowledge about God which we can have through wisdom is preferable to all other knowledge.

The Summa Theologiæ of St. Thomas Aquinas Second and Revised Edition, 1920; Literally translated by Fathers of the English Dominican Province

<http://www.newadvent.org/summa/>

⁵ Contra Gentiles, lib. 2 cap. 73 n. 36. [38] Now, it may be said that for the same reason we would not need a phantasm in order to consider the things whose species are retained in the possible intellect, even if there are many possible intellects in many different persons. Not only is this objection contrary to Aristotle, who says that “the soul in no wise understands without a phantasm,” it is also clearly irrelevant. For the possible intellect, like every substance, operates in a manner consonant with its nature. Now, it is by its nature the form of the body. Hence, it does indeed understand immaterial things, but it sees them in something material. An indication of this is that in teaching universal notions particular examples are employed, so that the universals may be viewed in them. Hence, the possible intellect, before possessing the intelligible species, is related in one way to the phantasms which it needs, and in another way after receiving that species; before, it needs that phantasm in order to receive from it the intelligible species, and thus the phantasm stands in relation to the possible intellect as the object moving the latter; but, after the species has been received into the possible intellect, the latter needs the phantasm as the instrument or foundation of its species, so that the possible intellect is then related to the phantasm as efficient cause. For by the intellect’s command there is formed in the imagination a phantasm corresponding to such and such an intelligible species, the latter being mirrored in this phantasm as an exemplar in the thing exemplified or in the image. Consequently, were the possible intellect always in possession of the species, it would never stand in relationship to the phantasms as recipient to object moving it. (James F. Anderson).

<https://dhspriority.org/thomas/ContraGentiles.htm>

Now, were metaphysics to resign from using the imagination, it would have been unable (as it seems) to reason in the manner proper to man.

Moreover, the very resigning from the imagination could have impoverished the contemporary man's mind in particular, as the visualization seems to play the pivotal role in learning. The contemporary culture seems to be that of image. Accordingly, the origins of human species on the earth have been assessed as connected with the occurrence of rock paintings. Thus, metaphysics would have been an unreal project in general, and noxious especially when for the contemporary psyche, which is that of a consumer of the image culture.

Still, the problem of human nature has not been solved by reducing it to imagination, and hardly anything else was to be expected as the problem seems to be far more intricate than possible to be pictured in such a manner. Consequently, the problem of cognizance as such remains unsolved too, as it remains unclear in which sense (and to which extent) human nature is rational and able to put up a firm edifice of science in general. In other words: the idea of the consumer of the image culture may well appear attractive, whereas not being adequate definition of man in the least. Man remains a riddle to him himself, which is to say: the mystery of man is not likely to be solved in depicting images.

Hegel provided a solution. A man is rational to the extent of him being socialized (in the sense of being unified), and, consequently, the *individual intellect* is but an oxymoron. The statement was not original, as already formulated in the 12th century by the Arab thinker Averroes. Hegel was apparently quite unaware of this historical bequest. The idea of collective psyche may sound more sophisticated than that of one and the same intellect shared by all men, but is thus no more original.

Masters, however, must not be ignored, for Averroes and his medieval disciples were perspicacious enough to see the problem in more general terms. The problem is that of how an individual man might attain the happiness (as imagined by Averroists), because the notorious bliss of socialization (in the sense of being unified and uniform) – as dreamt of contemporarily – is *a* happiness. The problem was put in general (philosophical) terms as follows: How is it possible to a man to attain the super-individual intellect? (*continuatio intellectus possibilis cum homine*). For albeit a man was deemed by them but a beast, a certain dynamics of his life was to be expected from attaining the “intellect” in question. To the contrary, the problem of *the* “socialization”, or (historically speaking) of humanization, is tackled but diachronically. No matter whether the ontogenesis or phylogenesis is meant, the problem happens to be imagined rather than understood, and scarcely anything was to be expected of seizing it in the terms of time. It was just the case with Hegel. History provided some particular circumstances that *happened* to contribute to *the* “socialization” in question. The “consciousness” appeared to be that of elites, and possibly of those engaged in the project to build “a better place to live in” for a society. In fact, persons are *really socialized* to the extent they contribute to the common good in a *unique* (not uniform) manner. The contribution is a gift. Social-ism is the opposite.

Historical terms are of restricted value only. Averroes himself was an Aristotelian, and even Hegel ended up his “Encyclopedia” with the extensive quotation from the 12th book of “Metaphysics” by Aristotle. Now, according to Aristotle, history is the least philosophical of all sciences. Consequently, for the sake of accuracy we should try to embark upon the solution

from the point of view of the intellect, putting aside, at least for the time being, the ontological status of the intellect.

Let us resort to a mental experiment. Let us forget for a moment that we are individuals. Nay, it seems to be only natural to man to focus on the others. The statement is advocated even by psychologists-materialists. The paradox of Neoplatonism, in turn, consists in defining the Other as that being met in the depth of our mind. Be that as it may, Aristotle in “Metaphysics” focused on the understood instead of on who understands. And, perhaps, it is just as well. Perhaps an individual is free to define himself in the mirror of eternity, the latter being accessible (even according to Averroists) to the intellect. Is not everybody to be trusted in assessing his own identity in such a way? Are we (each of us) not rational so that we are able to define anything at all, our subjectivity included? Is man not to be trusted to pass the adequate statement as regards who, or what, he *really* is? Are we not permitted to believe that a universal statement concerning human nature is thus bound to be passed?

Anyway, Aristotle himself stated that the intellectual fulfillment of *each one of us* (no matter how marginalized in actual circumstances) consists in the contemplation of God. True, the contemplation is rather *experienced* than reflected upon, first of all. The Philosopher (Aristotle) reflected on it in the perfect manner. But on the other hand, are we not (nobody excluded) “philosophers” by nature in the sense of being able to grasp the same truth at least in our own tongue; the terms of an objective value to a degree?

However, no matter how neatly seized, the truth as regards the ultimate in our lives is the *difficult* one, just because the idea put forward is far from being mundane. The fact was noted by Aristotle himself. Moreover, it would have seemed that the idea is a violation of the animal in man and thus “inhuman” in a sense. On the contrary, the animal in man is easier to come to fulfillment. Similarly, the concepts when imagined seem to be plain, whereas those unimaginable – mushy. It would be the case with mathematics too, no matter how abstract the ideas proposed appeared to be. For we can always say that it is so because of them being complex, and not because of them being of another nature than the other objects imagined. Perhaps, indeed, mathematics cannot dispense of the imagined. But not metaphysics so. True, Thomas says that the intellect forms an image so as to seize the intellectual, but he nonetheless claims that metaphysics rather *judges* the imagined than *yields* to its suggestion. Moreover, being complex does not need to be understood as being manifold. The very nature of man is complex to the effect the rational in him being, as it were, hostage to the material – the fact excessively enhanced by Neo-Platonists.

Neo-positivism, in turn, intended (or least claimed to do so) to pay a tribute to mathematics, assuming tacitly, by the same token, that the only to be understood is that which could be imagined. And, as the imagination seems to be of a less stable nature than the intellect, Stanisław Kamiński duly compared the science of Neo-Positivism to a ship never dropping an anchor and ever put adrift. To the contrary, the Aristotelian science seems to be the way to a harbor, and the harbor, in turn, may open to an interior; an (unknown) land to be explored.

The problem if envisaged from the pragmatic point of view (or from the anthropological one) is that of the human existence being hopelessly bereft of any firm foundation at all; being bereft of quietude, as the contemplation (fulfillment) is a quietude. Being socialized (in the sense of being unified), in turn, is but being a hostage to the

prejudices possibly fostered by many, not likely to be less superstitious just because of being espoused by many. Averroes had at least a glimpse into the problem, seeing the problem of the aforementioned “continuation” (of an individual with the common psyche) as being of objective importance. It is preposterous to assume that ideas no matter how queer could be safely produced to the market of thought and then judged according to how they may improve the welfare state in praxis. Some “values” (similar to those noted in the stock exchange) are proposed and none of them supposed to be regarded as objectively valid. The very fact of the so-called (modern) Western values being so similar to those material ones, and, in fact, subservient to them, decides of them being not natural but institutional instead. They are assumed to be “valid” to the extent they contribute to the “building a better world”. The material prosperity is meant there. Moreover, the very idea that a state should improve moral and spiritual condition of the citizens sounds bizarre. Parliamentary rule, in turn, is about representing *material interests* of groups and not about bringing up citizens or instilling universal values instead of those of practical importance only.

Obvious as it may appear, the statement that the state should only foster material prosperity of citizens has been introduced by an Averroist Marsilius of Padua. To the contrary, the idea of state as that implementing moral order was indissolubly connected with the ancient Greek πόλεις. The first European Constitution (The Polish Constitution of 3 May), in turn, began with the invocation of the Triune God. The idea underpinning it was that of solidarity, not of competing in producing “values” of any sort whatsoever. The idea is not that of positive law at all (which will be shown in CHAPTER II. 3). To be quite precise: objective values are not to be assaulted, but, at the same time, we (as humans and deign of happiness) have unshakable right to defend their being objective, and, consequently, not to “evolve” along with everything called values in the material sense. Being objective is tantamount to being principles, and the latter term seems to be more appropriate. The Greek ἀρχαί are meant, because *principles* are in Greek at the same time *political power*. Aristotle began “Nicomachean Ethics” with the statement that the rational in man is a hostage to a society in which it could possibly come to fulfillment. It seems to be rather obvious that such like “societies” as Nazi or Communist are rather herds instead, just because of them being totally ideologized and rejecting the rational in man.

Consequently, Averroism is neither unique nor perhaps the best interpretation of Aristotelianism. Perhaps, the very animal in man is to be subjugated to the rational in him and the Ultimate Cause to be sought for Her own sake by each one individual. Nay, the very fabric of values seems to be underpinned by the notion of the objective order including eventually the presence of the Ultimate Cause of the universe.

As metaphysics is the natural fulfilment, Étienne Gilson duly described man as animal metaphysicum, to the effect of the animal in man being totally subordinated to the intellectual in him. Sartre perhaps exaggerated man’s natural ability for auto-defining and claimed his essence being not that much difficult to grasp but rather unsettled or even of fleeting character. No doubt, man is a riddle not easy to be solved. Thus, it remains open to define oneself and possibly redefine when solving this riddle. Ultimately, each one of us is capable of redefining oneself if facing the Ultimate Cause. Nay, the cognizance of the Ultimate Cause is incomparably easier for a man than the cognizance of him himself. To understand himself man should first of all understand the ultimate object of his activity. Being complex man

should define him/herself according to what is superior although not easily perceptible at first glance. The matter seems to be plain. It is impossible, according to Aristotle, to get to know anything at all save by its act. Now, being a riddle is being in dark as to the possible extent of one's activities. These activities are to be accomplished first, and then, by a way of reflection, the cognizance comes of the principle of the actions, viz. the cognitive faculty of intellect. Consequently, as no other activity is to be comparable with that of the intellect, man should be defined according to his highest power – the intellect. That is why Aristotle named the intellect the man himself.

Still, the riddle in question is far from being solved definitely yet. Even if the intellect is the highest in man, it is difficult to assess appropriately its ultimate possibilities. Let us resort to an example. Apparently, human hand is the most perfect instrument to be found in nature. Still, if without some tools, as e.g. a needle or a pen, its perfection does not seem to be salient. Consequently, we can ask what instruments of intellect make it *appear* to be perfect. Obviously, the intellect of a scientist is commanding because of the *habit of science* in him. There are different habits, according to the diversity of human competencies. However, we can ask what the *most primitive instrument* is, i.e. the most primitive habit of intellect. Habits happen to be disregarded according to how obvious their presence may appear. It demands a special perspicacity to unearth the most primitive habit of the intellect.

According to Thomas, it is being as seized by the intellect. Being is the natural habitual knowledge of man: natural “habit”. It is the proper or natural object of the intellect.⁶

It is just metaphysics that reflects methodologically upon the primitive data of the intellect. As, however, human nature is complex (and humans are not pure intellects), the reflection implies a certain involvement of the sensual. Still, the sensual in man is rather to be judged than followed. The primitive data in question are to be clarified, i.e. clad in sings, which are to some extent connected with the sensual.

Generally speaking, any principle, no matter how particular, is likely to be overlooked and taken for granted. It is, however, especially the case with metaphysics; as the principle is out of its very nature most primitive. Still, when clarified, it becomes the proper subject matter of the highest science – *ens inquantum est ens* – being as such.

⁶ Contra Gentiles, lib. 2 cap. 83 n. 29. [31] Again, since nature is always directed to one thing, of one power there must naturally be one object, as color of sight, and sound of hearing. Hence, the intellect, being one power, has one natural object, of which it has knowledge essentially and naturally. And this object must be one under which are included all things known by the intellect; just as under color are included all colors essentially visible. Now, this is none other than being [*ens*]. Our intellect, therefore, knows being naturally, and whatever essentially belongs to a being as such; and upon this knowledge is founded the knowledge of first principles, such as the impossibility of simultaneously affirming and denying, and the like. Thus, only these principles are known naturally by our intellect, while conclusions are known through them; just as, through color, sight is cognizant of both common and accidental sensibles. (James F. Anderson).

It is proper to principle as such to render activities that issue dynamic. It is the case e.g. with morals. If bereft of principles (the moral ones included), human activity demises. Analogically, in sciences, their scopes and objectives are formed to the extent they stem from the firm and unshakable principles. On the contrary, if the principles are unstable, the whole edifice that is supposed to be raised will be shaky. Now, were we about to grasp the most universal principles, the edifice of science about to come would be firm and the dynamics of the activity of this science as great as only possible for human nature. That is what was meant by absolute freedom. The desire for the ultimate, i.e. maximum of freedom is, however, substantiated in – so to say – a concrete subject: the Cause of the subject of metaphysics. The principles happen to be assaulted, taunted, and begrudged, just because the activities that issue therefrom – so to say – “accuse” the mediocrity and inertia of ordinary consumers (consumption being the opposite to activity). One cannot remain totally indifferent towards the ultimate. Even if attacking the very possibility of attaining it, one unwillingly testifies to the special attitude towards it. Thus, it is – so to say – “desired” indirectly at least. The nature cannot be deceived; the rational in man cannot be regarded indifferently. One seeks for the cognizance of the whole (the totality of being) even when assaulting every attempt to achieve it.

The fact is to be underscored that it is the problem of natural reason. The supernatural is (if ever) about to come subsequently and first of all met personally. Thomas’s stance in this respect is that of natural reason. The Aristotelian stance – which is rather obvious – could not have been other than just natural. So, why a theologian (*the* Christian theologian) addresses the views of a pagan? A Christian has the Writ at his disposal. Why to put aside the word of God and focus on the words of a man instead?

Apparently, it was not because of the word of God being – under Thomas’s eyes – of problematic value. Still, a problem exists. There is a problem, nay; there are problems and as many as many may be obstacles severing us from the ultimate goal of our life. The problem was pointed out distinctly by Dionysius Areopagite. Things overshadow (problematize; προβάλονται) the transcendent. Material things happen to obtrude themselves upon the spiritual desire. Similarly, material signs are likely to distract our concentrating on the ultimate. And there is but one remedy: the material and the signs must be neutralized, i.e. seized in a special manner, not just as materials but *as beings* properly speaking (ens inquantum est ens). Thus, the proper place of metaphysics in human life becomes visible. Its objective is to annihilate the blight of verbiage and phenomena. To annihilate, i.e. to show *theoretically* the way to the Ultimate. For objects can not only *overshadow* It; they can *foreshadow* It also. The ambiguity was noted by Dionysius.

Thus, it is less the problem of the word (or words) than the problem how we grasp them. The word of God is understandable as such. The problem is with us who might be unable to hear it distinctly enough. Not, however, human nature is to be blamed as rather its disorder, and, consequently, a natural remedy is to be sought therein. This remedy is provided by metaphysics – the ultimate natural wisdom of man.

Still, the task of the highest science is far from being easy. Plato testified to this in the 7th Epistle. Our words happen to be defenseless and destitute in the very moment they get clad with the material signs. Aristotle was not only a sage; he was a prudent man, too. The way he composed his “Metaphysics” bears a testimony to it. The style is terse and lapidary. The

possible assaults are prudently anticipated. Aristotle was a strict judge. A sober knower of human nature was far from being condescending to its weakness. Metaphysic must be so, too. It must be strict, unsympathetic and exacting. It must be so for the sake of the purity of human nature and life. Thomas followed suit. The strict judgment as to the real historical condition of man is indispensable. Metaphysic must pass this judgment.

The attitude was unique. Thomas's metaphysics was not – properly speaking – Christian. Expected to be a buttress of Christianity it must have been – paradoxically – the opposite. It must have been “heathen”, because the nature as such cannot become supernatural. John Duns Scotus took up another way of philosophizing. His metaphysics was meant to be Christian. Instead of assuming a neutral foundation for the word of God, Scotus thought it advisable to *guarantee* the correctness of its conclusions in advance. The attempt, as the history testifies, proved to be a failure. Originally, metaphysics was meant to be Christian, but – paradoxically – Christianity became (as in Kant) “rationalized” instead. The paroxysm of this tendency came in the 20th century (Bultmann, Heidegger). Scotus mingled *de facto* theology and philosophy to the detriment of them both. Thomas separated them, and both theology and philosophy profited. Historically speaking, rationalism originated just after Thomas's philosophy had been condemned – three years after his death. A special kind of “piety” inspired the bishops that regarded Thomas's philosophy as pagan. And – paradoxically – rationalism is a special kind of piety, too, nay a religion of its own. The title of one of the most important works by Kant testifies it: “Religion within the Boundaries of Mere Reason”. The boundaries proved to be bondage and the advocates of Rationalism the proponents of the modern slavery. Nothing else was to be expected: if bereft of the ultimate outlooks of his existence man happens to be enthralled to some particulars “deities”, “idols”, “stars”, “ideas” or what-not.

Scotus was a theologian, nay, he willed to be a theologian only. Unfortunately, his bequest had been accepted in its least valuable aspect. Scotus stipulated that being should be the adequate object of the intellect. The stance was understandable as that of a theologian. God is the plenitude of being, and a trace of being as such must be found in any act of cognizance. Being adequate is tantamount to bearing upon something. According to Aristotle, *judgments* are adequate just because of their bearing upon the natural classes of being. Thus, the *problem* of natural things appears (as mentioned above). According to Aristotle, science is a relative. The relation is asymmetrical: the science bears upon the natural, but not conversely. Similarly as Plato, Scotus regarded this relation with suspicion. Once turned away from what seemed to be most precious (the being as such) a man was not likely to return from the wrong pathway. So, the correctness must have been guaranteed in advance. Being adequate in Scotus's sense means being inadequate to all the natural, i.e. being severed from the natural as such. Consequently, a kind of dualism appears. There are “reality” and “consciousness” and opposed to each other. “Realists” may fight the “idealists” and conversely, and no prospect of victory is to be expected on both sides, just because they had been separated and no *real relation* between them believed to be possible. The belief is true enough as there is no relation whatsoever between “reality” and “consciousness” if each one taken in bulk; nay, none of them is capable of existing all by itself. Both are in fact complex (the world is such, as things are simply different, and ideas in our mind manifold, too). The problem is that of analogy. There is a real relation between a science and the subject thereof. We are able to grasp

categories, albeit not things taken indiscriminately. Science consists just in taking them discriminately. We can define man or witness, but the definition of white man is – properly speaking – nonsensical. Presently if attempted, it falls prey to an equivocation. The whiteness if connected with manhood produces the idea of the “white race”, whereas witness as such is neutral. The more complex and unsettled the ideas happen to be the more unexpected and bizarre the meaning connected with them. Idealists relish in producing such like ideas calling them profound. And they are profound at least in the sense of muddy water being unfathomable. Profound as the desire for the ultimate may be, the direction towards it must be proposed as distinctly as only possible. Otherwise the danger of this desire being instrumentalized appears.

Consequently, we must accept – for the sake of possibly of human existence – a kind of relation between the ideas and the natural *things*. The relation, however, is only of restricted validity. The necessary restrictions are provided either by science or by the habitual practical knowledge, the prudence. Once the boundaries amongst ideas are blurred their relation to the natural becomes problematic. This is the *problem* that Dionysius had in mind.

It is impossible to live in a world deprived of order and there is no other way of setting it up than by means of its particular constituents, i.e. relations. A Christian accepts an order of its own. That was the case with John Duns Scotus, too. The rhythm of a Christian’s life is measured by the stability of its order. Especially, the order of Divine Relations i.e. Divine Persons is meant (2 P 1. 4). The bulk of Scotus’s main work (“*Ordinatio*”) is dedicated to the problem of the Divine Relations. Scotus focused *directly* upon the most precious. Perhaps, it was just because he believed to have found a *direct* way to the plenitude of Christian life. Perhaps, he was right in a sense. However, it proved to be detrimental for the natural reason and natural bearing of human life. Or, possibly, human nature in Scotus came to light in quite different guise. Scotus’s way was *natural* in the sense quite unexpected, and totally non-philosophical. Doctor Marialis discovered the *unique pathway* to the Participation in Trinity’s life, discovering a Nature totally *uncontaminated* by sin. Thus, he contradicted all theologians of this time. Unfortunately, the most precious feature of his thought had been disregarded and replaced by the philosophy that was in fact nothing save a theologism. Philosophy had been credited with too much. One can live in the world of ordered ideas but ideas cannot live on its own. But they were expected to do so by those who followed suit.

It is but judgment that can be – properly speaking – adequate. No ideas can be “virtual” in the sense imagined by Scotus, viz. containing in themselves a kind of dynamics or “life”. The subject matter of metaphysics is not an exception. “Adequate” is tantamount to “aright”. Now, no fundamental option whatsoever can guarantee in advance the correctness of the conclusions of the highest science. One cannot “decree” their validity. The conclusions are valid to the extent they are property extricated from principles, the latter being accessible to all, the “pagans” included. This term is not meant to be offensive. Moreover, being an atheist is by no means being dense or stupid. The ways of human life happen to be intricate and the proof in question is meant to extricate them. Metaphysic is a challenge. It is the challenge for putting up with an Ersatz of life instead of searching for its plenitude.

Human activity unfolds, in general, between principles and ends (which are conclusions of science or imperatives of prudence in morals). As was said above, the very name of principles (ἀρχαί) was elaborated by Greeks. The concrete came first, and principle

was, originally, understood literally as beginning. If taken literally, a human pathway begins from a certain point (the beginning) and leads to a certain end. The latter term is affected in Latin and Greek by the same (meaningful) equivocation as in English. Apparently, the end, when viewed in more general terms, is an objective. The problem of metaphysics and its ultimate end (the cognizance of God) consists in the principles being less perceptible than those practically connected with some material circumstances. Consequently, the objective of the highest science appears to some as problematic. Human nature itself can be a problem, but it is not because of its highest power – the intellect. The difficulty consists in transcending the material circumstances connected in praxis with every human activity. Transcending does not mean abandoning. To the contrary, human activity as such – its dynamics – is measured according to the stability of its natural principles. The principles of metaphysics are simply *most natural of all*. The lack of the firmness in question renders all human activity debilitated and casual.

The weakness of human life is a deplorable fact. Facts are not to be disregarded, which, however, does not add up to condescension. A degraded existence is to be pitied. The degradation, however, is to be challenged, and that because of humanity. Words happen to change their meaning. To be casual sounds rather innocuous. But being casual is in fact the most noxious imaginable. A murderer kills for the sake of money. The reason is, possibly, to be understood and the man to be convinced that human life is more valuable than money. It is not the case with being casual. If acting at random, a man turns a deaf ear to all possible persuasion. If bereft of the most precious objective of his life, he/she acts without discretion, without objectives to be possibly corrected. There is a great difference between losing the sight of the Ultimate because of the weakness and turning away from it out of ideological motives. Ideology is in fact nothing else than idolatry, and the effects of idolatry were (according to Thomas; Comm. Ad Rom. C. 1, Lect. 8) distinctly presented in Rom 1. 26, 27. Idols can be manifold, just as many as many are ideas bereft *on purpose* of the principle and end. They are demanded not to be judged, and to be “free” in harming people. The idols are, first of all the images. The first commandment forbade having similitude of God.⁷ Not however, an *icon* directing always *beyond*.⁸ The Person Scotus genially pointed out.

The image culture coaxes the meanest in man, taunting, at the same time, the most precious in him. Activity that issues is restless, as the image culture can spawn nothing save uneasiness. Nay, even the latter can be, as it were, appreciated. Perhaps being “versatile” is

⁷ Book of Exodus, Chapter 20 : I am the Lord thy God, who brought thee out of the land of Egypt, out of the house of bondage. [3] Thou shalt not have strange gods before me. [4] Thou shalt not make to thyself a graven thing, nor the likeness of any thing that is in heaven above, or in the earth beneath, nor of those things that are in the waters under the earth. [5] Thou shalt not adore them, nor serve them (Douay-Rheims Bible).

<http://www.drbo.org/chapter/02020.htm>

⁸ “But otherwise images, pictures, or representations, even in the house of God, and in the very sanctuary so far from being forbidden, are expressly authorized by the word of God. See Ex. 25. 15, and etc.; chap. 38. 7; Num. 21. 8, 9; 1 Chron. or Paralip. 28. 18, 19; 2 Chron. or Paralip. 3. 10”. (Ibid. commentary ad locum).

needed for the accumulation of the so-called material values. Averroes was honest enough to stipulate that the accumulation in question should be that of ideas apt to connect us with the object of happiness. The total “aggregate” of “ideas” is, however, practically unachievable, which was, in fact, admitted by Latin Averroists, subsequently. That is not because of ideas, but because of their supposed accumulation (disorder). Ideas (or rather words) cannot be accumulated, properly speaking. They can be *ordered* so that they demonstrate the pathway toward the Ultimate. To the contrary, if viewed as a possible “aggregate” (or “accumulation”) they are bound to be reduced to the status of the so-called material values.

Deprived of the Ultimate outlook of his existence, man is bound to degrade himself. According to Averroists, man is but a beast. Perhaps for some, beasts of burden are desirable for achieving “practical” objectives. The problem is, however, that for a long term no man is capable of bearing a yoke; of being enslaved and degraded. If treated instrumentally, man is not likely to work effectively. The very dynamics of human existence depends on how deep its principles are and how great its outlooks are.

Stating this we do not advocate rights of religion whatsoever. To the contrary, the right of man’s self-defining is advocated here. Religion is a possibility open to anyone. But everybody is free to discover this possibility on his/her own. The religion of Enlightenment does not grant such a possibility. The modern theologism demands importunately unrestricted obedience. The rationalized religion was devised by Kant, Hegel, Bultmann and Heidegger. The worship of humanity had been introduced by Comte (Le Grand Être - the “great being” is an idol to be worshiped). In a grotesque guise the idea of “human” eschatology appears in Marx.

Severing theology and philosophy is indispensable for human freedom. Act of faith is individual and no one can be *replaced* by anyone in passing it. For the sake of absolute human freedom, all possible outlooks of his existence are to be affirmed and *defended*. It has been asked how far one’s freedom extends. The answer that it is to the extent it does not breach the rights of the others is silly. But society is not a herd of beasts competing in the accumulation of the so-called values. Freedom if achieved by one individual enhances the freedom of all the others. The first European constitution proclaimed the idea of solidarity, not of competition. The same word “Solidarity” was spoken out some 200 years later in the same country; in Poland. Moreover, “This solidarity must be constantly increased until that day on which it will be brought to perfection (consummabitur)”. (Gaudium et spes, 32: Verbum Incarnatum et solidaritas humana).

Freedom does not consist in creating a private or a tribal Lebensraum. Freedom does not consist in silencing or shouting down the others. It does not consist in importunate images being forced upon the most susceptible and vulnerable. The so-called “films”, advertisement and “music” are meant. Freedom is not about shouting at all. It is about listening instead. And the most vulnerable and susceptible are to be heard of, first of all. Neither does science consist in accumulating ideas; it is rather about rendering them as plain as only possible, which is – parenthetically speaking – contrary to treating its conclusions as a market value. Freedom is not about ideas being boisterous, but about them being ordered. The solidarity demands listening to those possibly deprived of mental agility, e.g. those mentally handicapped, who are no less humans than all the others. Consequently, they are not to be deprived of the Ultimate outlooks of human existence. When listening to some idiotic

chattering, one can always ask in what the cognizance of God consists in minds of those unable to chatter at all. Apparently, the God of silence is met in their hearts. The solidarity demands that we learn from those disabled how to meet God in silence.

We all are to be taught in this way. Nature abhors the void. If bereft of the traditional science of God, a European turns to some kind of “meditation” or “contemplation” stemming mostly from the East. Nay, even Islam is a better receipt for happiness than the religion of Enlightenment. The Greek foundations of our civilization have been almost totally destroyed by the fundamentalism of Enlightenment. A rationalistic religion has been introduced, intolerant and harnessing the most precious in man to the preposterous chariot of progress.

It is not the problem of material progress though. The matter is far from being possibly grasped in economic terms. Let us consider the problem of advertisement. The advertisements put next to roads pose a considerable danger to human life as they deconcentrate drivers. But, are advertisements necessary for capitalism at all? Laissez-faire thrived in the second part of the 19th century. Advertisements practically did not exist then. Capitalism, as seems to be obvious, can easily dispense with advertisements at all. One can, consequently, ask to what purpose they exist. Apparently not economic reasons are taken into account. The reasons are ideological, and the ideology in question claims to have invented the best way to boost economy. It has not. It has invented the way to render human activity hackneyed. Those “brought up” in such a way may be versatile to a restricted extent but is not efficient by the same token. The casual and unpredictable cannot replace freedom.

If deprived of the Ultimate perspective of his existence humans get uneasy, restless and despaired.

7. Fernand’s van Steenberghen assessment of the validity of the kinetic proof by St. Thomas Aquinas⁹

The most important seems to determine the subject matter of the proof. Addressing Thomas’s formula: “and this everyone understands to be God” (*et hoc omnes nominant Deum*), Steenberghen questions the following:

- 1) Whether the First Mover is to be identified with the God of Christians;
- 2) Whether the pronoun “everyone” is justified in being used here;
- 3) Whether the First Mover should be identified with Creator.

Moreover, the following remarks are adduced against the Aristotelian core of the proof:

- 1) The Aristotelian statement concerning the priority of local motion is outdated. “Local motion seems to be but a marginal ... guise of motion. If taken apart from other kinds of mutation local motion is but a modification of spatial relations of one object

⁹ Le problème de l’existence de Dieu dans les écrits de S. Thomas d’Aquin, Louvain-la-Neuve, 1980.

towards another one, so that the relations do not affect [the nature of] this body” (p.173).

- 2) Steenberghen deems more apparent (“manifestior” in Thomas’s sense) what affects a given living organism, viz. the birth, growing up, nourishing, sensual perception, procreation, and, moreover, such like human activities as: the accumulation of knowledge, turning to various desired objects, conversation. Generally, the phenomenon should be taken into account that “affects deeper a material object – both that animated and unanimated”. Still, Steenberghen makes the mistake because not distinguishing between two Aristotelian categories: κίνησις ἢ μεταβολή. The latter is broader and includes beside κίνησις generation and corruption. Accordingly, two Thomasian Ways are to be distinguished: the first addressing motion (κίνησις); the second addressing generation and corruption. Steenberghen, however, would like to identify them with each other. Steenberghen’s remarks concerning various guises of motion are to be, in general, accepted, provided an attempt is made to reduce them to a common denominator. E.g. a conversation might be a salient feature of motion in the human world indeed. The problem remains however, to determine precisely the relation thereof (and of everything *subjectively more apparent*) to the elementary in nature. Steenberghen’s remarks are all the more justified as instead of the common sense tongue, some philosophical jargon happens to be used in the matter at hand. Thomas himself was a stranger to that kind of philosophizing. Still, the more illustrative a tongue is, the more likely it is to be vague. No matter how apparent, phenomena are to be reduced the elementary, and local motion is elementary, which will be shown later on. Moreover, no remark had been made by Steenberghen concerning the so-called primomota (the self-moving beings) that are excluded in Summa Contra Gentiles from the set of objects taken into account in the proof. Apparently, a living organism is likely to be regarded as independent of an exterior source of motion at first glance. In other words: albeit the phenomenon of life is more salient, it is at the same time more complex and less apt to be analyzed. Aristotle seeks for the foundation of life activity, putting aside its complexity and analyses the “nourishment”, i.e. the elementary energy absorbed by living organisms. The most apparent in living things is, at the same time, most elementary and resembling, to some extent, the unanimated. The elementary in question seems to be energy; a analogous concept applicable to the living organisms.
- 3) The principle: Everything moved is moved by something else (“omne quod moverur ab alio movertur”) if understood properly is doubtless. Steenberghen understands it as the principle of causality (which was the case in Aristotle). Steenberghen contradicts Gilson and claims the validity of the principle. According to Gilson, there was nothing in Thomism resembling even remotely the causality principle. Steenberghen states that the misunderstanding consists in not distinguishing between the *absolutely* first principle, which is not the causality principle, and the *relatively* first principle, which the causality principle – inter alia – really is. Steenberghen quotes Gilson, who said that the advocates of the existence of the causality principle in the First Way (and its validity) demonstrated in fact the opposite to what they intended. The absolute validity of the causality principle (i.e. it being valid in all beings) would entail that God

himself should be subjected to this principle, and, consequently, would a cause of himself. The conclusion was accepted by Descartes, by evidently shunned by Thomas. In response, Steenberghen underscores the fact that the causality principle is relatively first. God (as a being) is subjected to the first principle absolutely speaking (the principle of non-contradiction), but not to the relatively first principle. Now, the causality principle is under Steenberghen's eyes to be found in the First, Second and Third Thomasian Way. Moreover, they did not differ essentially, as three aspects were meant that affect the material world. Steenberghen, however, does not explain why Thomas used the word "manifestior" in his First Way. Being manifests is proper to a principle as it seems, so, if his First Way is more manifest than the others, it will be not because this or that object or aspect (as assumed by Steenberghen), but because the first principle (that of non-contradiction) being used directly here. Consequently, Gilson is perhaps right claiming that the wrong use of the first principle leads to a serious misunderstanding. Let us add, then, that the principle of non-contradiction assumes, as it seems, the following form here: the moving and the moved are – respectively – the being and non being; the latter "not existing" relatively, viz. with respect, to what actualizes it as being; to what is being in act.

- 4) According to Steenberghen, the causality principle was used by Thomas in the kinetic proof. Namely, the words: "everything which is moved, is moved by something else", an object ("something") was meant which passes from potentiality to actuality, and "aliqua" of the original were to be translated as "objects". The problem, however, deserves a special consideration and will be addressed in the following subsection of the Preface.
- 5) There is another statement of Steenberghen that deserves a closer regard. It seems to be meaningful albeit parenthetical only. Steenberghen speaks about change "no matter whether progress or regress is meant" (p. 176). Now if so, is God the cause of regress? Or, to the contrary, is He the cause of motion tending towards what is better only? According to Aristotle, the latter is the case – we prove the existence of the Supreme Good. It is, so to say, a point of "convergence" of the reasoning in question. According to both Aristotle and Thomas, the "point of convergence" of both reasoning and cosmic motion is *definite*, which is not the case in Steenberghen. Consequently, the problem must be formulated as follows: would the Good be supreme if it was but a cause of motion and not the cause of being? The answer must be negative. We demonstrate the universal cause of the good. Moreover, every proof of the existence of God states the fact that the Transcendent Good exists. True, Aristotle assumed the existence of many movers of heavenly spheres. Nevertheless, he assumes the existence of the Unique *First* Principle of motion. Being transcendent in the strong sense of χωριστός is tantamount to encompassing nature as such, prime matter included. Consequently, prime matter cannot exist independently of God. Thus, we are justified in assuming that the First Mover is Creator, as being Creator is tantamount to being absolutely transcendent cause of the Universe. The transcendence of Creator makes for the effects being disproportionate to His power, which was indeed assumed by Aristotle.

- 6) According to Steenberghen, the rejection of the hypothesis of an endless chain of causes and effects is flawless (p. 177). The conclusive remarks are passed a propos the proof as presented in *Summa Contra Gentiles* (pp. 120-121). However, Steenberghen rejects the distinction between the principles moving per se and per accidens. It seems to chime in with his notion of the object in motion as the primarily sensed, for the motion in question is an accident indeed. According to Steenberghen, the infinite chain should be rejected as senseless and impossible, similarly as the notion of the eternal world. The latter statement is shocking, as Aristotle assumed the eternity of the world as a premise of the proof. According to Thomas, the premise is not that much impossible as not universally valid. In fact, it is *theoretically possible*, and this accounts for the validity of the proof. A Christian knows that the possibility of the existence of the eternal world was actually discarded. To *abrogate* means in this context to *act in a more universal manner*. Consequently, a Christian-philosopher assumes *more general terms* of the proof; terms theoretically attainable for a Non-Christian, albeit practically difficult to grasp, as *eternal* appears to common sense to be more universal than *temporal*. According to Thomas, Aristotle de facto assumed those more general terms, and the eternity of the world deemed probable only.
- 7) Striking is the remark of Steenberghen concerning the effective principle of the proof. The core of the problem consisted in that besides *any given* chain of material causes an exterior element was to be stipulated that accounts for the order of the chain not, consequently, to be deemed a set only. The pivotal is the term “exterior”. In general, every scientific inquiry consists in broadening the scope of interest reaching for the yet inaccessible. The essence of science consists in discovering the exterior side of *the given* (either empirically or given as the state of the question). The exterior seems to be, for the time being, a dark place to be enlightened subsequently. Every progress of science advances towards the exterior, but the most universal science regards the exterior side thematically. Thus, the exterior appears to be transcendent. According to Thomas, there is a certain similarity between the supreme science (metaphysics) and the science of the most general scientific method (logic). General statements are substantiated in the real world as far as the universal in question is tantamount to the ability to produce more effects. Apparently, some “ideas” do not so: they “live” in a safe seclusion from the real world. It is metaphysics that discovers the most universal cause of things. According to Thomas, it comes as a fulfillment of the philosophy of nature, the subject matter of which are things in general.
- 8) The purport of the aforementioned remark of Steenberghen is marred by the statement that the First Way leaves us in the dark as to whether One or many ultimate principles really exist. According to Steenberghen, they might be as many as many are kinds of motion. Steenberghen wrongly assumes that the unity of the First Cause was founded by Aristotle upon his cosmology. The unity, as has been said, is founded on the analysis of the elementary kind of motion. It comes as no surprise that after the elementary kind of motion was rejected and “replaced” or rather fragmented by Steenberghen, the conclusion is marked by the same plurality. Steenberghen assumes many guises of the primitive experience. If the principle is manifold, nothing else than the plurality of ultimate Causes is to be expected in the conclusion.

According to Cajetan also, the unity of the First Cause was not demonstrated. So, the First Way was not to be regarded as an accomplished demonstration. According to Steenberghen, it is not that much the essence as rather an attribute of the First Being that was demonstrated. Even Garrigou-Lagrange claimed the same. Vanni Rovighi goes on a step further. The statement “and this everyone understands to be God” (*et hoc omnes nominant Deum*) is to be read as: “in the following chapters I *will* demonstrate that the First Mover is the true God”. Consequently, the deduction of divine attributes made up the essential part of the proof. This way of reasoning apparently contradicts Thomas himself, and the reason is plain: if the principle of demonstration is not understood adequately (i.e. in the most general terms), the conclusion cannot be peremptory. Apparently, motion was understood by the aforementioned thinkers in common-day sense, whereas the real principle of demonstration transcends the common-day tongue, and, consequently, is more effective than expected by Steenberghen and others. Should the term of “attribute” be used, the proof demonstrates, so to say, the “proper” attribute of God, which is His being transcendent. All the other attributes can be deduced therefrom, because included in it potentially.

It is only natural for us to differentiate between causes and effects. We speak e.g. about the cause of a car accident. For practical purposes the distinction seems to be indispensable. It seemed convenient to use the term of cause throughout the whole present book too, because the distinction in question is pivotal for the supreme science. The cognition of four causes in Aristotle comes as a crowning of the Greek philosophy before him. Logically speaking, we can understand “why” in four senses (*Analytica Post.*, II. c. 11). And the reason is to be found in nature as we live in natural world. It is Physics that gives the account of causes (*Phys.*, II c. 7). Moreover, a *heuresis* thereof is provided by Aristotle. *Metaphysics* draws the pattern of the four causes from the science prerequisite to the most perfect cognition (*Metaph.*, I c. 3) and a parallel *heuresis* is provided, too. This *heuresis* should be carefully followed, as *metaphysic* does not take the existence of causes for granted (without an empirical sense). The fact is of pivotal importance for possible refutation of the anti-metaphysical stance of Hume, Kant and Comte. For the sake of this refutation the very term of cause must be shown to issue from the analysis of motion. From this analysis the pattern of the four causes issues. And the starting point is neutral, as nobody (positivists included) can reject the fact of motion. Thus, for the sake of accuracy, it would have been advisable to use the term of the moving and the moved instead of the term of causes in the present book. Still, it is practically impossible to trace back the meaning of each word to the principle it originated from. Strict as it may appear, the requirement is practically infeasible. However, it should be borne in mind that in each particular case when the term of cause is used a possible reductive analysis is theoretically possible. Always can we resort to the elementary data of the experience that cannot be rejected at all. The problem of the relation of the two aforementioned terms (motion and cause) will be tackled in CHAPTER VII. 1.

There is but one world we live in; there is but one primitive datum we know; and there is but one ultimate paradigm of causes if the aforementioned analysis be accomplished carefully. Consequently, there is no difference between the Thomasian and Aristotelian

metaphysics. A metaphysics is but oxymoron, as it is by definition the most general cognizance. Similarly, there is no difference between *causa movens* of Aristotle and *causa efficiens* of Thomas (as Gilson assumes). There but one and the same cause seized more distinctly by Thomas than by Aristotle.

8. The Word of God and human words

The subject matter of the present book is *not* “The kinetic proof of the existence of God in the works of Thomas Aquinas”. We aim at demonstrating *the absolute validity* of the statement in question; its *universal value* we owe to Thomas and *the efficacy of his reasoning* seven centuries after his death. However, we are indebted to the historians of philosophy too. Fernand van Steenberghen tackled the problem of the source experience addressed in the first premise of the proof in question: “Motion is the most apparent phenomenon to be perceived in the world” (Cf “Form of the proof of the existence of God”). Now, the problem arises as to the precise meaning of the “most apparent”.

The Aristotelian statement “whoever does not understand something definite, does not understand anything at all” is, historically speaking, as stringent as often quoted. Still, the problem is whence this *perfect* understanding stems. It requires some studiousness not to overlook possible solutions of universal and modern problems in the texts studied. For, the “the source experience” sounds modern enough to say the least of it.

Fernand van Steenberghen (*Le problème de l'existence de Dieu dans les écrits de S. Thomas d'Aquin*) states that the causality principle was used in the proof by Thomas de facto, albeit not de iure and the possible objections raised against it had been definitively refuted by Garrigou-Lagrange, (*Dieu: Son existence et sa nature*, pp. 248-260). The only problem, according to Steenberghen, might have been posed by the term “moveri” (being moved), viz. the alleged *petitio principii* included therein. Still, the problem had been addressed by Steenberghen himself (p. 114-115). It was Verbeke who saw in the principle “omne quod movetur ab alio movetur” a tautology. Steenberghen’s counterargument adds up to pointing out that an object is meant distinct from the motion as such to the effect that no verbal reiteration is made. True, the remark made by Thomas about the motion of the sun was (according to Steenberghen) awkward, but nothing more. Still, it seems that Steenberghen assumes a priori too much. The remark about the sun is not that much awkward as rather typical of what is primitive in our cognizance of facts. For, we do not *originally* know what the subject of motion in question is. We do not know what the motion is to be attributed to, and that is as it must be. Aristotle’s notorious views concerning the alleged fact of the motion of the sun are not that much “unscientific” (as Steenberghen claims) as rather, so to say, pre-scientific, as they are meant to present naked facts. The fact is that *something* moves and this was indeed stated by Thomas and Aristotle. The use of English testifies the same. The statement “it is moving” is equivocal as the verb used may be either transitive (and thus denotes *the moving*; e.g.: “it is a moving sight”) or intransitive (and thus denotes *the moved*; e.g.: “this thing is not at rest”). The situation is only typical of any common day tongue, and the tongue of science is meant to remove the equivocation and to clarify the previously

indistinct. The problem was addressed by Aristotle in the first chapter of “Physics”. The objective of science consists in distinguishing *the moving* and *the moved*; a fact if grasped distinctly is *really* identical with that grasped indistinctly, and the statement is by no means a simple reiteration of what was previously seized vaguely only.

According to Aristotle, “moveri” is a complex idea to be clarified in science in general. There is no tautology, nay, there is an opposition between what is seized indistinctly first and what is grasped by the intellect in science subsequently. According to Steenberghen, “moveri” does not imply the notion of the cause of motion, because, in his opinion, the formula “omne quod movetur” is tantamount to the “omne quod mutatur” (p. 177). Thus, Steenberghen wrongly identifies motion and mutation. The reasoning follows, as it seems, this way: there is *something* and its motion is distinct therefrom, so that the reason of motion is to be accounted for as not included in the notion of “something” moved. The reasoning (if it should be so) is wrong. Tacitly, the direct cognizance of *a subject* is assumed, and the motion was but an accident thereof. There is too much assumed a priori. There is no evidence that the primarily perceived is *something*, *a subject*. (In fact, a subject is cognoscible to the extent it is actualized by at least an accident). We attribute the sensed to a subject, to be sure, but not something already known, which is de facto assumed by Steenberghen. The problem of how correctly we attribute the sensed to a subject is by no means trivial. In fact, it is the proper task of science to attribute it in the right way, i.e. to clarify the previously indistinct. The moving and the moved are originally intertwined. Should there be a tautology, a reasoning must have been adopted first. And it was, according to Thomas, Averroes who saw a reasoning in the process described in the first chapter of “Physics”. The reasoning must accept *distinctly something* about to be defined, which, however, is not the case with what is really originally perceived (according to Aristotle). Should it be otherwise, “something” in question would have been at the same time a thing and a sign – which is apparently absurd. The so-called hermeneutic circle might have been a curiosity but is really destructive for science as it leaves no other way of cognizance than that of an interpretation personal and quite arbitrary.

The problem seems to be plain as to the natural order of things and signs, but it is by no means obvious that the natural could satisfy every intellect. Perhaps, Averroists were “dissatisfied” in a special manner. Perhaps, the “source experience” we are speaking of need not be the experience of natural objects we hope to clarify in *philosophy*.

In Summa Theologica (I, 19, 5, c) Thomas addresses a *theological* problem of the divine will and cognition, and something similar to the parts and the whole present in the human language appears there (The parts of a sentence are indented to form a whole). Literally, neither whole nor parts can possibly exist in God and the terms are inadequate strictly speaking. There are no parts in God since He is absolutely simple. However, we can distinguish the end of His will (which is identical with Him) and the means leading to It (creatures). The latter are manifold and that accounts for them being somehow similar to “parts”. Generally speaking, it is the problem of the relation between the creatures and the Creator. Both are understood and willed by God, but not in the same way. Similarly in us, the end of actions is to be distinguished from what leads to it (means) and the premises from conclusions. Otherwise, there would be a vicious circle in human actions. Analogically as it seems, the same would apply to God. However, being aware of the infinite distance between the human understanding and will, and the divine one and avoiding any guise of

anthropomorphism, one might underscore the simplicity of the divine actions so much that deny their rationality. This, however, is deadly to science, for the means mentioned above are just the subject matter of sciences. If God's will had been as "absolutely" simple as the end willed undistinguishable (by reason) from what leads to the end, all knowledge would have vanished.

If God had been as "omnipotent" (unpredictable) as Ockham imagined, all that happens in the world would have had no other reason and cause than the "will" of God. If God had acted without reason and consequence, all sciences would be superfluous, and the knowledge of God – impossible.

Now, if they are not so, this is because there is *a consequence* in God's actions and the consequence is the subject matter of sciences. The secondary causes remain in a definite proportion (as means to the end do) to the First Cause and that accounts for the rational structure of the universe. God wills unconditionally the end (identical with Him) only, but the means conditionally (i.e. with respect to It) (*universa propter Seipsum operatus est Dominus*). (Super Sent., lib. 1 d. 8 q. 5 a. 3 expos.).

But a *purely theological* difficulty, and thus a very serious one appears as to what says the Revelation. The Revealed is God, the Second Divine Person. Is then, *a reason* in God's action here too, and the Word a part similar to any human word describable in relation to a totality (as it should be in science)? Is the revealed the language (the logos but not the Logos) as Islam and Gadamer have it? Thus, two approaches appeared. Some (Saint Anselm) posed the question: *Cur Deus Homo*, so as to "be always ready to convince any one who demands of them *a reason of that hope* which is in us". The others (Cassirer) yielded to mythical thinking and the philosophy of symbolic forms appeared. Now, albeit the reason of the existence of the Word in the world cannot be explored in the human manner (and the Word cannot be reduced to a "mythical form"), the very fact that it exists must be knowable after all. This accounts for the autonomy and authenticity of both science and religion. Otherwise, an awkward hybrid of them both would issue, and neither of them would be what it ought to.

Historically speaking, the problem is that of Islam and its influence broadly speaking. The beginnings of the Arab philosophy are marked by the fundamental question raised by the Mu'tazilites: is Quran a real physical being or something uncreated instead? If the former is the case, some signs exist in nature, and conversely: nature itself might be considered as consisting of signs. The problem does not exist in Christianity. Bible is the word of God to the extent it speaks of the Word of God, i.e. the Divine Person (J 5. 39; Luc 24. 27), which is treated in the first chapter of The Gospel According to John and the first chapter of the Epistle to the Hebrews. It is, according to Thomas, not possible save for God alone to make a thing a sign, which is, naturally, not tantamount to creating things out of the spoken words. Normally, signs and things are but relatively loosely connected. Prophet Ahias divided his garment into twelve parts, which was prefiguration of the division of the Kingdom of Israel (1 Kings, 11. 30), and the garment was made a real sign as tending towards The Word of God. The Word of God is real, but no ideas can produce real effects on their own. No sign can become a thing. The reasoning proposed by Averroes was tacitly assumed. Neither objects nor ideas are endowed with the power to make themselves visible. The first visible is but dimly perceived and not clad in words.

Let us resort to an example. I see some waves when standing on the sea-shore. Apparently, I perceive something, because the cognizance cannot be objectless. Still, it is preposterous to believe that I tell one wave from the other. A sailor must distinguish objects to the extent it is possible and needed. A scientist does so, too. Some ideas prove to be convenient for describing effectively the motion of water. But it is not the case with a casual passer-by. The first perceived is undistinguished and it is perhaps just what attracts our attention. Another example: for an object to be real it must correspond to the characteristics of its species. A dead animal is not an animal properly speaking, because to be an animal is tantamount to being able to act as a living thing. Now, suppose I see a leafless tree in the winter. Am I right I assuming that I see *a definite object*? The tree might be dead, and there is no possibility to ascertain as to the fact before the spring comes and normal natural actions appear (unless perchance the branches are completely dry, which, however, is not seen at first glance). The tree moves its braches when stirred by the wind, and perhaps being moved in such a way boosts the vegetation of the tree if alive. But it demands a special effort to get to know the principle of motion, because I am not able to tell the living tree from a withered one at first glance. If withered, a tree is not real and no real object consequently. Thus, only biotic matter and decaying is seen, properly speaking. Aristotle accepts a *relative* validity of the views of Eleates. Motion is *a* nonbeing. But Parmenides advanced too far. Motion is a non being relatively only, i.e. with respect to the end of motion which terminates it as its act. Thus, the assumption that motion does not exist is unjustified. Nevertheless, Parmenides noticed something really important. The fundamental opposition of being and nonbeing is made visible as soon as we analyse the fact of motion. So, the principle of non-contradiction is, as it were, substantiated in the physical world. The principle of non-contradiction is absolutely first. We can imagine a world with no motion, but cannot conceive a world without it being opposed to what it is not – non-being. The phenomenon of motion is primarily sensed, but, subsequently, analysed by the intellect. Were we deprived of senses, the world would remain in the dark, unless some other source of intellectual cognizance were accessible. Our words are, first of all, the words describing motion. That is why metaphysics (considering being as such in the language of being) happened to be accused of the vagueness of statements.

The accusation is false, because not that much being is intuited first, but rather being-in-motion perceived on the natural way of cognition. The relation of metaphysics and theology becomes visible. Some claimed that metaphysics is more general than theology because it considers being as such whereas God (the subject of theology) is *a* being. So, is theology more general, anyway? It is, because there is a notion more general than motion and applicable to God first of all. It is the word of procession. Divine Persons proceed; the First one says: “Ego ex Deo processi et veni”; (ἐξῆλθον καὶ ἦκω; exêlthon kai hékō). (Thomas, De potentia, q. 10 a. 1 s.c. 1. Sed contra. Est quod dicit filius Ioan. cap. VIII, 42). Motion however is ascribable to God metaphorically only (e.g. in the Book of Wisdom). The Word of God proceeds from eternity (Ps. 2. 7) and is what creation was mirrored in (things “processerunt a Deo”; Summa I, q. 44). To be precise: things are *defective* similitudes of the Supreme Reality. In the material world, the traces of Eternity are perceptible only. The names we use can never mirror any reality.

It is impossible to correlate signs or ideas with (concrete) things. But it is desirable to try and correlate real definitions with the classes of things instead. For, it are not concepts that denote, but real definitions. (Summa Theologiæ, I, q. 13. a. 1, c; Aristotle, Peri Hermeneias, c. 1, 16 a 13 -14.). (“words relate to things through the medium of the intellectual conception”).

Aristotle’s argumentation seems to be convincing enough from purely natural point of view. However, the point of view of the natural intellect has been *incessantly* ignored by the so-called rationalism. The *reason* of the fact must be accounted for. What might have been proved by the *pertinacity* in sticking to the exploded errors? What might have been proved by the *continuity* of this line of reasoning? The continuation (la durée de la conscience) might be assessed, after Bergson, as a mark of that type of thinking. In fact, Descartes already noticed that in case a rationalist ceases to think, his/her identity will be destroyed. (Meditationes, II, 27; “for perhaps it would even happen, if I should wholly *cease to think*, that I should at the same time altogether *cease to be*” (Meditations on First Philosophy, transl. by John Veitch, II. 6).

Reasoning, in general, is valid to the extent the continuation of premises and conclusions is visible. Albeit unfolding along the path of dialectics (so highly appreciated by Hegel) rationalist thinking shows *a* continuity. There is, at the beginnings of the eternal aporia of rationalism, a unique fact of equalling a word with a nature. For, the divine Word assumed the human nature indeed.

The fact was unique and completely non-understandable from purely naturalist point of view. Nevertheless, it has been posing *a constant challenge* to the natural intellect and the challenge had been incessantly tried to be faced. In vain were some efforts undertaken to copy this unique event in the rationalist way. They were as uninterrupted as fatally doomed to failure. The witness given by rationalism is priceless here (... quia testimonium adversarii efficacius est; Thomas, In Trin., q. 2, a. 4. ad 8). It is a natural rational evidence of that there is (and there was in history) something transcending the natural intellect. It is the natural evidence of the veracity of the Revelation (Denzinger, **2769**, 1622: Nous promettons pour aujourd’hui et pour l’avenir: [4.] que la raison ne puisse acquérir une vraie et pleine certitude des motifs de crédibilité, c’est--dire de ces motifs qui rendent la révélation divine évidemment croyable ...). The “source experience” proved to be some experience of the Ultimate Source.

CHAPTER I. METHOD

1. Scientia subalternata (the subordinate science)

It is infeasible to determine precisely the logic of scientific discovery in advance. Albeit, according to Thomas, the immediate term of a syllogism productive of scientific knowledge is but one, and this term accounts for its certitude (in other words, for its being unqualified), there are many pathways leading to the truth – even in each separate science. This holds true all the more for different sciences. For using analogy enables us to depart from one methodologically determined subject to another one. And conversely: a given statement may be proved in different sciences and the different terms of the demonstration used make for these sciences being different.¹⁰

In *Summa Contra Gentiles* Thomas normally adduces several demonstrations for each particular position. It cannot be, however, gathered therefrom anything concerning *scientific* certitude (his certitude). The commanding edifice of science raised by Thomas testifies to that he adhered to *unshakable* truth. The problem concerns the psychological certitude. The latter, however, is rather that of possible readers (us) than the author himself. The demonstrations happen to be manifold according to how many practical obstacles are hampering the understanding of the immediate demonstration. This is meant by psychological certitude. Subjectively, the immediate proof may happen to be less understandable than that “mediate” one. This is why examples are used – out of didactic reasons. Still, the Thomasian didactics points out mainly to “didactics of nature”. It is nature and truth itself that guides human intellect first of all. Examples are suggestive, and suggested by our ordinary preceptors, because nature herself is a preceptor closer to anyone than any tongue. The natural order of cognition is involved in the notion of psychological certitude. The order varies according to the variety of the starting points of understanding. Obviously, those living the 21st century have to exemplify reasoning by some terms familiar to them. This makes for a variety of *the ways leading the intellect* to truth. There is but one end (scientific certitude), but many pathways leading to it nonetheless.

The scheme of reasoning used in the kinetic proof of the existence of God as presented in PREFACE. 2, is stringent and abstract. Nevertheless, it might appear “abstract” in the pejorative sense commonly accepted nowadays; it might be perceived as dry. We envisage here a paradox: for the sake of its persuasiveness, the highest science ought to resort to examples which, by their very nature, are “less scientific” than the supreme science itself. Science, in general, consists in abstracting from the sensual, so that the relation to them is of pivotal importance. Still, it is practically impossible to determine in advance whether an example adduced is about to improve or hinder the reasoning. One may recall the problem of the so-called burden of classic physics in modern physics. The imagined does not always boost the understanding.

¹⁰ *Summa Theologiae*, I, 1, 1 ad 2. Eandem enim conclusionem demonstrat astrologus et naturalis, puta quod terra est rotunda: sed astrologus per medium mathematicum; naturalis autem per medium circa materiam consideratum.

“Sciences are differentiated according to the various means through which knowledge is obtained. For the astronomer and the physicist both may prove the same conclusion: that the earth, for instance, is round: the astronomer by means of mathematics”. (i.e. abstracting from matter), but the physicist by means of matter itself. (Literally translated by Fathers of the English Dominican Province)

According to Thomas, the problem of using examples boils down eventually to the relation between metaphysics and particular sciences. To be precise: no science as such is particular in the sense of putting up with bare facts, but may be *relatively* particular. Thus, the problem is that of the bearing of a science upon some more general type of knowledge.¹¹

It is about determining the relation of the first science (metaphysics) to particular sciences. (The problem whether we are justified in assuming that there is a science superior to those commonly so called, will be addressed in the following Chapters). The problem is that of both not violating the boundaries of sciences and not fragmenting them at the same time. In the PREFACE. 6, the problem of the imagined and visualization was already addressed. Now, the problem is whether, and to which extent, the imagined can be judged by a science. The same line of reasoning applies to any examples, those drawn from particular sciences included. Thomas says:

Scientiae quae habent ordinem ad invicem, hoc modo se habent quod una potest uti principiis alterius, sicut scientiae posteriores principiis priorum scientiarum, sive sint superiores, sive inferiores. Unde Metaphysica quae est omnibus superior, utitur his quae in aliis scientiis sunt probata.¹²

Sciences which are ordered to one another are so related that one can use the principles of another, just as posterior sciences can use the principles of prior sciences, whether they are superior or inferior: wherefore metaphysics, which is superior in dignity to all, uses truths that have been proved in other sciences (translated by Rose E. Brennan).

Metaphysics uses the data of those sciences which are easier to learn. The understanding of metaphysics, which, by its very nature, must rely on few principles, must be subjectively difficult to us – because we reason in the *sequence* of time and events. In effect, one might be accustomed to some particular type of reasoning. In the 2nd book of Metaphysics (written probably by Pasicles of Rhodes) we read:

The investigation of the truth is in one way hard, in another easy (c. 1, 999a 30-31). ... Perhaps, too, as difficulties are of two kinds, the cause of the present difficulty is not in the facts but in us. For as the eyes of bats are to the blaze of day, so is the reason in our soul to the things which are by nature most evident of all. (c.1, 993b 7-11). ... Thus some people do not listen to a speaker unless he speaks mathematically, others unless he gives instances, while others expect him to cite a poet as witness. And some want to have everything done accurately, while others are annoyed by accuracy, either because they cannot follow the connexion of thought or because they regard it as pettifoggery. For accuracy has something of

¹¹ Contra Gentiles, lib. 2 cap. 4 n. 5. [n. 4]. Et ideo interdum ex principiis philosophiae humanae, sapientia divina procedit. Nam et apud philosophos prima philosophia utitur omnium scientiarum documentis ad suum propositum ostendendum.

Accordingly, divine wisdom sometimes argues from principles of human philosophy. For among philosophers, too, the first philosophy utilizes the teachings of all the sciences in order to realize its objectives. (translated by James F. Anderson)

<https://dhspriority.org/thomas/ContraGentiles.htm>

¹² De Trinitate, pars 1 q. 2 a. 3 ad 7.

this character, so that as in trade so in argument some people think it mean. Hence one must be already trained to know how to take each sort of argument, since it is absurd to seek at the same time knowledge and the way of attaining knowledge; and it is not easy to get even one of the two. The minute accuracy of mathematics is not to be demanded in all cases, but only in the case of things which have no matter. Hence method is not that of natural science; for presumably the whole of nature has matter. Hence we must inquire first what nature is: for thus we shall also see what natural science treats of (and whether it belongs to one science or to more to investigate the causes and the principles of things). (c. 3, 995b 32 - 995a17). (trans. D. Ross).¹³

The latter words are addressed directly to Platonists, who deemed mathematical method to be unconditionally and universally valid. As can be gathered, they, as it were, stopped half-way to attaining the ultimate cognition possible, putting up with a method universal *relatively* only. Historically speaking, it was just Aristotle who advanced a step further. Metaphysics came as a fulfillment of some three centuries of scientific progress. Generally speaking, it is proper just to metaphysics that it comes ultimately after everything that is closer to the sensual cognition.

Thomas writes:

(...) quamvis scientia divina sit prima omnium scientiarum naturaliter, tamen quoad nos aliae scientiae sunt priores. Ut enim dicit Avicenna in principio suae metaphysicae, ordo huius scientiae est, ut addiscatur post scientias naturales, in quibus sunt multa determinata, quibus ista scientia utitur, ut generatio, corruptio, motus et alia huiusmodi. Similiter etiam post mathematicas. Indiget enim haec scientia ad cognitionem substantiarum separatarum cognoscere numerum et ordinem orbium caelestium, quod non est possibile sine astrologia, ad quam tota mathematica praeexigitur. (...) Nec tamen oportet quod sit circulus, quia ipsa supponit ea, quae in aliis probantur, cum ipsa aliarum principia probet, quia principia, quae accipit alia scientia, scilicet naturalis, a prima philosophia, non probant ea quae item philosophus primus accipit a naturali, sed probantur per alia principia per se nota; et similiter philosophus primus non probat principia, quae tradit naturali, per principia quae ab eo accipit, sed per alia principia per se nota. Et sic non est aliquis circulus in diffinitione. Praeterea, effectus sensibiles, ex quibus procedunt demonstrationes naturales, sunt notiores quoad nos in principio, sed cum per eos pervenerimus ad cognitionem causarum primarum, ex eis apparebit nobis propter quid illorum effectuum, ex quibus probabantur demonstratione quia. Et sic et scientia naturalis aliquid tradit scientiae divinae, et tamen per eam sua principia notificantur. Et inde est quod Boethius ultimo ponit scientiam divinam, quia est ultima quoad nos.¹⁴

Although divine science is by nature the first of all the sciences, with respect to us the other sciences come before it. For as Avicenna says ..., the position of this science is that it be learned after the natural sciences, which explain many things used by metaphysics, such as generation, corruption, motion, and the like. It should also be learned after mathematics, because to know the separate substances metaphysics has to know the number and disposition of the heavenly spheres, and this is impossible without astronomy, which presupposes the whole of mathematics. ... Nor is there necessarily a vicious circle because metaphysics presupposes conclusions proved in the other sciences while it itself proves their principles. For

¹³ <http://classics.mit.edu/Aristotle/metaphysics.html>

¹⁴ De Trinitate, 5, 1, ad 9

the principles that another science (such as natural philosophy) takes from first philosophy do not prove the points which the first philosopher takes from the natural philosopher, but they are proved through other self-evident principles. Similarly the first philosopher does not prove the principles he gives the natural philosopher by principles he receives from him, but by other self-evident principles. So there is no vicious circle in their definitions. Moreover, the sensible effects on which the demonstrations of natural science are based are more evident to us in the beginning. But when we come to know the first causes through them, these causes will reveal to us the reason for the effects, from which they were proved by a demonstration *quia*. In this way natural science also contributes something to divine science, and nevertheless it is divine science that explains its principles. That is why Boethius places divine science last, because it is the last relative to us (translated by Armand Mauer).

It might seem that the shortest pathway of metaphysical thinking departs from the self-evident principles. Nonetheless, the absolutely best way may prove to be subjectively less effective. The reason is to be taken into account pragmatically. It happens to be of advantage to resort to an example drawn from an inferior science (*scientia subalterna*), provided the distinctions be not blurred. This was stipulated in *Posterior Analytics*.

For a given statement (e.g. *terra est rotunda*), according to Thomas, as many causes can be provided as many are sciences that can prove the statement, and as many the aspects of the problem in each individual science. Moreover, a statement should be “homogenous” with the terms of a given science (*Posterior Analytics*, I, c. 9). Consequently, the statement is less or more general, depending on how, and to what degree, analogy is used. In *De Trinitate* 3, 1, c. we read:

scientia quae est de causis altissimis, scilicet metaphysica, ultimo occurrit homini ad cognoscendum; et tamen in scientiis praeambulis oportet ut supponantur quaedam quae in illa plenius innotescunt.

[The science whose subjects are the highest causes comes last in human cognition. Yet, the other sciences that come first propose some themes to be elucidated in the supreme science].

The most general science comes as the last. Nonetheless, we should be open-minded enough lest possibilities be overlooked of clarifying the particular data in some way. The possibilities might be unknown until some more general method is adopted.

2. The order and system of sciences

Any order is what it must be in relation to a principle only. The order in question will be only understandable if there is the highest science. Hence, in *De Trinitate*, pars 3 q. 6 a. 1 co. 22. Thomas says:

Unde patet quod sua consideratio est maxime intellectualis. Et exinde etiam est quod ipsa largitur principia omnibus aliis scientiis, in quantum intellectualis consideratio est principium rationalis, propter quod dicitur prima philosophia; et nihilominus ipsa addiscitur post

physicam et ceteras scientias, in quantum consideratio intellectualis est terminus rationalis, propter quod dicitur metaphysica quasi trans physicam, quia post physicam resolvendo occurrit.

[the approach of metaphysics is supremely intellectual. Hence, it imparts the principles to all other sciences; for the intellection is the principle of ratiocination. Therefore, metaphysics is called the first philosophy. Nevertheless, it comes after Physics and the other sciences, as transcending, in respect of time, their ratiocination. The etymology testifies to the same: metaphysics is, as it were, trans-physics.]

These words can be understood in two ways. Either as: (1) *quaestio iuris*: metaphysics should, for the sake of science as such, be acknowledged to be the first science; or as (2) *quaestio facti*: since the end of 13th century metaphysics (in the shape carefully elaborated by Scholasticism) had been exercising (unhidden) influence upon the rising edifice of science, and this because of its conclusions being closely intertwined with the first naturally known principles (they met best requirements of human rational nature). The progress that issued was natural as far as the self-evident principles (provided in the definite form by metaphysics) were adopted. Consequently, in the centuries to come, metaphysics was a factor rather effective than perceived and acknowledged. “Critique of Pure Reason” by Kant bears the witness thereto. The “ideas” of metaphysics were assessed to have a function both regulative and motivating the progress of science. But at the same time, Kant denied scientific status to metaphysics itself. The relation of the *given* (of phenomena) upon the supreme understanding was acknowledged. However, no *real* relation was meant, but the “transcendental” one instead. The terminus of the relation had been deprived of its proper sense. Ideas were supposed to motivate the progress of science, but normally *motivation is a movement*, and it is really difficult to grasp how “ideas” which are not real can trigger the real movement of mind towards truth.

It comes as no surprise that such a sophisticated idea of “transcendental” knowledge did not stand the test of time. Since Comte (and all the more since Neo-Positivism), metaphysics has been described as hampering the progress. Let us assume that this was the case and the statement should be taken literally. Once liberated of this irksome burden, what was called science had been thriving since then, and no progress had been as “dynamical” as that of this “modern” one. However, we should be precise in determining its nature. For it is specialization and gathering “facts” that matters in the modern paradigm. The intellect *gathers conclusions*; the imagination *gathers information*. The problem of the metabolism of information appears. Modern sciences (or rather the theorists of science) boast the *complexity* and claim *impossibility to encompass the entirety of* (the fragmented) *science*. No *universal* discoveries have been made since the Neo-Positivism’s paradigm of science prevailed. Science data gathering progressed, but the data were scarcely ever processed effectively. Discoveries might be *breaking*, but no *integration* of the phenomena into one system of thinking seemed possible. If Neo-Positivism boosted *a* (special) progress; *a discipline* of discovery, metaphysics would have secured the opposite: the freedom of discovery. Apparently, the very term of progress underwent an unexpected shift of meaning. Metaphysics really hampered the fragmentation of knowledge. It hampered amassing “facts” without a clue to order them. Versatility of mind is not the same as its strength in mastering

the given. Consequently, the very term of science assumed a considerably “modest” sense and science ceased to be maximalistic.

In De Trinitate, 5, 1 ad 9, Thomas describes the dependence of Physica upon Metaphysica. Metaphysics proves the principles of all sciences, Physics (and physics) included, and scientia naturalis is the closest propaedeutic to, and the greatest debtor of, metaphysics. On the other hand, metaphysics needs this propaedeutic to illustrate its conclusions in the way convenient for a layman, as it is in our nature to resort to the sensed, because „the sensible effects on which the demonstrations of natural science are based are more evident to us in the beginning. But when we come to know the first causes through them, these causes will reveal to us the reason for the effects, from which they were proved by a demonstration *quia*”.¹⁵

Demonstratio quia puts up with showing a certain bearing of an effect upon its cause (*habitus causati ad causam*), and this is why an effect bears a *resemblance to something*, which appears (can be categorized) later on to be *something* indeed, viz. a substance. Still, the relation of them both (the effect and cause) is at first unknown. Were we to avail us of the Latin term quoted above, we may say that there is something *habitual* in the way effects (phenomena) present themselves; they tend to be *substantiated* in things.

Positivism puts up with displaying the coincidence of phenomena without exploring their essence. It tackles the phenomenon of motion, as it were, superficially. Moreover, the renunciation of the analysis is *stipulated* as a scientific requirement or an imperative of method. Thus, a certain restriction a priori is imposed. For the essence (or the essences of both counterparts) of a phenomenon, when shown, provides an insight into *why* (propter quid) the things are given; *why* an effect is connected with what is about to appear as its cause. Now, this insight has been *forbidden* by Positivism.

Still, if the essential correlation is shown, two things formally related will appear, for everything perfect (a cause) causes its like (an effect). In other words: one specific form of them both shows up (and the distinction thereof too); the form that encompasses an existential realm of them both. For all we know, we share in common the sensual perception of motion with animals. They, however, are unable to *analyze the given*; to “split” the given into two correlatives (Thomas calls them *relativa secundum esse*; two *things* related to one another). Still, animals are not that much *forbidden* as simply uninterested in the analysis in question (unless, perchance, the personified Nature be imagined as who imposes some restrictions). Now as to humans, it is Physics that does the job of analyzing. The correlatives originate as the indistinctly given (Thomas calls them *relativa secundum esse*; the relatives simply speaking; not as yet analyzed), which subsequently prove to be *relativa secundum dici* – the moving and the moved *as dicta* (named as such). This, however, is not yet the *adequate* cognition of the correlation between the moving and the moved. True, it is more than to know motion as a whole (indistinctly), but the very fact that the *two* aforementioned correlatives are connected is to be accounted for also; i.e. the fact that they are just *two* united in *one* form. Step by step, Physics discovers broader and border forms of material world, which are in fact (as was shown above) the existential realms to be explored. Physics cannot dispose of the *given* in material circumstances (albeit surpasses the animal cognition of the *materially*

¹⁵ translated by Armand Mauer.

given). When pushing the inquiry far enough (and facing the boundaries of the material as such) a physicist must leave the realm already *explored* so as to explore *any* existential realm (without restrictions); ultimately he/she must replace Physics with a higher science that tackles the existent as such (being as being). Thus, a physicist ceases to be what he/she has been until then, and becomes a metaphysician. Physics discovers the ultimate form of the universe and the First Mover of the universe. Metaphysics grasps form in more general terms, i.e. the form of being and its Cause, the First Being.

Paradoxically, the form of the universe is the weakest possible in nature as it is founded on the last category; the category of relation. There exist but substances in the material world, and the order of them (their relations) is, so to say, secondary. The existence of substance was questioned by Positivists, which is commonly known. But the existence of relation was in fact questioned first. Consequently, science developed between the two extremes without grasping them. The gap between the substance and relation yawned. The science about nature disappeared, and science about relations (about the order) too. Some vague ideas were proposed by Naturalism and Relativism to replace them.

According to Thomas, there is but one science that considers all categories of being. Physics gives an insight into the most apparent category, that of motion; an insight fertile enough to advance relatively far. Physics (*scientia naturalis*), however, is not the supreme science; it is not the science *par excellence* as science consists in knowing the necessary as such, and the necessary correlation of things too. Consequently, it is metaphysics that proves the *relative* (conditional) necessity of the correlation between the being as such and its Author – the Pure Being. According to Thomas, being is the most formal in things (*Summa Theologiae*, I q. 8, a. 1, c). So, when seeking for the ultimate form, we depart from Physics and advance towards the science whose subject matter is most formal – being as being. God is the cause thereof. This line of reasoning was anticipated in the 12th book of Metaphysics.

When getting to know a cause (which gives formality to a phenomenon) we know already why (*propter quid*) it is so, seizing the correlation of the moving and the moved from a transcendent perspective. Still, Physics admits a margin of coincidence (*contingentia*), and, consequently, is not as much “necessary” as might have been expected of science as such. The subject matter of Physics is not a monolith, it is *structured* and the conflict amongst *particular* natures accounts for the contingency in question. In other words: unless we see the ultimate form, we have to acquiesce to the existence of what is casual in the world. Everything depends on how universal a form regarded is, and how transcendent the coin of vantage.

We might, however, expect the casual wane *sub specie aeternitatis*. Indeed, there is nothing casual and unforeseen in the knowledge and Providence of God. However, *scientia divina* in *this* form is reserved for the saved. True, metaphysics is *a scientia divina*. But it is of the necessities relatively only. It does not account for the absolute correlation of the existent. We simply cannot answer with natural means the question: “why there is something rather than nothing”. The question was put by Heidegger, and philosophy was obviously credited with too much. Metaphysics stops half way in attaining the absolute knowledge. It is science *par excellence* as its subject matter is necessary (*Anal. Post.*, I c. 6, 74b 5 – 75a 17). The correlation of its statements is as necessary as that of its deduction must be. The system of metaphysics is (as a whole related to the real world) necessary *relatively only* (i.e.

conditionally) in the sense presented by Aristoteles (Phys., II, c. 9). We cannot explain the conundrum of our being here and now in scientific terms, still, we can explain all the consequences of the fact. Bare facts are known, but science consists in reflecting upon the correlation of facts. No isolated fact is thus cognoscible; the enigma of individual existence is not naturally knowable.

Consequently, the notorious Sinn des Seins is not to be found in metaphysics. It is not to be found in *natural* knowledge. Wittgenstein regarded existence as mystical, which is, in a sense, true, as the ultimate sense thereof is unknown to natural mind. Still, there is an *aspect of the existent* that can be explored: its relation to its existential background. This aspect is really strict, and the subject matter of metaphysics must be expressed in abstract terms.

The problem of the casual (contingent; incidental) concerns, first of all, and understandably enough, human existence. The sense in question appears to be that of human destiny and existence. Still, no matter how vehemently hankered after, the cognition of the sense of being is not achievable in natural way. It is not to be found in philosophy; or, in other words: if it is to be found in scientia divina after all, the latter should be differentiated into that naturally knowable and that inaccessible to *natural* understanding. The problem of human destiny, the problem of predestination, is not to be explored in science commonly so called. A particular fact might be related to my ultimate destiny in the way I am not able to explore in science. This fact may be impossible to be formalized. Thus, it is the problem is how far formalization needed in science (formalization broadly speaking) can advance. The ultimum naturally known is to be expected of metaphysics.

There is a special kind of formalization to be found in mathematics, and probably, the most salient one. Sometimes, mathematics is regarded as formal par excellence. According to Thomas, mathematics considers the formal cause indeed, although (to be precise), not the form as the principle of existence is meant therein, for mathematical objects cannot exist on their own. The form is but accidental, possibly participated by many different beings; different species and individuals. This explains why the “mathematical world” (if it had existed) would have been a “flat” one – deprived of the structured diversity mentioned above.

The phenomena classified under mathematical forms (figures, graphs and equations) are bereft of boundaries ascribed to things naturally known, or conversely: the mathematical boundaries are incomparably more “distinct” (i.e. more readily delineable) than the natural ones. Anyway, the two types of boundaries are different. In the case of mathematics, the contingent is disposed of (as it must be in science in general), but at the expense of the *naturally* known boundaries being lost of sight. True, we ask “propter quid” even in mathematics, but the very term seems to be of another nature (equivocal or analogical) than that accepted both in Physics and the natural, common-day cognizance of the world. Not the natural end of a being is sought in mathematics, but its quantitative termini instead. Obviously, no reasonable answer can be given to the question where a life *ends* up. For we do not expect a time or place be adequate answer.

The formal envisaged by mathematics permits, to some extent at least, predict the behavior of nature. The Newtonian paradigm of science is meant. It is *a* paradigm indeed, but not universal enough. Thomas places what is called modern physics nowadays in his own paradigm of science as the so-called scientia media (De Trinitate, 5, 3 ad 6) – the science in-between Physics and mathematics. He followed Aristotle here (Phys., II, c. 2, 194a). The

“middle science” is closer, in his opinion, to mathematics than to Physics, as it draws the formal from mathematics and the material from Physics (or, possibly from the common-day experience too).

The relation of mathematics to physics was tried to be elucidated in the Aristotelian terms of sub-alternation by the 12th century’s philosopher Robert Grosseteste. Mathematics was *scientia subalternans*; physics was *scientia subalternata*. E.g. the law of (mirror) reflection was attempted to be deduced from the allegedly superior abstract mathematical relations of objects. Sophisticated as it might appear, the deduction is almost completely unclear. But Grosseteste was appreciated for opening a possibility to identify physics with *scientia naturalis*. Then, mathematics would be superior to it.

Now, the inference is vitiated after all. Mathematics is absolutely formal, but its subject matter is not; it is *a* form; viz. the accidental form of quantity. *Scientia naturalis*, to the contrary, considers forms in general, and the quantitative one must appear to be just particular. E.g. for living organism *a certain* quantity of body is dependent upon its specific form. Unspecified quantities can only exist in the novels by Jonatan Swift.

The paradigm of modern science ascribes the pivotal importance to experiment. The term *experimentum-ἐμπειρία* is Aristotelian, but underwent a significant shift of meaning. If formulated in classical terms, experiment would have been called *ars-techné*. According to Thomas, every science (and all human activities if ordered too) are differentiated according to their ends. Their subject matters coincide with the objectives about to be achieved. Now, it was Descartes who thought that the ultimate end of science consists in mastering the material world. The sentiment does not to be totally foreign to some modern theorists of science. However, had it been so, the theoretical in science would have been subordinated to the practical expected to be achieved. Although radical theorists claim that the only genuine aim of *praxis* is making room for unengaged theoretical thinking (contemplating mathematical theorems engenders peace), they are rather regarded as harmless dreamers than those seeing the facts as they are. And the deplorable fact is, indeed, that everything happens nowadays to be used and appreciated according to its practical value only.

The physical hypotheses are called predictions. The term seems to be at the right place as there is a certain distance between the time when a hypothesis is formulated and experimentally checked. However, if taken literally, the future events are not necessary in the normal sense of word; nay, they are regarded as possible at least as far as the free activity (and not determined in advance) of a scientist performing an experiment is demanded. And there is a science, according to Thomas, that envisages the future (and contingent things in a way also). A practical science it must be; it is ethics as applied to particular circumstances of life. Now, if predictions concern the future, it comes as no surprise, that Wittgenstein called science in general a *praxis*.

The problem of modalities of being (possible – necessary) is as old as hills. Does the presence devour the future like a mythical Saturn his children, and makes the possible the necessary, as the past events are obviously necessary? Or are they rather radically opposed and the flux of time is of no importance?

Science drops the non-necessary, but what is opposed to necessary can be understood twofold: either as impossible or as possible. In other words: the necessary can be opposed in two ways; either privatively or contradictorily. No positive statement is made when denying a

statement as such (denying its being justifiable). E.g. if Brown rejects the statement: “Smith is honest”, he does not need to uphold by the same token the opposite (“Smith is dishonest”), but might question the validity of the statement only (and postulate the necessity to ascertain as to Smith’s honesty if it is especially required e.g. for Smith’s about to be a judge). There is but a blank page left to be written up possibly later on. Accordingly, there are no contingencies in an absolute sense, but possibilities only. Everything is contingent to the extent it is *as yet* unknown. We could *imagine* the free will (of e.g. an experimenter) to move in the free space (of what is contingent) and no universal law, absolutely speaking exist. We can *imagine*, on the other hand, everything (the activity of an experimenter included) to unfold according to pre-determined laws. Neither of the images is adequate. Science advances in the definite direction, as the point of convergence of cosmic motion (the motion of free will included) is determined, absolutely speaking. However, this point of convergence (its essence) is directly inaccessible to the intellect, and the progress of science consists in mere contrasting the known with some realm unknown as yet. The progress is “necessary”, but not in the sense Hegel imagined. It is *conditionally* necessary: for a given point of departure only one determined way leads best to the truth. But we are unable to set down the point of departure on our own. The world we live in might be, for all we can justly suppose, other than it is really. However, for a given world (then: conditionally) a unique way leads to the truth, and the statements of science must be necessary in this sense. This is, properly speaking, “propter quid” considered in science.

But on the other hand, “propter quid” as tackled in mathematics is formal in a restricted sense. The formal is but the quantitative aspect of the world and the poorest one. Mathematical unity is that of number. The existential unity is that of being and what subsists on its own. There is something that attracts our attention in the perception of physical world. The integrity (the unity) of things and their order make them beautiful. This experience is shared by artists and ordinary people. The motion of our intellect *terminates* in contemplating diverse forms, but spatial termini are rather imagined than understood.

It has been said that: “To those who do not know mathematics it is difficult to get across a real feeling as to the beauty, the deepest beauty, of nature ... If you want to learn about nature, to appreciate nature, it is necessary to understand the language that she speaks in”.

But if so, beauty, as commonly perceived by non-mathematicians is but bogus and the noxious one as it decoys people into admiring the worthless. Consequently, the sculptures of e.g. Michelangelo and paintings of e.g. El Greco should have been *destroyed for the sake* of the perspective of the true perception of beauty. They would have been harmful as they coddled people out of the true sentiment of beauty, and led them astray from *the real and only possible* perception thereof. The conclusion seems to be as necessary as uncanny. But it must be gathered if beauty had to be sought in mathematics only.

The term “propter quid” apparently describes an order. There is an order to be found in the structure of human body and Kant regards human body as the most beautiful thing in nature. The lungs are for the sake of the heart, the latter for the sake of brain; the order seems to be apparent to an unprejudiced eye. These relations cannot be reduced to time and space, albeit they might appear in them both (on such a background).

If the relation of the mathematical theories to nature were to be reduced to predictions only (seized in temporal terms), science would in fact return to its ancient beginnings when the temporal accounted for the origin of things. The relation, no doubt, exists, but it is for the sake of science to express it in most universal terms possible, viz. those of the modality of being. But, as there is no particular science that regards being as being, it is metaphysics only that explores the real relation of mathematical objects to crude nature. Thus, it guarantees the unhampered development of science. It is only metaphysics that explores the modalities of being. The “will be” or “might be” expresses normally a probability of something about to happen, as the time *happens to* separate the known from the unknown. Now, the known and the unknown might be explored in terms of excluding what is unknown definitely; for the difference being and non-being, and contrasting the “is” of a scientific statement with its absolute opposite, i.e. uttering necessary statements is the predominant feature of metaphysics.

Some objectives are impossible to achieve and freedom (the unhampered activity) requires rejecting them. The impossible is contrary to the necessary (to what has happened). But the possible is contrary to it also. The real progress consists in advancing the possible step by step removing the impossible, which cannot be done save by a science which considers these modalities of being. The “boundaries” of nature are meant. In the natural becoming, an “is” must be contrasted to what is-not-yet; to its end.

Now, the “propter quid” of nature is foreign to mathematics. We can describe some phenomena in mathematics because (“propter quod”) they have a common denominator, viz. are endowed with dimensions. Still, “propter quid” is taken in mathematics analogically, nay, in restricted sense only, which can lead to a reductionism. The validity of the mathematical method can be absolutized and a kind of monism is bound to appear, as there were no definite boundaries amongst what can be added and subtracted so arbitrarily. The fact issues from the elimination of formal cause understood as the principle of being. The formal cause as the principle of *measuring* has been introduced instead. This reductionism is of no advantage for mathematics itself as it might have appeared at first glance. For performing mathematics is the life activity of man, and the reductionism in question disposes of any kind of more complex formalities to be found in nature, especially, the one to be found in life. The reductionism in question renders the universe flat and without any room left for spontaneous activities, those scientific included. In brief, it is *demotivating* and noxious for *any human activity at all*.

Mathematicism has been imputed to Plato. True, Plato estimated mathematics. But on the other hand, the cause of causes, was the final cause (Phedo, 99AB), and Aristotle follows suit (Metaphysica, I, c. 2 982b ss.). According to Scholastics, final cause is dropped in mathematics. Appreciative of mathematics as he might well be, Plato sought for the “better” in the universe. Reductionism was foreign to him after all.

As known, it was Kant who consequently disposed of the notion of cause. He introduced the so-called transcendental categories instead, by means of which the mind schematized the phenomena. Kant does not explain *why* mathematics and physics tackle *the same* phenomena, unless the answer might be that they were more formally seized in mathematics than in physics. In other words: no formality was to be found in nature; no formal principle to be abstracted from material things. The latter are simply bereft of any formality and, consequently, (as in Hegel) of being too.

The Kantian statement proved to be disastrous for ethics. The notorious formalism of the German Thinker adds up to denying any *natural foundation* of morals. In other words: the *circumstances* of moral act, carefully analyzed (albeit being intricate) by Scholastics, were simply of no account for Kant. Natural things were peremptorily contingent and no natural law was to be found there. A gap had appeared between the natural and the human, and the poisonous fruits thereof must be consummated nowadays. There is no such a gap in Aristotle, there no chasm yawning despair and incertitude of human existence. Human being in the *most perfect in nature*, because its *form* is the most perfect one. (Phys., VII). Transcendent as it might be, the human understanding and desire does not conflict with nature. There is no possibility save to put up with the fact, because nature cannot be tyrannized and is bound to vindicate its rights if tried to.

The reductionism may lead to subsuming the facts (contingentia) under a formal principle. “The facts in logical space are the world.” (Wittgenstein, *Tractatus logico-philosophicus*, 1. 13). The latter, historically speaking, is sheer possibility of existence, which was “in potentia proxima ad existendum” – a realm close to actual existence. It was Scotus who created the intentional being out of mathematical stuff: the being as formal as simple. For being simple was supposed to guarantee the truth. Simplex [est] sigillum veri (*Tractatus*, 5.4541) (Similarly, Husserl in “Ideen I”).

Despite being widely accepted, the very term of the objective being (Descartes’ *realitas objectiva*) is far from being clear. Scotus, who invented it, was precise here: it was the secondary object of the Divine Intellect (*obiectum secundarium intellectus Dei*). Its being cognizable to man was *postulated* out of theological grounds. Were it otherwise; were the object of the intellect *a* being, and not being as such, no prove of the existence of God would have been possible. The reasoning would have been poised in air. Still, once the premises accepted, a conclusion quite different to that expected *might* follow. This *possibility* was substantiated in history. The objective being (the totality of essences) was deemed bogus and a noxious one, for it posed a threat to *absolute* human liberty; the liberty to create one’s own possibilities. God “must not exist” as He would have occupied the room reserved for human freedom (Sartre). Moreover, the essential being reveals, at best, the existence of the spiritual, without speaking (as Aristotle does in his *Metaphysics* XII) of the *living* God. In fact, Husserl, following Scotus, stipulates *epoché* (“bracketing” of the given ideas, and that of God in particular) so as to seize – so to say – the “purely essential being”. Bracketing the natural conviction as to the existence of God (and any other one for that matter too) was demanded as radically as if it threatened the autonomy of philosophical thinking.

“Philosophy and the Crisis of European Humanity” by Husserl ends up with the words: “for the spirit alone is immortal”. As known, all nouns are written in German with capital letters. So, it remains unclear whether “Sprit” or “sprit” is meant. Be that as it may, the spirituality is meant in fact, and the subject matter of its interest is entity (*mawdzud* of the Arab medieval philosophy). That “form of being”, no matter whether obtained as an outcome of transcendental deduction of categories (Kant) or eidetic reduction (Husserl) is the formal stipulated in science. Its worth for real science is, however, problematic. It might well entertain the teste for the “spirituality” mentioned above, but its relation to facts must remain unsettled, which was unwillingly admitted by Husserl himself.

Once a mathematicism is accepted, a specter of the objective entity is bound to appear. Albeit arguments used by Scotus were theological (and *should* be read in the theological context of his *Ordinatio*) the same arguments might prove the contrary to what was originally intended. The reduction (no matter whether that Kantian or Husserlian) is in fact the same as enlightenment postulated by Avicenna. The only difference consists in that the source of light was originally (by Avicenna) deemed to subsist in-between man and the Absolute Being. Averroes was precise here. A higher state of understanding (*intellectus adeptus* of Latin Averroists) was needed. The general illumination is the leitmotiv of the Arab medial philosophy, and of the philosophy of Enlightenment, too. Man was expected to be “spiritualized”, but “spirit” became human (humanized) at the same time; for its relation to the Absolute Being was blurred.

In consequence, the “human spirit” commenced to haunt the human history, and was given the name of “consciousness” – contrasted with nature. A kind of anthropotheism showed up in Comte’s *Le Grand Être* – the deified humanity, and a messianism of science was a consequence. Kant abhorred and taunted the idea of the plurality of “spirits”; for the only one was that to be found in the innermost of the human “consciousness”.

According to Kant, the cosmos was a transcendental idea wrongly supposed to be real before his philosophical revolution. Kant was right in observing that the progress of science advanced towards the formal. The problem is that, to his mind, the formal was to be found but in “consciousness” and no real fundament was to be sought in nature. Consequently, a child that learnt anything (about to “define” him/her as human) had to renounce all the attempts to find the definite relation to nature on its own; personally. But the primitive relation is in fact to the opposite (to what is met personally); is-not-mine but possibly perfective of what I am to be in the future. Husserl rightly underscored the “pair-ness” of the primitive relations that constitute the “we”, people hope to find in adult life. But the formal must be neatly and responsibly structured.

Kant, as known, did not answer the question what makes the subject face the object of cognition. The answer is important, as the progress of science does not seem to advance at random. An answer was attempted by Fichte. Still, it was so uncanny that commonly assessed as impossible. No rational proof of the existence of God was provided – to the contrary, a primitive “intuition” was supposed to legitimize the progress of science. The objects of the “intuition” varied according to the inventiveness of those who tried to interpret Kantianism. For Freud, it was libido; for Bergson – *élan vital*; for Nietzsche – the “will” which made for the dynamics of nature. No rational proof of the intuited was provided. The intuited was as evasive as incomprehensible to human mind. In fact, it was tried to replace reasoning with imagination or sheer phantasy. The regress to mythological thinking was the consequence. But Greek philosophy (and science) was born the moment mythological thinking was dropped. Without the order of the rational in man human life would have been bereft of sense and value.

The importance of the bequest of classical philosophy consists in that Aristotle explains: 1) the origin of mathematical objects; 2) why they apply to natural phenomena; 3) what is the formal needed in science; 4) the methodology of science in general terms, possibly to be used in solving some particular problems.

CHAPTER II.

MODERN EUROPEAN SCIENCE AND ARISTOTELIANISM

1. The mathematical paradigm of science versus Aristotelianism and philosophy

The beginnings of modern physics have been traditionally connected with the name of Galileo – the father of the modern paradigm of science. His “fundamental intuition” (its importance) as to the role of mathematics in the cognition of the material world was widely appreciated by all, philosophers ex professo (e.g. Edmund Husserl) included. Consequently, it has just been since Galileo that science has assumed a specific character and the name of “exact” has been associated with it. Nay, exact science seems nowadays to be but a pleonasm, as science, was *demande*d to be exact.

Still, it had not been until the invention of calculi that the “exact image” of the material world was proposed. Mathematical analysis proved to be an efficient means to gain an insight into the structure of the material world. Two thinkers – Leibniz and Newton – claimed the right of inventors thereof. They were, at same time, significant philosophers and regarded themselves as such. Moreover, both practiced theology, or at least, what they deemed to be it. No matter how “exact” the natural science was originally devised to be, it was by no means as exact as stipulated at the end of the 19th century, when Scientism disqualified in advance all attempts to trespass the narrow boundaries of the science called exact in the aforementioned way.

The differential calculus proved to be an efficient means to understand the physical world around us. The “physical” is, however, the same as *the moving* so that the problem addressed in the present book overlaps with that in some way. A certain analysis of motion was provided. The question is whether, and to which extent, it can be reconciled with the analysis of motion proposed by Aristotle. As commonly deemed, it *could not* be reconciled, or: *must not* be so. Still, if the difference between them both could be made out, a common denominator of them both would appear, as things do not differ save after subsumed under the same genus.

We could (as it seems) be justified in assuming after Thomas that motion is the most obvious phenomenon of the material world. The problem is which analysis of motion should be regarded as fundamental, appropriate and adequate. In other words: after assuming that motion is not only obvious, but the most apparent datum of perception at all, it remains to set down its elementary constituents. The nature of fact is meant, as facts are elements of the perceived nature. Exact as it might well be, the modern paradigm leaves us in the dark as to the *nature* of the primitive data and its analysis is minimalistic (is devised to be such). To the contrary, the Aristotelian paradigm reaches further and the primitive data are pregnant with meaning. The statement: “Sensu constat aliqua in hoc mundo moveri” (Motion is the apparent to be perceived in the world) is the starting point of the kinetic proof of the existence of God. The “apparent” in question serves as a basis for far-reaching conclusions. Obviously, such like conclusions cannot be drawn from the premises assumed by modern physics.

The value of mathematical analysis for the cognizance of the material worlds seems to be obvious. The primary occurrence of the simplest nature, motion, can be described accordingly by the equation of its speed: $v = dx/dt$. The speed is given here by the first derivative of the displacement versus time. Still, in the 17th century, scientists discorded as to what was the *true measure* of motion – whether it was momentum or energy. The velocity is included in the equation of them both, but the notion of mass is too. Is the latter to be identified with what is in every day tongue called “body” – something that undergoes motion; something that moves (is moved)? It cannot come as a surprise that the question had been dropped presently. The question regards the *nature* of the elementary data of perception, and – as the analysis was devised as minimalistic – no question of “natures” should bother minimalists at all.

Instead, the notion of point mass appears in the Newtonian mechanics. No one claimed that it was a *natural* object; obviously, the object is ideal and phenomenal one and without a real counterpart in the physical world. The elementary of mathematical analysis is not a physical element.

That the differentiation might have any sense at all, we must assume that its counterpart – the integration might be possible too. We can easily integrate some “reasonably” simple (changing this way) motion only. Thus, some “complex” description of motion appears as an *outcome*, as the equation of the velocity of motion “integrates” what was – for analytical reasons – previously dissected into infinitesimal parts. But on the other hand, the derivative dx/dt is nothing else than the effect of an *abstraction* (the “dissection” is this) of a complex occurrence given perceptually at the *outset* of inquiry. Unless we could envisage some complex occurrences of our life first and treat them analytically next, we could not arrive at a systematically “complexed” (i.e. structured) framework at the end. The very idea seems to be clear enough: so as to know any object at all, we have to return to *the same* object equipped with the armor of scientific language. This holds true as to the motion between the points A and B. That we might obtain an adequate image, we should integrate over all dx that constitute the section AB. However, it is by no means clear that the “image” integrated in such a way is appropriate in the sense of being *the adequate representation of the real object*.

Naturally, one can object that both differential and integral calculi are but part of one and the same theory, and the statement is true enough. But the point is that the very nature of this theory is far from being just a theory. It is *the* theory of cognition: something more than

what is applicable to exact sciences only. There is some (more general) idea in the background: and it is precisely the idea of the possible return to the real world. Taken as a mathematical construct, the calculi appear to envisage ideal, i.e. phenomenal objects only. For the only reason why we are able to, e.g. weight the earth is an approximation. We can “integrate” but some “reasonable” objects, and the question as to the nature and extent of this “reasonableness” remains open. The object might be some ideal earth, with roughly the same shape and mass as the real one. However, once the idea of the possibly perfect integration conceived, the path we can advance along is shown distinctly enough. So, the idea of this return (reflection) seems to be no less important than the famous Galilean “intuition”.

Still, what can guarantee that our return to *the same* real things as perceived primarily is really possible? In other words: can we verify our conceptions; relate them to things? The very idea thereof was challenged by some (Popper). Truth as such was inaccessible, science consisted in negation, conflict and rejecting rather than in accepting; or to use the Hobbesian expression: it was the “the war of all against all” (“the clash of ideas” is that). Ideas deemed scientific were expected to act this way and pave the way for some *approximation* of truth only. What is, then, the warrant for the *absolute* validity of any mathematical theory (e.g. of calculi) in the cognizance of the real world?

The answer adds up to showing how the return to the real world is possible after making some elaborate constructions that – no doubt – stem from our mind. Or yet in another way: how to bridge the gap between a past perception that spurs our mind to building some theory, and a future experiment meant to check its validity? Do we proceed at random, or are we – perhaps not quite consciously – guided by some effective principle? If so, then science is extra-temporal, it transcends any narrow boundaries of “here and now”; it has the absolute character, because the same principle that enables us to “transcend” a two-days-spell, is valid for transcending any time-spell whatsoever. The implications are far from being a trifle: human mind could – literally – surpass (transcend) the span of the spatial-temporal.

What is at stake is the very future of science. For if no certain future is to be appointed for verifying a given theory, no future for it (for science) can be expected at all.

According to Aristotle, the primitive data of our perception are but feeble ones. They are not, however, totally evanescent, for nature itself vouches for their stability. In humans, the intellectual nature is the warrant. Leaves driven by the wind are not likely to rest on any object for any reasonable time. Ideas “conceived” by animals are not totally “evanescent”, but are efficient enough to spur them to pursuing a desirable object perceived at some distance (in time or space). Ideas of man are this and more: they spur our desire to knowledge as such; for the knowledge for the sake of knowledge, as Aristotle puts it in the beginning of *Metaphysics*. They rest and accumulate, proportionally to our being able to see the outer world more and more systematically.

We depart, accordingly, from a veiled, feeble notion of something to be understood, and possibly arrive at some valuable outcome. However feeble, this primitive datum of our experience accounts for our being specifically different to animals. These data are nonetheless so likely to be overlooked that some people do not understand the essential difference in question.

People, however, are (for the most part) not willing to adopt (at least for pragmatic reasons) such an attitude. The intelligible “sparkle” of truth is likely to be taken for granted,

disregarded as to its real nature, though not perhaps to its perceived effects. Some are likely to ignore the source, being complacent with having water from it. A spring might be scarcely perceptible, whereas a brook is not. Some even less imaginative might have doubted the existence of the source at all. Someday, people would awaken to the fact that the despised source of their strength is no more effective, just because it has been so consequently disregarded.

For centuries, philosophers have tried to account for the validity and source of science. Still, philosophical ideas are not so readily checkable. Experimenting with them might be even dangerous to (all) man. Moreover, philosophers themselves word their ideas in much less “scientific” manner than could be expected of the science pretending to be the guiding one. It seemed that we had to put up with the fact and quote them literally instead of ordering them. For the order of ideas implies an assessment.

Plato was heralded by some philosophers both as a prophet of mathematical physics and an adversary of the Aristotelian teleology and the science of causes. But the terminus αἴτιον (cause) occurs in Plato 104 times, and the final cause is causa causarum (the cause of causes) in both *Phaedo* by Plato and *Metaphysics* by Aristotle. There is in Plato something more than just a propaedeutic to modern science. There is in Aristotle something more than just an obstacle to modernity. It is by no means obvious that the preceding must be imperfect; that ancient philosophy was but a prerequisite for modern science. It might have been so in some respect, but its essence might have been lost sight of also.

Once started from a preconceived idea, some philosophers (or historians of philosophy) feel free to advance in any direction whatsoever, disregarding facts (like those historical facts mentioned above). Creativity is decisively credited with more value than responsibility. Consequently, and understandably enough, the very philosophy fell prey of reviles, mockery and even downright hostility. Is then philosophy a science at all? Is it worthwhile to pursue such evanescent ideas, and to build castles in the air?

Aristotle asked, pretty much the same question, still, worded it otherwise. It is extremely difficult – according to him – to arrive at any certitude here, but this minimum is much worthier than a great deal of less important information that one is furnished with by the other sciences. We would like, however, to apply these considerations to the matter at hand. In his *Introduction to the Commentary to Aristotle’s Metaphysics* Thomas wrote that metaphysics is important for this reason too that it imparts the certitude to the other sciences. In other words: the circle of its reasoning (the aforementioned return) is definitely closed: one arrives at the definitive description of the outer world, provided he is equipped with the means of generalizing perceptual data given first in some rough form (the source experience as proposed in *Physics*).

The first step having been made (the source experience preserved), we can advance further; we can “differentiate” – διαίρεσις is the term Aristotle adopts – with the prospect of the definitive outcome. The second derivative of x versus time gives, apparently, the equation of acceleration: $d^2x/dt^2 = a$. And the process of generalization is going on. Provided, e.g., that the gradient of intensity of gravitational field of the earth is small enough, one can calculate the speed of a falling body. However, a still further generalization is possible. One can assume the vector $\mathbf{a}$ to be changing in a circular way (circuiting e.g. counterclockwise) – being a so-called phasor. For some time, since Copernicus, it had been assumed that the

planets' orbits are circular. But the circus is a border case of ellipse, the segment being another one. One can imagine, e.g. two tunnels being dug through the center of the earth (at approximately right angle) and the moon moving like a pendulum through both of them separately at the same time. This is not physically possible, but it is tantamount to saying that the moon runs around the earth along elliptical orbit, the latter being neither more nor less than a sum of two linear oscillations. Consequently, oscillations are yet more general kind of motion. And the equation of oscillation is the most general one. Something that oscillates is called the harmonic oscillator. According to Richard Feynman it is the most general object to be found in nature.

The harmonic oscillator ... has close analogs in many other fields; although we start with a mechanical example of a weight on a spring, or a pendulum with a small swing, or certain other mechanical devices, we are really studying a certain differential equation. This equation appears again and again in physics and in other sciences, and in fact it is a part of so many phenomena that its close study is well worth our while. Some of the phenomena involving this equation are the oscillations of a mass on a spring; the oscillations of charge flowing back and forth in an electrical circuit; the vibrations of a tuning fork which is generating sound waves; the analogous vibrations of the electrons in an atom, which generate light waves; the equations for the operation of a servosystem, such as a thermostat trying to adjust a temperature; complicated interactions in chemical reactions; the growth of a colony of bacteria in interaction with the food supply and the poisons the bacteria produce; foxes eating rabbits eating grass, and so on; all these phenomena follow equations which are very similar to one another, and this is the reason why we study the mechanical oscillator in such detail. The equations are called linear differential equations with constant coefficients. A linear differential equation with constant coefficients is a differential equation consisting of a sum of several terms, each term being a derivative of the dependent variable with respect to the independent variable, and multiplied by some constant. Thus is called a linear differential equation of order with constant coefficients (each is constant).¹⁶

The very progress of science testifies the above-said. The progress of physics consisted in the growing generalization of ideas. Some branches of physics, which seemed for some time isolated, appeared to be but aspects of the same (more general) theory. Thus, e.g. electromagnetism and optics had been integrated into one consistent theory; the first step had been made by Maxwell, the further by Einstein. Similarly: the nature of heat had been successfully explained by using the corpuscular model of particles. The very beginning of modern physics bears the testimony to this: Newton assumed that there is no other kind of matter of "celestial" and "sublunary" bodies; thus laying the foundation for the theory of gravitation which observes both in the case of stars and small objects.

¹⁶ The Feynman Lectures on Physics Vol. I Ch. 21: The Harmonic Oscillator.

The unquestionable advantage of differential calculus is treating motion analytically. The phenomenon of motion had presented a reasonable difficulty to all thinkers since Parmenides. Now, the problem would appear easy to solve if the displacement was laid off on the axis OX, and the time on the axis OY. Aristotle himself, discussing the stance of Eleatians (who denied the reality of motion) points out that if it pleased to divide the section AB into infinitesimal elements, the same ought to be done to the time. Should it be otherwise, the paradoxes of Zeno are bound to appear. Zeno assumed that time consisted of discrete elements (moments), whereas the displacement is made up of infinitesimal magnitudes. Assuming that it is but time that allows counting motion, the lack of parallelism between time and displacement renders the phenomenon of motion not-understandable. Aristotle says that if the section AB is to be divided infinitesimally, the time to pass it ought to be also. Nowadays, we know that the Aristotelian argumentation was that *ex impossibili*: assuming (the impossible) premise that no discrete particles of mass exist, the monotonic distribution of motion in time will issue. We know that matter is quantized, which Aristotle did not. Still, his line of reasoning is universal enough and can be adopted to any paradox of motion, not only that of Zeno.

However, we could *imagine* that the section AB is a set of points, and the time required to pass it is a set of moments. We could *imagine* that the section AB could be constructed out of points, and the term of construction is at the proper place here as it was Kant who stipulated the construction of objects in the mind. A sharp-edged pencil leaves a trace of a “point” on a sheet of paper, and, if pushed along it, it will leave the trace of a “set of points”. Time can be imagined analogically. Time was conceived by some thinkers in the Middle Ages accordingly: *nunc fluens facit tempus*: the flowing moment constitutes time. Were it so, both time and space would consist of “atoms”, viz. “points” understood in such a manner. Still, the notion of atom (if taken in this way) is foreign to that of the Ancients – Leucippus and Democritus. The notion had been elaborated by the mediaeval Arab Ash’arites and accepted by Ockham. The world consisted of the points of time and space connected by the arbitrary act of the “will” of Allah. Thus, to determine the nature of an object seemed to be the same as to “integrate” it out of those primitive elements. The act of the “construction” in question appears to be “supernatural”, or “transcendental” in the Kantian sense. The object was constructed by schematizing imagination. Transcendental knowledge was the supernatural one at least in the sense of being radically opposed to the natural, amorphous matter. The elementary remained “untouched” by experience.

It is obvious that an experiment is meant to provide an “integral” image of the object. Accordingly, in handbooks of mathematics the analysis is normally illustrated with the examples drawn from the physical description of nature. The problem is, however, to which extent the image in question is “integral”. The experiment, in fact, cannot be expected to give but a phenomenal form of the object. Consequently, the fact must have been acquiesced to for the sake of exactness. Science is exact in this sense. Still, practically speaking, it is impossible to observe such like restrictions, i.e. being aware of the phenomenal character of the objects. In practice, one would like to know what the objects *really are*. The desire, if followed and no other means than those deemed exact being at disposal, is bound to lead to conclusions that are no more exact. Some imaginary objects would appear. The conclusions will cease to be exact at the same time when the strict boundaries of their validity are

trespassed. In fact, they are “supernatural” in the sense mentioned above. An experimenter happens to be credited with a “supernatural power”. That is apparent in August Comte, who created a soteriology of Scientism. The same holds true as to the Kantian idea of Eternal Peace and the Marxian idea of Classless Society. Man would become, as Hegel put it, an absolute master of nature. Human abode would be *above* nature. Mathematics credited with the power to identify objects would *turn toward* the “supernatural” (imaginary) instead of *returning* to real objects.

The idea of both mathematical analysis and experiment is pivotal for science. Still, it is no less important to determine *the nature* of the procedure used here. Otherwise such a determination would be proposed by futurologists like Comte and those mentioned above. Aristotle points out the simple elements of the perceived natural world, and, subsequently, proposes an “image” of the outer world to be obtained from them. In fact, the “image” (the integrated) is rather a complete system of science.

The procedure of constructing objects could be imagined similar to drawing them on a sheet of paper. In this case, the objects are imaginary and kind of simplification similar to that normally used on pictures occurs. The same simplification is unavoidable even in photography, and the exactness of the image is proportional to how good instruments are used to make the photographs. The question, consequently, adds up to finding the “pixels” of *natural* perception. Perhaps they are dissimilar to those in photography, for the picture is exact to the extent the instrument mirrors the object to be pictured. The picture, in turn, is meant to be a veracious reflection of the object. What however, can guarantee the veracity? Nothing but an approximation can be expected. A kind of symmetry (between an object and what reflects it) is supposed. The symmetry is tactility assumed for granted. But what if the symmetry is bogus? Is the fact impossible? Everything depends on whether “pixels” are tiny enough to mirror the “reality”. Perhaps they are not. A certain *direction* of human mind towards the objects about to be analyzed is to be elucidated. No privileged direction, however, is to be found in a reflection of the object. Unless such a direction be provided by nature, no *adequate* understanding of the outer world would be possible. Aristotle says that nature itself is directed to, and tends to perfect, human understanding. This is because everything is known according to its being actual. The “atom”, “particle” or “pixel” or whatever the name of the elementary perception is a “vector magnitude”. The potency is *directed* towards the act. The moved is moved by the moving and the actuality of phenomenon, if known, makes for human understanding to be founded in natural world; i.e. *directed* towards it.

Consequently, Aristotle “differentiates” pointing out to the elementary “atoms” of human understanding; to a binary structure of the moving and the moved. The “complete image” of the outer world issues when the facts are integrated into the structure of science. We can resort to the metaphor of integration adduced above. Still, the complete system of statements is obtained by deduction, not just by juxtaposing simple elements and accumulating the effects of observation.

Science in general differs from the common day cognition in that it describes neatly the elements about to be integrated subsequently. Still, the elements might have not been determined as to their nature, i.e. the way they correspond to nature. They are not determined peremptorily save by the science that is the most general one. Unless such a peremptory

determination is being made, some surrogates; “syntheses” (as mentioned above) are bound to appear.

The complex system of scientific ideas might differ, but need not be radically opposed to that of everyday cognizance. Still, such an opposition has to appear if some unjust extrapolation of the ideas deemed exact is made. We know “intuitively” that a living dog is not just a sum of “particles” (joined by some “supernatural” power) but an object whose identity is determined naturally. The dog is not a set of elements amassed by a “supernatural” Élan Vital or the “will” of Allah. Neither does any experimenter participate of that mysterious “supernatural” power. Science is not a soothsaying, and we expect that after abstracting the simple elements of the perceived facts, we will *return to the same objects* we departed from, but equipped with the armor of scientific ideas. The expectation is seemingly modest.

Science cannot be radically opposed to everyday cognition, or if you like, any man is a “scientist” to extent at least he/she is personally responsible for his/her actions. Scientists are responsible for the statements before acknowledged authorities. Science happens to be such an authority for an individual. But the individual responsibility cannot be shifted upon any authority in the end.

Joseph Conrad depicted the situation. His perhaps most famous novel begins with a quotation from Novalis: “It certain that my conviction gains infinitely when shared by the others”. The problem of responsibility is analyzed. Normally, we can at least imagine that our actions are perceived by some justly acknowledged authorities. Now Conrad pictured a man who was bereft of them. A young sailor happened to be completely destitute of such like incentives that foster morally good actions, and totally exposed to those that foster the opposite. He was willing to face death, but could not put up with being destitute of any acknowledgement at all (being bereft of dignity in dying). Normally, our actions are mirrored in the minds of others. We can disregard some of them (despise or reject the validity of some judgments), but the problem is whether we could, possibly, dispose of them all. And the problem was analyzed by Conrad. The young sailor had in fact, to rely on nobody but himself. There were *no men* save those who instigated him to leave the sinking ship and passengers on board; *no others between him and his death*. The youth struggled to save his honor and failed, because the death that was about to come would have been deprived of any glamour. He would have died in the panic-stricken mob; vile and repugnant just because of unwilling to face the unavoidable. The situation was *imagined* by Joseph Conrad and it might be always objected that a writer’s imagination is not similar to the real scenario of events thought of by God only (His providence is not a “screenplay”). We sympathize with the characters of a novel, but God is more than sympathetic; He is merciful. Nevertheless, Conrad might have observed and related something real. The situation realized in the history of Poland. Some were labelled as the foes of the nation and had to face death bereft of truth and honor. The truth was denied to them. Time *might* do justice, but need not so. These anonymous heroes were in the dark as to how their life-stance would be defined in the future (justified it in the eyes of the others).

Our actions should be addressed to *the same people* we live amongst. We should recognize their needs; our actions must be adequate, proportionate to what we face. Our actions should be directed appropriately. And it is eventually impossible to rely on the commonly acknowledged opinion, as Conrad proved. Ethics is meant to provide such a

direction; the direction of absolute value, not dependent on any circumstances. A novelist can imagine such circumstances as if hatched in hell; but in fact, human devices happen to be no less fiendish in cheating men out of justice.

Science provides a relatively valid direction of acting. And the validity is restricted to a narrow realm of scientific actions. Still, the same actions, if regarded from another point of view, could be morally unjust, just because science (if it remains what it really is) cannot pretend to account for absolute validity of human actions. Science provides, by definition, an insight into some *restricted* area of the world.

It is rather difficult to say whether ethics can be an absolutely valid criterion. Perhaps not. Not just because moral values are relative, but because they are faced in the circumstances that happen to be (as in Conrad) quite unpredictable. Perhaps a special science (intellectus) is needed that would provide their stability.

Accordingly, everything depends on how general the aspect under which the actions are to be judged is assumed. If the progress of science consists in generalizing ideas, the merit shall be ascribed to Aristotle, who integrated ethics and scientia naturalis into one scheme. So, the paradigm proposed by Aristotle seems to be more universal and in accordance with the tendency of the development of modern science. It seems that such a paradigm of science is indispensable, as experimenting with various ideas of humanity proved to be morally despicable and abhorrent. The problem is whether *any* existential impasse (as e.g. that depicted by Conrad) can be solved by *this* science – the naturalistic ethics. Or perhaps another intellectus (in addition) is needed after all. For scientia naturalis is of restricted value too. It applies to the world we live in, but it is by means certain that the consequences of our decisions concern *that* context of human existence only.

To sum up: that our actions might be what they should be, the return to same objects as those originally perceived is necessary. The Aristotelian Physics and ethics is not at odds with the everyday cognition just because both are more general than particular sciences, for which being exact is tantamount to being of a restricted value. The problem is, however, whether Physics is general enough; for it is by no means certain that we should return *literally* to the earth we stem from. Perhaps the ultimate destiny of man is the return to the Source of his being, and the intellectus mentioned above is to be sought just there. The Aristotelian Physics provides us with the complete system of ideas able to elucidate the world we live in. The Aristotelian metaphysics provides us with the complete notion of the being in general. Its subject matter, however, is being as being, and not, properly speaking, the being absolutely speaking. The highest science is of restricted value in a sense, too. It is not ontology. It is the science concerning all the *consequences* of anything being actual at all. It is by no means certain that anything must exist at all. Metaphysics does not accept such a premise. Neither does it concern all possible worlds. It considers all the consequences of the fact of the world being actual. Its being actual, consequently, imposes *a* restriction on the validity of the statements of metaphysics. The subject matter of metaphysics is not the possible being (Avicenna's mawdžud), but being that is consequent upon the fact that the world exists at all. Metaphysics is not science of everything. A certain aspect of its validity is to be accepted, for all its being of such universal value.

There is, to be sure, a difference between Ethics and Physics in Aristotle, and the important one. Nonbeing is the common day occurrence of our life. We experience privations

in many forms and they constitute part of our daily life. Still, there is an important difference between e.g. the fact that we must die, and the fact that an innocent person is killed. Destruction of the material things is something that Physics regards as natural. Destruction of human life is not, if human life should be understood as human. Evil (or destruction) is natural in the physical world. Evil and destruction is not natural in the *human* world i.e. that founded upon the principle of beatitude being possibly achieved by anybody. Ethics does not put up with the fact of the destruction of the perspectives of human life; with losing the maximum of life.

Thus, it comes as no surprise that Aristotle was heralded as an enemy of “the open” society. The “openness” is tantamount to “indefinite” here. If – instead of the return – a linear progress of human activity were desired, a closed system of ideas would threaten it. Similarly, no definite notion of humanity was accepted by the advocates of the open society and any idea of humanity was demanded to be “tested” experimentally. A criterion, if any, would be (as in Marxism) the future man, not the real one. Some theorists of science (Bohm) postulated just the linear progress of science.

Two things are to be taken into consideration. First, whether the usefulness is the unique category regulating human relations. Secondly, whether the paradigm of science proposed by Scientism satisfies the criterion.

The frailty of the category of usefulness is striking first of all in ethics. If the only measure of good had been usefulness, man would be treated as an instrument too. There is no definite gauge able to fathom his/her satisfaction already obtained (the means) and to compare it to the obtainable (desirable) one (the end). The present time of a consumer differs from his/her future but incidentally. Thus, human life becomes incidental also.

This feature is all the more striking in science. The lack of an objective gauge is a real problem in it. A scientist if deprived of the notion of science for the sake of science, is instrumentalized, and the reply to the second question appears. Utilitarianism is demotivating and (paradoxically) *deprived of usefulness*. Kant understood this problem in his own way. That is why he *postulated* an absolute horizon of human aspirations included in the so-called transcendental ideas. Still, nobody succeeded in applying that lofty ideal to real, particular men. The problem is that we cannot *return* to the real world in this way. True, the world we live in is real enough, and no idealist is in a position to change the fact. He is, nonetheless, able to disrespect the consequences, and that must lead to the actual degradation of life itself. The problem is *how actively* we live in the world, and the problem adds up to how arbitrarily the nature of objects has been set down. Because if set down *quite* arbitrarily, the objects reduce the extent of human freedom. The only means leading to fulfilment of human freedom is the individual understanding of the world.

The world of Scientism resembles a gigantic dissecting room filled with elements but with no space left for more complex forms of being and life. The Scientist image of the world is that of elements, which structures about to be “integrated” arbitrarily. Indeed, Leibniz thought that the only real things in the world are the so-called monades, whereas material objects were “aggregates”. If he denied human liberty also, it was the natural consequence of the stance.

No broken pot can become unbroken, but possibly glued together only. No animal divided into “particles” can regain its integrity. Particles might well be envisaged statistically

(for some purposes at least). But no statistically living cat is possible. The notorious Schrodinger's cat is an outcome of reductionist view of the world.

Similarly, no "psychical integration" as promised in psychoanalysis is possible (that type of analysis makes it impossible to integrate human life peremptorily). Life consists in expending energy according to one's own abilities and intellection. Even machines expend the energy in their own way, according to how they are built. The fact cannot be denied by anybody. The same holds true as to animals and humans too. Even if Descartes had been right in assuming that animals were but "machines", nonetheless they would be *quaint* machines, and the way they expend their vital energy makes for the difference. Human existence is integrated by rational desires only. Analyzing emotions is morbid and destructive. The elementary cognition is directed towards the outer world. Its order, if understood, makes for the human life to be ordered too.

Physiological activities must remain outside the field of consciousness. They are disturbed when we turn our attention toward them. Thus, psychoanalysis, in directing the mind of the patient upon himself, may aggravate his state of unbalance. Instead of indulging in self-analysis, it is better to escape from oneself through an effort that does not scatter the mind. When our activity is set toward a precise end, our mental and organic functions become completely harmonized. The unification of the desires, the application of the mind to a single purpose, produce a sort of inner peace. Man integrates himself by meditation, just as by action. But he should not be content with contemplating the beauty of the ocean, of the mountains, and of the clouds, the masterpieces of the artists and the poets, the majestic constructions of philosophical thought, the mathematical formulas which express natural laws. He must also be the soul which strives to attain a moral ideal, searches for light in the darkness of this world, marches forward along the mystic way, and renounces itself in order to apprehend the invisible substratum of the universe. The unification of the activities of consciousness leads to greater harmony of organic and mental functions.¹⁷

No animal can act save guided by a previous sensual perception. No man can act save guided by a previous intellection. Humans happen to be hampered in expending their vital energy, and the obstacles are to be removed. The "integration" comes (if ever) as an accessory to this unhampered human activity. The obstacles are first of all the arrogance of those who fancy seeing the complex fact of human life in simple terms, which are in fact reductionist and simplistic ones. But everyone's spiritual disorder is an obstacle, too; for the intellectual desire might be thwarted by each one's sensuality as well.

It seems to be obvious that the cognition must not be objectless. An object is perceived first and, subsequently, understood i.e. seen neatly to the extent the method adopted allows. The problem of Scientism consists in that it remains unclear *what objects* are known. For objects were defined operationally only. The most disastrous consequences of the stance are clearly perceptible in what concerns directly human life (in ethics).

As has been said, the acclaimed usefulness of the method pretending to be one and only acceptable in science is far from being apparent. The usefulness is gauged, most obviously, by if, and how, one can survive in the material world, which is potentially

¹⁷ Alexis Carrel, *Man, the Unknown*, IV, 8. 1935, 1939 by HARPER & BROTHERS.

dangerous to him/her. No doubt, an individual bereft of blessings of civilization could hardly survive in wilderness. Let us imagine somebody lost in the wood. The way out is searched; the individual concentrates the attention on objects surrounding him. The objects can pose a threat to his/her life. The judgment – its being adequate – is necessary to survive. The adequate judgment is meant which determines the identity of a given object. Is the situation completely different to that of a civilized man? Rather not, as the judgment is passed in a society by *many individuals* and cannot be less adequate just because of them being many. The responsibility might be shared (either equally or unequally), but the core of it remains the same. On the other hand, the disastrous effects of inappropriate judgments concern many. The principle is the same: it is the rational in man that accounts for the existence of mankind being possible. It is the rational of both an individual and many individuals that is responsible for the appropriate judgments concerning the identity of natural objects. The rational in man is connected with the ability to form abstract notions, i.e. those applicable to many (possibly dangerous) circumstances. Ockham's theory of supposition is naïve: a common notion does not stand for several individuals, it is *directed to them*, and the very being *directed* is, in fact, tantamount to being *abstract*. First and foremost, the abstract notion of human beatitude is confronted with particular circumstances (e.g. with human misery). Some general objectives are formulated by ethics. Their validity is checked in confrontation with the circumstances they are devised to cope with. A similar decision is passed by an individual guided by practical wisdom – prudence.

In both forming abstract notions and applying them to particular circumstances an individual might be to some extent replaced by a society. For it is either science that concerns abstract notions (and especially ethics) or positive law (concerning some particular circumstances) that that does the job. This feature of positive law is salient in England, where the common law legal system originated. A common law system is the system of jurisprudence that is based on the doctrine of judicial precedent, i.e. the cognizance of particulars. Kant overestimated the role of statutory laws and fell prey to the illusion that society is ontologically prior to individuals that constitute it. In consequence, the rational in individuals was about to be regarded either as bogus or subordinated to the collective consciousness. The fact was lost sight of that the society is what it is only because of its being formed by the individuals and only those guided by reason. Otherwise what was expected to be a society is but a herd or mob. If the individuals act irrationally, the structure of the society is shaky at best; wretched – at worst. The adequacy of the judgment of no matter how many individuals is essential to survive them all.

Not only can the material world endanger the life. The individuals gathered without being guided by rational stimuli are incomparably more dangerous than the purely material environment. Being universally accepted by many is by no means tantamount to being universally valid; nay, the more individuals, the more nagging the threat of their acting in a casual, irrational manner. The justice cannot be decreed. The idea of the institutionalized justice proved in history to be nothing save the Bed of Procrustes, and people forced to conform. The justice is *prerequisite* for positive law. Horace says: Laws without morals are useless (*Quid leges sine moribus vanae proficiunt?*). It is impossible to rear a structure without taking realistically into account its components – humans acting freely and rationally. Force may be used sometimes but only to those who refuse to act in this way. The neat idea of

human nature is indispensable thereto. No experimenting with various ideas of humanity is morally acceptable. The problem of human activity cannot be tackled pragmatically.

Edmund Husserl discussing the problem of Scientism pointed out to the problem of alienation. Artifacts can turn against men like the mythical Golem. The problem was envisaged from the point of view of the German Geisteswissenschaft. Still, the problem seems to be not so much that of the ghost, or spirit – no matter how understood. Apparently, the damage inflicted upon the natural environment is real enough and affects human body (not a “ghost”). A nuclear plant (a spectacular achievement of modern technology) is likely to threaten human bodily existence. True, human body is animated in a special way, but it is preposterous to believe that it is animated by a Spirit. The Spirit, according to Kant, dictates laws to nature. Nowadays, it seems to be only too obvious that laws of nature cannot be breached; nature will claim her own rights sooner or later. The problem, thus, was not only that of Scientism but rather of the human existence identified with collective consciousness and opposed radically to nature. Nature must vindicate her laws and cannot be expected to be lenient just because it suited some. What is then the notorious sustainable growth? Can nature sustain anything forced upon her at all? Idealists tyrannized nature and the consequences are seen nowadays. Man was expected to become the absolute master of nature, but proved – paradoxically – to be enthralled to his/her emotions. Traditionally, man’s beatitude was rather deemed dependent upon his mastering himself. The sentence “imperare sibi maximum imperium est” (the greatest power is to have power over oneself) is pagan, but in accordance with what Bible says in the following: In patientia vestra possidebitis animas vestras (Luc 21. 19) (ἐν τῇ ὑπομονῇ ὑμῶν κτήσασθε τὰς ψυχὰς ὑμῶν). “In your patience you shall possess your souls”. To possess one’s soul is to live perfectly and to have dominion over all movements of the mind. To dominate this way is to possess your very self; to be yourself.¹⁸

The tradition of German Geisteswissenschaft is especially connected with the idea of time. The notion is pivotal for the present book, since time was described by Aristotle as the measure of motion and Physics was expected to discover the Absolute Measure of cosmic motion. No idealist is likely to acquiesce in the notion of time proposed by exact sciences. It was more than just a magnitude possibly laid off on the axis OX. Still, the idealist’s stance is not as romantic as it might appear at first glance. Aristotle distinguished between the mathematical abstract and the natural measure of motion. Now, the latter is not the same as human Zeitlichkeit (temporality), but the natural property of things being possibly cognizable

¹⁸ S. Thomae Catena aurea, In Lucam, c. 21. 4.

Gregorius Moraliū. Qui autem patientiam in adversis tenet, inde contra adversa omnia fortis efficitur: unde sibi et seipsum vincendo dominatur; unde sequitur in patientia vestra possidebitis animas vestras. Quid enim est animas possidere nisi *perfecte in omnibus vivere, cunctisque mentis motibus* quasi ex arce virtutis *dominari*?

Per patientiam igitur animas nostras possidemus; quia dum nobismetipsis dominari discimus, *hoc ipsum incipimus possidere quod sumus*. Idcirco autem possessio animae in virtute patientiae ponitur, quia radix omnium custosque virtutum patientia est. Patientia vero est aliena mala aequanimiter perpeti; contra eum quoque qui mala irrogat nullo dolore morderi.

by man. The problem is that mathematics envisages time unilaterally and another gauge can possibly adopted to no matter how complex beings.

The duration of man, just as his size, varies according to the unit used for its measurement The nature of time varies according to the objects considered by our mind. The time that we observe in nature has no separate existence. It is only a mode of being of concrete objects. We ourselves create mathematical time. It is a mental construct, an abstraction indispensable to the building up of science. We conveniently compare it to a straight line, each successive instant being represented by a point. Since Galileo's day this abstraction has been substituted for the concrete data resulting from the direct observation of things. The philosophers of the Middle Ages considered time as an agent concretizing abstractions. Such a conception resembled more closely that of Minkowski than that of Galileo. To them, as to Minkowski, to Einstein, and to modern physicists, time, in nature, appeared as completely inseparable from space. In reducing objects to their primary qualities – that is, to what can be measured and is susceptible of mathematical treatment – Galileo deprived them of their secondary qualities, and of duration. This arbitrary simplification made possible the development of physics. At the same time, it led to an unwarrantably schematic conception of the world, especially of the biological world.¹⁹

So, the problem is how we “count” motion originally. Is the perception of motion *always* to be understood in terms of mathematics? Are those terms the most general ones? What is the basic perception of the flux of time? The basis in Aristotle is firm enough to support the demonstration of the existence of the First Source of motion. Modern science (if extrapolated in the form of a reductionism) has to put up with the idea if the Great Mathematician, at best. Does nature evolve towards a mathematical ideatum? Does experimenting advance along the same pathway of confronting the natural with the ideatum?

According to Aristotle, whoever does not understand one determined thing understands nothing. The statement, if reworded by a Scientist would read: someone who does not understand mathematics does not understand nature. Now, the problem is whether the unity Aristotle speaks of is that of a mathematical abstract. Is the unity of, say, a dog a unity of points, lines or particles? The statement advocated by Scientism was not invented by Galileo. He might well believe that an “intuition”, and the breaking one, was gained. But the statement had already been passed by Avicenna, and no “intuition” but a reasoning was provided. The problem is that the reasoning *was flawed*. The unity of a dog is its integrity, and nature aims at conserving the unity as well as the being. Any mathematical magnitude can be added or subtracted. But a dog's unity if “added” or “subtracted” results in the dog's not-being. The real dogs (as we see them) are not “aggregates”. Advocates of the theory of evolution claim that such an “addition” or “subtraction” occurred in the history of the earth. But there is no evidence save *indirect* one, and paleontological data need not be interpreted in the way proposed by evolutionists. The unity of a real being disappears along with its being. The “historical” being is not the real one.

The problem of temporality was not discovered by Heidegger; Greeks advanced the problem of time with no less acuteness of mind. The term in question is here: *καίρως*. Perhaps

¹⁹ Alexis Carrel, *Man, the Unknown*, V, 1.

a great deal of people connects – rightly enough – this notion with the “due time”. But, originally, it was not the due time only, but the *due measure* in general. According to Aristotle, mathematics abstracts from *the* time of nature. Some important distinction is to be made. The abstract mathematical number of motion is to be distinguished from that real one.

Phys. IV, c. 12, 220b 8:

ὁ δὲ χρόνος ἀριθμός ἐστιν οὐχ ὥς ἀριθμοῦμεν
ἀλλ' ὁ ἀριθμούμενος, οὗτος δὲ συμβαίνει πρότερον καὶ ὕστε-
ρον ἀεὶ ἕτερος· τὰ γὰρ νῦν ἕτερα.

Thomas comments:

In Physic., lib. 4 l. 19 n. 4. Sed numerus numeratus est alius diversorum: centum enim equi sunt aliud quid a centum hominibus. Et quia tempus est numerus prioris et posterioris in motu; quia alia sunt quae in motu se habent prius et posterius secundum id quod praeteriit de motu, et alia secundum id quod sequitur; propter hoc est aliud tempus praeteritum, et aliud futurum.

But number numbered varies with different things. For 100 horses are not the same as 100 men. Since time is the number of “before’s and “after” in motion; and since the “before” and “after” of a past motion are not the same as those of that which follow, therefore the past time and the future time are other and other.²⁰

These words apparently bear upon what Alexis Carrel wrote about the nature of time. According to Thomas, “the number that is numbered is different for different things”. A hundred of horses are different to a hundred of man. This might seem to be but a truism if the material aspect of things is taken into account. It is not. The aspect Thomas mentions is no less formal than that envisaged by mathematics. Still, the formality in question is of a different nature. Now, as time is the number of “before” and “after” in motion, the past (time) differs (essentially) from the future time according to the formal difference of what passes and issues. The measure is not homogenous.

Alexis Carrel addressed the problem of the biological perception and biological aspect of time. According to him, the “inner”, “vital” time is not linear. It seems to be rather obvious that the biological time as such must be strictly connected with that perceived by a biological object. Now, what is remembered differs essentially from what is anticipated. In other words: “before” and “after” changes along with the objects remembered and anticipated. “Before” and “after” is not only different for different substrata (if the latter were to be taken as “matter” only). It is different according to the diversity of natures and their formal aspect. Not only does the material vary. E.g. the equine action cannot be anticipated in the manner human should be. Taking into account the aforementioned “number” (100) of them both, the plain

²⁰ Commentaria in octo libros Physicorum; COMMENTARY ON ARISTOTLE’S PHYSICS by Thomas Aquinas; Books III-VIII translated by Pierre H. Conway, O.P. College of St. Mary of the Springs, Columbus, Ohio 1958-1962.

fact must be noted that a herd (of one hundred horses) acts rationally just because the animal instinct is a kind of reason, albeit a poor one. The contrary is the case with humans. The rational action is rather to be expected of an individual if guided by prudence (practical intellect), whereas the multitude of individuals (say, a hundred) acts rather as irrationally as a mob could only do. Human “instinct” is not just a poor reason; if following instincts only, individuals *reject* the reason itself.

Aristotle says that should the “now” (moment) have a positive meaning at all, it must be rather associated with the notion of substance in which “before” and “after” vary according to the mode of being of the substance itself. For “before” is always connected with the modality of being necessary, whereas “after” – with the modality of being possible. Figuratively speaking, a substance is situated just between “before” and “after” understood in such a way. The linear notion of time cannot explain the problem of the modality of being. Leibniz, who espoused the idea of the linear notion of time, thought the difference to be but of epistemological nature. Taking into account the real (physical) time, a definite substance (a horse or man) is meant, whereas in the linear paradigm of time every part of it (a point of time, moment) remains indiscriminate toward the others. Moments just must be so. Still, human notion of time is not only biological, as human life is far from being only animal one. The modality of the human existence; its being spanned between the remembered and anticipated is strictly connected with the reason and free will. No such discrimination is to be found in Leibniz. Human rationally rendered human free will null and void, and the liberty – bogus. Determinism prevailed.

No doubt, human existence unfolds between “before” and “after”. It can be safely assumed that the former is necessary, whereas the latter – possible. Or conversely: the necessity as envisaged in science might be defined in the terms of what has passed. The subject matter of science is, according to Aristotle, τὸ τι ἦν εἶναι – something that has revealed its nature by having just passed. Science, prudence, intellect must serve as a basis for what is expected to come in the future. Consequently, the necessary is to be understood as contrary to what is anticipated. Now, according to Thomas, the opposite of the necessary is both the impossible and the possible. But human freedom is rooted in discerning the former from the latter. For the sake of the personal fulfillment, an individual must discern between what is achievable and what is not. However, the positive meaning thereof is rather to be enhanced. For the sake of the absolute human liberty nothing must be assessed as simply impossible in advance; no rash surmises as to the real possibilities of man are acceptable. The maximalist approach is only desirable. A free man is not likely to believe that anything is impossible just because told so, and before he/she checks himself it to be the case. The same pathway was embarked upon by those thinking innovatively in science. Some refused stubbornly to believe in the impossibility of what eventually proved to be but very difficult to accomplish. But on the other hand, it is not irrational to believe in God; i.e. His gratuitous presence in the history of human kind. Some (divine) facts might seem impossible only if regarded without appropriate attention.

The number rooted in beings can possibly serve to distinguish things and the modality of beings; the abstract number of mathematics; the number that numerates cannot do so. In other words: the abstraction of Physics makes the specific differences of things visible.

The problem is how universal a paradigm of science has been adopted. Aristotle's paradigm was capacious enough to leave room for both mathematical physics and the philosophy of nature. Once the paradigm rejected a reductionism would follow and the effects disastrous for nature, human activity and science itself.

The elementary “atom” of the perceived motion is organized by the unity of substratum that undergoes motion and the unity of substance in the end. The idiosyncrasy of Neo-Positivists towards everyday language is meaningful. Let us consider any statement at all. It begins with the capital letter and ends with a full stop. No matter how complicated, the statement speaks of *something* that *is* in some way, i.e. *undergoes motion*. It is impossible to express any thought at all save by using a *subject* and a *verb*. The structure of everyday language corresponds to the experience that underpins it. Neo-Positivists cherished the mathematical reductionism just because it disposes of the natural unity, normally expressed in statements. But it is essential not to overlook the unity of natural things. According to Aristotle, motion is a *relatively* complex phenomenon, a binary structure of the moving and the moved. Everyday language testifies to the fact. It is impossible to live in the world bereft of the natural unity of things. Normally, we ascribe an action to a definite person, and the responsibility consists in ascribing it justly and appropriately. The lack of responsibility might appear attractive to some, but it is impossible to live without consuming the effects of responsible actions. Not even a critique of everyday language is possible without using the same everyday language.

Quantum mechanics proved the existence of the so-called non-commuting magnitudes (observables) and the moving and moved are at core the same. According to Aristotle, potency and act are proportioned to each other. No order is possible without preserving the binary structure possibly hierarchically organized. Similarly, it is impossible to say anything at all without observing the same principle: only two things can remain in the definite proportion to each other. Only one verb can occur in a sentence. Should a more complex statement be passed, the same verb must be changed into a participle or gerund. The unity of a natural substance is founded upon a definite relation of its parts (being proportioned in such a way). In other words: two counterparts of motion appear eventually as two different substances. No further division is possible then. The natural unity consists in being not divisible. But on the other hand, it is impossible to envisage three or more components of nature on equal terms. The proportion is that of two things only.

The Aristotelian motion is – so to say – a “vector magnitude”. It points towards actuality of the object in motion. That fact accounts for the motion being cognizable at all. For according to Aristotle, everything is cognizable to the extent it is in act. A thing, as it were, “moves” our intellect just because the thing is in act. Geoffrey de Fontaines understood the statement literally. True, according to Thomas, *intelligere est quoddam pati*: “to understand is a kind of passion and movement, as the Philosopher says (De Anima iii); and knowledge also is a kind of assimilation to the object known; and the thing known is the perfection of the knower.”²¹ Aristotle says indeed that τὸ νοεῖν πάσχειν τί ἐστίν²², but intellection is a

²¹ Summa Theologiae, I c. 14, a.2 obj. 2.

²² De Anima, III, c. 4, 429b 24-25.

human act; not an act of a thing. It is not accomplished by a thing known but by what (or rather: *who*) knows. To understand anything at all it is necessary to assume a certain distance towards the object. Consequently, *πάσχειν* - *pati* is to be taken analogically, and if so, the ultimate possible actualization of human mind will consist in being “moved” by the First Source of the cosmic motion. Every object at all if grasped as it really is, is able to direct our attention towards the Ultimate Source of motion.

The Aristotelian Physics (*scientia naturalis*) considers all physical objects, those perfected by the highest forms included. Thus, human soul, albeit indirectly, comes under scrutiny of the Aristotelian Physics. Consequently, all physical forms beginning from the elementary and ending with animal ones can be of advantage in the cognition of the Ultimate and Transcendent Form actuating the motion of the universe. One could expect human forms, i.e. human rational souls, to be the best means for this cognition. Still, it is hardly possible that elucubrations of, e.g. Marx or Freud can foster such like personal activity. Words are but means of understanding, and some of them are better than the others. Every form whatsoever, if taken apart, i.e. in its entity, is but such a means. But any formal principle might be impaired by some disorder. Consequently, both the material in things and the sensible in signs must be elucidated lest it obfuscate the Ultimate.

Human understanding shares a common characteristic of the physical world, at least if seized analogically. For there is the active and the passive in it. However, the “passive” (called by Thomas *intellectus possibilis*) cannot be moved save by what is proportioned to it, i.e. an image elucidated by active intellect. Human understating is passive in a sense, but is not similar to physical passion after all. Passions, properly speaking, are connected with the sensual in man, and all the sensual as such is passive – nothing more. Emotions are so called because we yield to an influence of the imagined objects. In the genetic order, it is just the sensual that comes first. So, if considering the *temporal* origin of cognition, the passive sensation comes first. Children are “open” to the influence of the outer world, and hardly anything else could be expected of them. It is rather to be hoped that the influence should be in accordance with the rational in them that comes possibly in the adult life. For the rational in man could be hampered also. The natural desire for the perfection might be foiled.

According to Augustine, all men desire beatitude. The problem is where it is to be found. Aristotle says the beatitude must be an act; an operation of the best part of human nature; the *best* one and performed in the best way. The best part, however, is the intellect. Consequently, the happiness consists in the best operation of intellect, which is the contemplation. Thomas as a theologian adds that the contemplation of the Divine Essence, promised by Gospel is incomparably more than the philosophical contemplation, reserved probably to a narrow intellectual elite. And man can be defined (if ever) in the light of the Ultimate understood in this way. Be that as it may, the object of the most perfect operation of the most perfect form to be found in the material universe is the First Source of the cosmic motion.

Human life, accordingly, consists in the struggle for happiness. There is a starting point of what we call human life (say: A), and the end of it (say: B). Should we imagine the motion between A and B as a linear process, the phenomenon of human life would be not-understandable. There is the infinite set of points between A and B, and none of its elements is opposed (save spatially only) to the point of departure and to the end. In other words: they

are not *naturally* opposed. Now, as to the natural motion the opposite holds true. Everything between A and B is marked with the stamp of privation (στέρησις) if compared to the end about to be achieved. So, the privations are rather *obstacles* than sheer “in-betweens”. There are many obstacles *within* and *outside* a man. Fear might come both from the former (ignorance; debility) and the latter (enemies).²³ Moreover, sometimes it is difficult to draw a border line between them both and to say, whether an obstacle, i.e. what obtrudes the Ultimate is *within* or *outside*. And, pragmatically speaking, sometimes it does not matter. (However, it is *eventually* indispensable to draw such a line after all). The Psalmist, according to Thomas, mentions the enemies of his happiness, but they are first of all his own sins. The sins might be personified. Perhaps, they account for being “open” to the influence of those who direct their actions to some end unworthy of the ultimate destiny of man. Consequently, the struggle is unavoidable: the obstacles, no matter where found, are to be removed, or else we must (re-)move to another place so as to avoid them. The “human” truth is to be contradicted if it does not satisfy the requirements of the Ultimate End. All human activity must be absolutely free, i.e. advance freely towards the Ultimate Principle of the comic actuality.

Freedom happens to be defined and discussed in terms of its two modalities: freedom *from* and freedom *to*. Now, the former is but a prerequisite; the latter is nothing. For the absolute freedom is *not defined* as to its object (as in Hegel and Predestinationism); the Object is free and rational and the freedom is a gift. The Ultimate cannot be defined (is incomprehensibilis cogitatu). Being incomprehensible, the Ultimate cannot be subsumed under any category simplified so as to satisfy some plain notion of duty (being-free-to might be said to be a definition of duty).

Intellectus agens; the active intellect, is the only totally active principle in man. It abstracts from the sensual and makes the elementary structures of the physical world visible. On the other hand, all senses are passive. And the fact is perfectly used in the so-called advertisements. Emotions are the perfect means to manipulate people. Being open amounts to being manipulated; being led astray from personal aims by being simply used.

²³ S. Thomas, Super Psalmo 26, 1. Notandum autem, quod ad timendum concitatur quis aliquando ex interiori causa, quandoque ex exteriori causa. Primo ergo ponit auxilium contra primam causam. Secundo contra secundam, ibi, *dominus protector*. Est autem duplex causa intrinseca timoris, ignorantia et debilitas: unde in tenebris magis timendum est. Secunda causa timoris est debilitas; et contra has est remedium a Deo. Contra primum est illuminatio; unde dicit, *dominus illuminatio mea*: Mich. 8: *cum sedero in tenebris, dominus lux mea est*. Contra secundum est salus; unde sequitur, *et salus mea*: Psalm. 61: *in Deo salutare meum et gloria mea, Deus auxilii mei, et spes mea in Deo est*. Et ideo ostendit fiduciam: *quem timebo*, sic illuminatus? Isa. 51: *quis es tu ut timeas ab homine mortali, et a filio hominis, qui quasi fenum sic arescet?* Rom. 8: *Deus qui justificat, quis est qui condemnet? Et si Deus pro nobis, quis contra nos?* Causa extrinseca est homo, qui adversatur; sed adhuc non est timendum, quia dominus opponit se sicut scutum; unde dicit, *dominus protector vitae meae*: Gen. 15: *ego protector tuus et merces tua magna nimis*. Et ideo dicit: *a quo trepidabo*. A quo, si sumatur masculine, tunc est sensus, *a quo*, scilicet a quo homine. Si neutraliter, a qua re. Et sic nihil est timendum, nec homo, nec res aliqua.

According to Aristotle, there is the active and the “passive” in the human soul. Averroes wrongly assumed that the intellect is passive in the sense the sensual in man is, and a passion was meant by the intellection. He distorted the Aristotelian doctrine assuming that the possible intellect was a sensual power which associated images formed in the mind. Consequently, as it was nothing save an instinct; no difference was to be found between animals and men, and humans were deemed but beasts.

The weakness of human personal understanding is undeniable. An individual facing a scientific problem is almost at loss if left to his own devices. Generally speaking, physical phenomena are difficult to be described in personal terms for the simple reason that the language needed thereto is *given* rather than *invented*; it is rather learned than taught by an individual. So, some thinkers (as Thomas Kuhn) denied the very existence of the “naked facts”, i.e. existing apart from their verbal clothing. Facts were seen under the spectacles of language. Historically speaking, it had been first believed that the images (and the words) stood between things and the mind. Kant “corrected” the stance: the thing (Ding an sich) was indefinite and not-cognizable. Another step was that: things were, as it were, “nothing” if compared with the human language identified with the rational in man. Consequently, there was no possibility to compare a statement with the state of matter, as the latter was not possibly knowable. No room had been left for the transcendental property of truth, which accounts for things being possibly known and showing the order of the universe. The passive had been taken literally: man was tethered to the earth.

There is essential difference between stating the *difficulty* and *impossibility* of the cognizance of facts. The latter stance leads to the negation of the personal character of the cognition and to assuming the collective character of consciousness. Aristotle assessed the *difficulty*. There is but a tiny amount of entity in the personal data of cognition. The data, if taken apart, are not likely to lead to any spectacular results. Still, the same data, if consciously accumulated, boost an astonishing progress of science.

The dynamical development of philosophy before Aristotle testifies to that science is both personal and social activity. It is personal as no structure can be safely built save on the firm principles empirically known (naked facts). It is social as there are no means to accumulate those tiny personal contributions than *being open* towards those who are guided by the *disinterested* love for truth. People might contribute to the progress either directly or indirectly. For even those who erred, might have so, provided they sought for truth and avowed *openly* all the difficulties faced, stumbled upon and tried to cope with.

According to Aristotle, it was nature that showed the direction. No energy should be squandered for conflicting ideas. Judgment differs from conflict. A judgment if passed appropriately and with the discretion of time is always constructive, whereas conflicts might be so incidentally only. Two conflicting ideas might coincide in the proper time (καιρός), but it is preposterous to believe in the lucky coincidence as a rule, for time cannot be bestowed with a magic power to make things coincide constructively. Only human intellect can do so. True, the only opposite of truth is falsity, but not conversely. The opposite of a false statement might be no less false, and possibly absurd. So, nothing can guarantee that impugning ideas deemed false can improve the pursuit of truth. In fact, the advocates of the competing of ideas (similar to that of products competing on the free market) gave up the hope of attaining the

objective truth at all. And the consequence; the poisonous fruits of the sentiment are being consumed nowadays.

Spellbound by the blight of verbiage man is not likely to create anything valuable at all. Language if bereft of its empirical basis becomes barren. No room for innovative thinking is left.

For all its social character, language is but an outcome of individual rational activity, similarly as society is. Without the personal character of the basis the structure is poised in the air. The empirical data are at disposal of each individual, and there is no essential difference between scientific and everyday language. Everybody can contribute to the progress, provided truth as such is sought for honestly. The progress is unachievable save by means of personal contributions of those *engaged in disinterested* pursuit of truth. No language can form an individual consciousness. No society can replace the individual responsibility. The responsibility might well be believed to be possibly shifted upon others, but the bill must be settled sooner or later.

We can beguile the time by studying interesting ideas, but must not be beguiled by the idea of time. The human temporality was devised to replace the Transcendent Measure of actions, but the objective is futile. True, human actions must be understood as spiritual first of all. We must not image a pure sequence of the actions without them being connected, because the very consequence is eventually measured by the Transcendent Measure of motion. The Measure is the same as the Measure of the cosmic motion. The progress can be taken temporally, which, however, is but accidental to it.

The principle *omne quod movetur ab alio movetur* (everything moved is moved by something else) can be *mutatis mutandis* applied to the human understanding. The ideas, indeed, happen to be *accepted*, but the problem is how they *motivate* our intellect. For they can be espoused and become one's own thoughts or can be put up with only. If the former is the case, a certain immobility (freedom) of the intellect is implied; if the latter – the ideas are rather *necessitated* upon the mind. Moreover, it is difficult to be quite frank with oneself which is the case. Generally speaking, it is the problem of authority. If an anthropological proof of the existence of God had been possible, the authority (the human one) should be understood as the moving principle; something that motivates our intellect. But authorities are known to be fallible, at least those human ones. The experience of the destruction wreaked upon Europe in the 20th century became to some a “proof of non-existence” of God. Such was the inevitable destiny of anthropotheism (confusing the human and the divine) devised by Hegel. The human truth is the weakest one. Nevertheless, the genuine, disinterested and responsible pursuit of truth makes science possible.

2. The laws of Nature

In the first part of the 20th century, the Western Civilization marked an astonishing and unique progress and the cause was believed to be ascribable to the paradigm of sciences concerned with the mathematical description of the material world. It cannot come as a surprise that it

was tried to set down this phenomenon to a certain cause (the attempt to be already found in Kant). However, the problem of the driving force acting behind the scenes of the history of the scientific life does not seem to have been solved. Consequently, for the sake of science itself, and – more broadly speaking – for the sake of human rationality perhaps too, we should try to embark upon the solution of this problem from a more convenient (i.e. universal) point of view.

The problem cannot be solved in purely historical terms, as they are in fact spatial only (subsequent moments and times constitute the pathway of human history so). It is no use contrasting the modern paradigm of science with that deemed “obsolete” and “anachronistic” unless for sheer didactic or ideological reasons. But the Middle Ages were assessed so: in terms of a privation (of what was about to come as allegedly perfect). There is *some* reason indeed (as was mentioned several pages above) in regarding *personal* life-path from the perspective of the end (objective) about to be fulfilled. However, this objective (end) is not knowable otherwise than theoretically, and no life activity can constitute its own end. The same holds true as to scientific activity. The end must be grasped by an existentially disengaged observer: from without.

Generally speaking, it is impossible to assess any form at all (e.g. the expected form of science) by contrasting it with its privation. However, it was tried so: the privation (of a form; of its value) was attempted to be understood in terms of values possibly laid off on the axis of coordinates. Now, since the zero point can be chosen arbitrarily, the minus sign can be allotted to what was laid off on the left side of the axis.

Every privation as such, is a nonbeing and the positive knowledge cannot be gathered from negative premises only. Such an attempt must result in simplification as to the worth (in the matter at hand) of what was labeled a “worse” state of Civilization. If the problem was expected to be solved in historical terms, the adequate presentation of historical facts should have been provided. But on the other hand, science is not possible without some interpretation of facts and if the interpretation is not tantamount to ordering them appropriately, the facts are bound to be distorted. Historical facts substantiating the idea of the progress should have been given (proposed in an order), but they had been not, which is somehow understandable; for history, according to Aristotle, is the least philosophical of sciences. Its facts are hardly substantiatable. There is something between two points of history (between two moments A and B). There is a *substance*; a person: *the author* of the history. But modern history was depersonalized: the “substance” in it was either: Thun, or *élan vital*, or *lubido*: something that *governs* people, being itself *unmasterable*. Real facts (events, books, statements, discussions) were deemed but epiphenomena of that simple “substance” of history. Some pseudo-philosophical description was proposed by advocates of Modernity without concerning with real facts. The latter can be known (i.e. ordered), no doubt, but getting to know them is a laborious and time-consuming process. The linear idea of progress decidedly does not require much intellectual effort.

This work of ordering has been done by the historians of philosophy. Etienne Gilson is to be mentioned in the first place. However, the very fact of their work not being appreciated after all, testifies to the truth of the aforementioned Aristotelian statement (history is the least strict of sciences). In it, the gathering of facts might prevail over understanding them, and, in turn, the labor of those who improved the understanding might be easily squandered. It might

appear tempting to interpret facts arbitrarily and disregard what seems inconvenient. There is an undertone of subjectivity in the very term of interpretation. Moreover, it happens to be tacitly assumed, that the *objective* interpreting of facts is infeasible.

The problem of the driving force of history, mentioned above (its *end*; not its *substance*), can be illustrated in plain terms: an individual (person) might be acting and the source of his/her vital activity sought. Now, it is by no means obvious what is the *real* (the first and supreme) source there. Nutrients are necessary and uncontaminated water also. But mere providing nutrients does not guarantee their effective metabolism. No animal is able to digest food without rest and a safe abode of its existence. Now, man finds *his* rest in contemplating the horizon of *his* existence. To the contrary: no material objects could appease his desires. In sum: the *human end* might go easily unheeded. For it is easier to look at things superficially only, without bothering about their nature and source of the life. Consequently, a kind of versatility might be appreciated disrespecting the real source of the activity. That is precisely the case with the so-called modern type of thinking. Chaos prevails over dynamism and order.

Solving the problem of the progress in terms of temporality might be tempting. Time, however, is scarcely able to explain the phenomenon of motion all by itself. It is but an accessory of motion. Ancient Greeks called time both “wisest” and “stupidest”; all depending on whether it produced the perfection or the opposite. The very flux of events might obliterate the stable knowledge obtained earlier.

On the following pages, the claim will be substantiated that the driving force of the genuine progress of human understanding is the same as the ultimate end of human existence and the First Cause of life and motion in general. For it is rationality that makes man what he is and human understanding can be explained in two terms only, the terms of its outset and outcome.

The area allotted to the human mind in the Aristotelian (naturalist) paradigm seems to be vast enough. Depending, as it is, on some source, the human understanding unfolds rather freely, to the extent even of being unaware of its very source. The driving force in question is not therefore the same as an objective fully (thematically) understood. It must be, eventually, the subject-matter of a disciplined inquiry, but we live and act before we identify the source of life; the life scientific included. It can (and should) be so, but the deplorable fact is that people happen to be unaware of who they are indebted to.

The spectacular success of the so-called exact sciences is due indeed to their being concerned with relatively narrow scope of interest; to their being disciplined this way and not yielding to the temptation of extrapolating their results. But one can recall here the famous saying by Francis Bacon also: “We must not then add wings, but rather lead and ballast to the understanding, to prevent its jumping or flying”. No matter how “sober” the statement was expected to be, it was no doubt bold and not likely to be uttered by a man deprived of “wings”. Thus, the problem is whether it assessed the understanding adequately. Can human energy be really canalized in the way which adds up to treating it instrumentally only and depriving people of the real freedom? The disastrous effects are not likely to occur at once. It requires some time to awaken to the fact. Moreover, any spell of time might be long enough to shirk accepting the consequences, as every ardent proponent of a fixed idea is focused exclusively on its one aspect only and unwilling to reflect. For a pragmatist, “to reflect” is the

same as “to turn back”: to direct his steps in another direction. For a theorist, “to reflect” denotes the act of the intellect first of all; if redirected this way, human spirit is not frustrated but satisfied with a broader view.

Assuming a broader perspective is not possible by simple extension of time; it requires, as has been said, some insight into the nature of the process. For an ideologist, an idea not being effective enough might be ascribed just to its being espoused not fiercely enough. So, it is all about consequence: people might be consequent (which is to say: obstinate) in entertaining exploded errors, but not, at the same time, consequent in reflecting on each particular statement.

There is the essential difference between stating natural boundaries of the objects of human understanding and forcing it into a corset of ideas conceived a priori. There is a difference between what Aristotle observed as the strict paradigm of sciences, which differ as to their subject-matters and forcing every activity into a scheme devised in advance. The latter idea might appear to be efficient for some time, but, in the long run, it is bound to exhaust the real source of human activity. That science might be what it must be, it must be maximalist, because only the unhampered human activity is really innovative.

The pragmatic aspect of the problem was acknowledged even by Kant. He ascribed what he called “regulative” role to his “transcendental ideas”. They are those of: the world, human freedom, God. However, the reality of God was rejected, and hardly anything else was to be expected of *ideas* no matter how “transcendental” they were believed to be. The real and the ideal do not, normally, coincide. Thus, they proved to be the opposite of what they were believed or declared to be. For all their being “regulative”, they were *demotivating* nonetheless in the end. For relegating them into the sphere of the ideal proved to paralyze human *physical activity*. They proved to be but “comforting illusions”.

Psychologically speaking, nobody can for a long run put up with the fact of his being too weak to face the reality such as it is, without resorting to illusions. But it is not about psychology at all: there is no need to resort to any illusions whatsoever. To the contrary: envisaging the Ultimate man realizes the existence of the source along with his/her dependence on It.

On the other hand, those regarded as emotionally tough were believed to follow the moral law without any facilities and admired for the fact as their ideas were not underpinned by any unearthly idea. Thus, perhaps, the creed of Rationalism can be summarized. It can be expected that it was for the sake of those deemed “weaker” that “comforting illusions” were created. Nothing of the sort. First, Rationalism is ruthless in putting people on the idealistic Bed of Procrustes and *rejecting them next crippled*. Secondly, and more importantly, those serving an idea to be realized in the (indefinite) future were, in fact, subservient to those aware of its true nature. Now, being subservient is the same as to be enthralled. Thus, modern slavery appears to be an heir to the philosophical tradition of the Hegelian “liberty”. The real source of human activity is tried to be *used* along with those who believe in it. Those who believe in the Transcendent Source of being, but not in any “lofty ideal” devised to replace it, are not likely to be used that readily, but might be tried to nonetheless as far as the words used in describing the Transcendent Source are tampered with. Everything depends upon whether Good as such is acknowledged to be the real source of physical energy (similar to the energy

of chemical bonds in human nutrients, but infinitely more energetic nevertheless) or tried to be “humanized” so as to serve human objectives.

It is impossible to settle the exact status of “transcendental ideas”. In fact, they are but a caricature of the proof of the existence of God. God’s existence (the fact that He exists) is a fact similar to those of the material world, for He is really present in it. Normally, God can be deemed more “real” than everything else, which was, in a sense, claimed by Pyrrho of Elis. Generally speaking, everything that acts more intensely is, in a sense, “more” real, e.g. a tempest might be perceived as more real than a puff of the wind. God is “more real” in the sense of acting more efficiently than any particular (material) cause. But the naked fact of His being real is quite similar to those normally so called.

Thus, one fact given, it can always be asked about the others; i.e. about the relations to the objects less perceptible in the world. And the boundary between the known and the unknown is shifting as long as the progress of science is advancing.

The Copernican Revolution of Kant consisted in creating a *boundary* a priori – without any special physical counterpart. The so-called “consciousness” was severed from “reality”. For a considerable time, it had been asked what was the hidden side of the world, the until unknown one. Now, according to Kant, such a question should be banned from science. His stance was first of all anti-metaphysical as the transcendental was devised to replace the Transcendent. Secondly, the stance proved to be antirational, as the existence of the border of the known and the unknown whets normally the rational appetite for knowing the unknown. The distinction was pivotal for the Greek philosophy. It is, at the same time, pivotal for any man, as we are rational to the extent we suppose some unheeded aspect of the world to subterfuge our senses. One does not want to see things superficially – to see appearances (phenomena) instead of things. The boundary mentioned above accounts for our being *physically* stimulated by one object to know the other. No such like account was provided by Kant. “Transcendental ideas” were an Ersatz of intellection.

What makes, in general, things appear to us? The reason was given by Aristotle. Phenomena are appearances because the *things* appear to us in some manner and order. The interaction between the intellect and the world becomes visible in the Aristotelian “naturalist” and “intellectual” psychology. The contrary is the case in Kant. The two spheres mentioned above are radically opposed with no prospect to bridge the gap. This is not only the philosophical problem of Idealism. It is the problem of building a Chinese wall between the mind and the world with the effects reaching far beyond philosophy itself. Kant attempted at assimilating all the sciences to mathematics. Consequently, the rational in man, was tried to be associated with (reduced to) mathematics. But the problem is whether man *compelled* to think mathematically, can think at all. Perhaps, mathematics is fascinating itself, but ceases to be so nonetheless, once forced upon instead of being proposed only. On the other hand, when Neo-Kantians sought for a room for Geisteswissenschaften, the room was nowhere to be found save in (the mathematical) consciousness and the philosophical ideas became (in their minds and in Husserl too) similar to mathematical objects.

The reaction for Dualism might be vehement or even excessive. More often than not it has led to some simplifications. Alexis Carrel’s interesting analyses are somehow marred by them, but the very manner the problem is being dealt with is instructive and deserves a closer attention. The problem, moreover, coincides, to some extent at least, with the notorious mind-

body problem. If the idealist stance (in general) is, for an ordinary man, “theoretical”, the latter, to the contrary, is as “practical” as no other can possibly be. For our body is, no doubt, a material object, and we need not be bothered about a precise notion of matter here.

The concept of consciousness is equivalent to the analysis made by ourselves of our own self, and of the expression of the self of our fellow men. It is convenient to divide the mental activities into intellectual, moral, esthetic, and religious, although such classification is nothing but an artefact. In reality, the body and the soul are views taken of the same object by different methods, abstractions obtained by our reason from the concrete unity of our being. The antithesis of matter and mind represents merely the opposition of two kinds of techniques. The error of Descartes was to believe in the reality of these abstractions and to consider the material and the mental as heterogeneous, as two different things. This dualism has weighed heavily upon the entire history of our knowledge of man. For it has engendered the false problem of the relations of the soul and the body. There are no such relations. Neither the soul nor the body can be investigated separately. We observe merely a complex being, whose activities have been arbitrarily divided into physiological and mental. Of course, one will always continue to speak of the soul as an entity. Just as one speaks of the setting and the rising of the sun, although everybody knows, since Galileo’s time, that the sun is relatively immobile. The soul is the aspect of ourselves that is specific of our nature and distinguishes man from all other animals. We are not capable of defining this familiar and profoundly mysterious entity. What is thought, that strange being, which lives in the depths of ourselves without consuming a measurable quantity of chemical energy? Is it related to the known forms of energy? Could it be a constituent of our universe, ignored by the physicists, but infinitely more important than light? The mind is hidden within the living matter, completely neglected by physiologists and economists, almost unnoticed by physicians. And yet it is the most colossal power of this world. Is it produced by the cerebral cells, like insulin by the pancreas and bile by the liver? From what substances is it elaborated? Does it come from a preexisting element, as glucose from glycogen, or fibrin from fibrinogen? Does it consist of a kind of energy differing from that studied by physics, expressing itself by other laws, and generated by the cells of the cerebral cortex? Or should it be considered as an immaterial being, located outside space and time, outside the dimensions of the cosmic universe, and inserting itself by an unknown procedure into our brain, which would be the indispensable condition of its manifestations and the determining agent of its characteristics?²⁴

An attempt was made to analyze the “relation” mind-body (them being related) in non-reductionist terms. The relation overlaps, as has been said, with that of the mind to the (crude) nature it faces. Carrel, in brief, accuses Dualism of turning a blind eye to the phenomena that must have been analyzed without simplification and reductionism. The conclusions drawn from these considerations by Carrel himself are the other matter. Calling, e.g. mind a “mysterious being” does not seem to meet the requirements of science. The problem had been made out distinctly enough, but the solution had not been provided. The want of general ideas is perceptible, as those drawn by Carrel from Bergson are not strictly philosophical.

²⁴ Alexis Carrel, *Man, the Unknown*, Chapter IV. Mental Activities, 1.

The analysis of relations has been sadly neglected by the majority of philosophers. The unity in diversity (the order) is hardly understandable without a precise notion of the relation. The mind-body problem is, in reality, the problem of how the two are related to each other. In fact, they are rather relatives (which is to say: definable by each other) than substances with something in-between them (the in-between imagined so might satisfy the need for visualization, but not for comprehension). Moreover, the primitive cognitive data are just relatives, and the cognizance of substances comes but subsequently only. But on the other hand the phenomena being just relatives is not comprehensible save for a substance – human intellectual soul.

The mind-body problem was attempted to be solved by Descartes himself. The attempt undertaken in the “Epistles to Princes Elisabeth” was almost desperate. Restoring the mind-body unity was impossible without rejecting the principles, which, obviously, Descartes was unwilling to do. Carrel was right in a sense, claiming that there was no relation between mind and body as they are one. There is no relation indeed, should the relation be understood as *something* (an object) between them both. The soul and body are relatives themselves, i.e. related to each other by themselves.

Descartes introduced Dualism so as to guarantee the immortality of human soul. But being relative towards body does not entail the soul being mortal. According to Thomas, the soul animates the body, so to say, with its one part only, whereas the other is what it really is – an immaterial principle; the principle of intellectual life, about to last interminably. It is not, to be sure, an ideal that motivates the progress of science (serves it), but an intellectual fulfillment prepared and anticipated by what is called science in the normal sense of the word. Thus, everything that precedes the ultimate is but a way of the intellect towards it. Jaspers might have believed the way being indefinite (or pretended to believe so) and human being defined as being-on-the-way, but without the terminus of the way obtainable. But people cannot advance into the indefinite in the *real* life. Neither, for that matter, can scientists. Methods (μέθοδοι) used by them participate (μετέχουσι) (“have some part”) of the terminus of the way (ὁδός) of the human life.

The core of the problem of Dualism is that the otherwise right methodological principle has been unjustly extrapolated. For the principle is sound indeed. The “outer side” of a phenomenon is discovered when applying the non-contradiction principle, so to say, in concerto. The outer side accounts for the source of being of what is *relatively a nonbeing*, i.e. demands an explanation in terms of actual being. Otherwise a phenomenon would be not-understandable. An object becomes definite if compared in the same genus to its cause. First of all, the methodological genus is meant. But not only this. Generally speaking, every object is understandable if compared with others by using the copula *is* in a syllogism. Naturally, and in accordance with non-contradiction principle, it must be neatly opposed to what *is not*. It must be contrasted with nonbeing. Thus, one can advance into the unknown area equipped with the tools of methodological inquiry. The outer side of the given (either directly in a phenomenon or indirectly as the state of matters) might be explored.

The extrapolation occurred when Descartes absolutized the outer side and identified it with the “bodies” foreign to the “inner side”, i.e. consciousness. The stance was radicalized by Kant, who thought that the “bodies” *must be* unknowable. The so-called Ding as sich appeared. Thus paradoxically, the philosophy devised as paradigmatic for science proved to

be the opposite to what it was declared to be. The progress of science consists in broadening the realms of scientific interest, “annexing”, as it were, the until unknown terrain. But the outer side, as understood by Kant, *could not be* explored at all or *must not* be so. Moreover, no valid criterion was provided to discern the known from the unknown. Kant puts up with the statement that the categories under which the objects were to be subsumed flow from the transcendental source (Avicenna calls it *Dator Formarum*: the Spirit emanating species of things) in a definite sequence which must be explored philosophically. The so-called transcendental deduction of categories was meant, or (as in Husserl) the eidetic reduction. The only discrimination of objects was to be found in consciousness. Consequently, philosophy consisted in attaining a higher state of consciousness or in philosophers being “enlightened”. The philosophical theory of this general illumination was inherited from the Arab-inspired medieval philosophy.

It seems that the interest in the outer side of the given can only guarantee the unhampered development of science. No one can deny the merits of the Arab Philosophy and their Civilization. Still, Aristotelianism as accepted by Arabs and passed on to Europe is affected by some scathes that make it less valuable than the original. We, Europeans, are no doubt indebted to Arabs and owe them gratitude for preserving the Ancient bequest of philosophy and science. Still, we cannot put up with the philosophy being treated on equal terms with theology or being confused with “humanism”. But it was the case when they melted into one *Geisteswissenschaft*. An awkward hybrid of theology, philosophy, science (in the narrow sense of the word) and ethics was created to the detriment of all its constituents.

Perhaps, the illumination must be explained after all. The most general conditions of cognition are to be elucidated, which is to say: the objective borders humans must stumble upon in cognition must be recognized. It was the case with Augustine. The theologian praying “*noverim me noverim Te*” declared at least implicitly the existence of a chasm between God and creature only to be *bridged* by the *grace* of God. Thus, a challenge was posed to philosophy that was about to appear in this cultural context. No such a challenge was to be found in the Arab medieval philosophy. Neither did it appear in the philosophy of “Enlightenment” inspired by it. But it should have shown up. The outer, the transcendent side of the given must be explored. Philosophy must tackle it thematically.

One of the effects of the philosophical minimalism was leaving the room traditionally occupied by rational thinking to manifold sorts of “mysticism” or “ideologies” that replace the rational with the emotional. Nature abhors the vacuum. Deprived of the rational explanation of the world man *naturally* turns to *any* sort of explanation.

On the other hand, minimalism went hand in hand with Nominalism, which claimed that only particulars exist and no relations amongst them. So, no laws of nature existed, but some “regularities” instead. The first known was the unity of a concrete being, and everything that was known later on was but an accessory of “concrete beings”, in a theory that could only be probable but never certain.

Thirdly, Nominalism with its predilection for particulars produced the fragmentation of science, and nothing else was to be expected of evaluating the amassing of “facts” over analyzing them in the sense mentioned above. Specialization, no doubt, is essential for science. But on the other hand, it cannot lead the creation of some isolated enclaves and ideas

uncheckable just because being isolated. If but one specialist had existed in a science, the science would have been nothing. If few existed only, the situation would be hardly better.

Fourthly, specialization might be connected with the commercialization of science. No disinterested pursuit of truth was expected. Naturally, a scientific statement if compared by a “consumer” (a layman after all) with some more “attractive products” will not stand the trial.

Fifthly, the commercialization must lead to either competition or monopolism. Monopolism is deadly to science understandably enough. But competition must be so too. For competition is about eliminating rivals along with their “products” and *no discretion* between persons and their personal assets (or needs) is deemed valuable. Neither is collaboration.

Generally speaking, no objective gauge of the validity of statements has been accepted, as it used to be the case in Aristotle. According to Aristotle, natural laws are stable. This, however, does not add up to any kind of fundamentalism. The scientific statements are *relatively* valid. They are valid to the extent they can be possibly confronted with the natural state of matter. Still, no relativism must issue. For the statements assume discrete values only. Similarly, the progress of science advances neither monotonically, nor by any “revolutions”. It advances by discrete stages objectively checkable. Relativism entertains the claim that the distribution of values is monotonic. Logical value of a statement was meant, or moral values that were forbidden to be confronted with the real state of matter. No responsibility for values that were in constant flux was possible. The genuine “relativism” (as proposed in the present book) consists in the claim that ideas must be potentially acceptable by all people – without any discrimination. However, a discrimination is indispensable between *ideas* possibly acceptable and those which are not. Similarly, an ideal would have been nothing if no natural substratum to support it had been pointed out existing in each individual person – without discrimination a priori of those more and less apt to accept it.

According to Aristotle, there are but discrete subject matters of sciences and the statements within each of them, in turn, are to be confronted with a definite state of matter. There is no continuous flux of the intellectual light (as imagined by Avicenna) approached by a scientist continuously. The very discretion of the premises of a syllogism makes the conclusion objectively and peremptorily valid.

The problem of Nominalism (and the philosophy that issued) consisted not that much in claiming that only particulars exist (it cannot be denied that only they exist on their own), but the statement that particulars are isolated, which is not only problematic, but in fact absurd. For had it been the case, what would have been the cause of us not being isolated from them in the same manner? Possibly, they would appear to us as disconnected as only dream images can be. No wonder that Descartes thought it to be a serious problem to tell between being asleep and being awoken.

So, the problem was not that of logic only. It was not about the universal first of all. It was about whether nature presents to us in a definite manner or rather is “dreamt of”. Ockham’s Nominalism was opposed to the pagan naturalistic view of the Ancient Greeks. There were no laws of nature; for God was as omnipotent as only can be dreamt of. There were no discrete levels of entity and no discrete statements relating to them, as everything depended on the will of the “Absolute Despot”. Significantly enough, Absolutism went hand in hand in history with the ideology of Enlightenment. The Polish Commonwealth had

resisted both this ideology and political Absolutism until the partitions put an end to her existence.

Positive law was expected by Rousseau to express the so called *volonté générale* – universal will of people who decide *collectively* about something. The problem of being collective is pivotal here. We agree upon anything at all only after communicating the sense of what we expect to agree upon, which is normally impossible without *understanding* it. It are only brutes who decide almost automatically, because their instinct works thus: automatically. There is no human herd instinct, but Totalitarianisms tried to replace the rational in man by the emotional (a herd instinct). Rousseau has been widely acknowledged to be a forerunner of the modern Totalitarianisms. In “Politics”, Aristotle anticipated the possibility of social unification notorious in the XX century. The aim of a lawgiver (his act was called νομοθεσία) is making people morally better (educating them so as to make them happy), or – to be precise – creating a minimum; a realm in which the rational and the moral in humans could develop freely. Thus, politics shows up a relative of ethics.

... we shall thus see better the nature of happiness. The true student of politics, too, is thought to have studied virtue above all things; for he wishes to make his fellow citizens good and obedient to the laws. ... for the good we were seeking was human good and the happiness human happiness.²⁵

But it is impossible to be *simultaneously* an educator and a person educated. Now the Kantian (and Rousseauian) idea of lawgiving presupposes the act of the lawgiving will being passed simultaneously; it blurs the distinction between *the acting* and *the acted upon*. A unification must follow. We might dream about “all people becoming brethren”; about universal love (φιλίαν τινὰ θαυμαστήν πᾶσι πρὸς ἅπαντας)²⁶, but it is nothing save a dream; it is impossible to live in dreams, and sometimes it might become wretched. An idea of humanity can make us blind for real humans. A blind man is likely to stamp on an object he fails to see. People (particular people; persons) and especially those marginalized, powerless, and handicapped (the unborn, the terminally ill) can be such objects for those who put on horse-blinds. Ideologies are – in general – such horse blinds.

The modern consequences issue:

- 1) The aforementioned relativism as the obvious conclusion of the statement that only monotonic distribution of values existed;
- 2) The privileged status of the “enlightened”; the intellectual elite not responsible before any objectively valid norms;
- 3) No natural law existed, but positive only;
- 4) The deification of the Rousseauian *volonté générale*;
- 5) All laws – no matter how understood – underwent a constant flux (evolution) plastically depicted by Bergson;

²⁵ Nicomachean Ethics, by Aristotle, Transl. by W. D. Ross.

<http://classics.mit.edu/Aristotle/nicomachaen.html>

²⁶ Aristotle, Politics, (II. ch. 2. 8-10.)

- 6) No transcended point of the convergence of the “evolution” or “enlightenment” could be accepted, save a mathematical ideatum;
- 7) There was no resort to natural law for those handicapped in the “competition”.

Avicenna was a great philosopher and we owe him a lot despite the aforementioned flaws of his thinking. With a great acuteness of mind he distinguished the so-called *communia per causalitatem*. The statement coincides with that of Aristotle. “A generality (common notion) is precious because it reveals a cause”. To be precise: it might so. Alas, some philosophical ideas *pretend* to be universally applicable. The higher a cause (the more transcendent), the more effects can it spawn. Human ideas can share some of that character. They may be fertile and boost the real progress of science if accepted with responsibility. Sadly, they are able to occasion the opposite.

The progress of science consists in discovering more and more vast realms of being. But the realms in question must be defined in some way. Now, it is metaphysics that defines them in the most general terms. But if so, it remains to ask about the end of beings and its nature. Naturally, the problem of the End of beings, the problem of the Transcendent Cause appears.

Following the footsteps of Avicenna, one might (as it seems) be justified in assuming that the nature of the End could be as universal as the effects triggered. But on the other hand, it is obvious that particulars can produce effects only. Is, then, God a particular or universal being? According to Thomas, neither is the case. God’s unity is absolute as He is absolutely indivisible. Still, He is not known to us save as the Universal reason of being (*universalis ratio essendi*).

Etymologically speaking, *concrete* things are those that *coalesce* from some components (*con-crescunt*). The individuals as we know them are concrete. Consequently, their unity is *conditional* only, viz. conditioned by something that unites them. And the first source of unity is simply one, without any qualification of being one *just because being made so*. Generally speaking, the unity of an *in-dividual* consists in being in-divided either absolutely or in some respect at least.

The majority of philosophers, especially after Kant, espoused a bizarre assumption that the unity of an object was known first. According to Kant, the unity of an object was constructed in the mind (knowing consisted in constructing). According to others – the real unity was meant. Apparently a fallacia accidentis occurred. We know things *because* they are unities, but their unity is not known first. Similarly, one can see the sun *because* one opens the window, but the sun is seen, not the opening of the window.

Let us imagine somebody standing on the seashore. Is he able to tell one wave from the other? Apparently, he sees *something* (which attracts his attention), and the nature thereof must be elucidated, which was just the case in Aristotle. The perception of the beauty of nature naturally terminates our cognition. It triggers the mind activity and whets the appetite for the unknown causes of what we see.

We perceive particulars only, as our cognition is a life process and we are but one of the particular things that exist in the world. However, the contention that we *know* individuals first and everything else later on only, is ridiculous. True, we can construct (as Kant did it) an object out of unities, but the object constructed thus is not the natural one. There is no

evidence that no complex things are to be found existing in nature, as Kant claimed. To the contrary: the only unities possibly perceived are those of *concrete* things, and the *concrecence* thereof provided by nature makes them being both individual and knowable (being open to our mind).

We perceive complex things only, and the understanding of their unity comes but later on by means of a reflection, i.e. turning them out to be not possibly divided.

So, it remains to settle how the real things “concesce” in nature. Both facts and individuals are instances of such a *concretion*. For it is the nature of a fact to be “concrete” of the moving and the moved and the nature of an individual to “concesce” of matter and form. First, we perceive a complex phenomenon of movement, then, the phenomenon is analyzed (“divided”) and the moving and the moved appear. Then, in both the moving and the moved we find the same structure of the actuating principle and the actuated one. Facts are what they are and are cognoscible only because of their having a binary structure united of the actuating and actuated. These two principles can be either exterior (as is the case with motion), or interior (as is the case with individuals). These two principles are intertwined more or less tightly (the form might dominate over matter to different extent), so that there is no inconvenience in saying that something is *more one* than the other. The statement simply reads: form and matter are bound differently, all depending on the perfection of a thing. The more perfect beings are more susceptible of destruction and are “more one” in the sense of their structure being more counterbalanced. Science states in fact nothing save relations more or less effectively pervading the world (and constituting some unities). In accordance with the common sense, we say that the unity of a plant is less than the unity of an animal. The former can be safely breached, whereas a civilized man imposes some serious restrictions upon breaching an animal’s integrity. They must not be killed save for sustaining human life, albeit not his indulgence in eating; they must not be experimented on save for very important reasons and not just for satisfying someone’s curiosity. This means to act humanly towards them. To act humanly, however, entails acknowledging man’s own dignity first of all. For observing it one abstains from killing some animals just for the sake of sheer pleasure connected with eating. One cannot treat animals humanly unless he treats himself humanly first. One cannot envisage himself as a consumer only.

Needless to say, breaching the integrity of human body is all the more unacceptable. It is unacceptable to harm innocent persons. But not only *material* integrity should be taken into account. The emotional integrity must not be breached all the more. No individual can be exposed to sensual stimuli indiscriminately and against one’s will. The emotional integrity demands being freed from importunate advertisements, films or the so-called music, as the entertainment (distraction) makes men distracted either for some time or more permanently, but hurt (lamed) anyway. These stimuli are a kind of aggression, albeit a refined one, to be sure. The disintegration of human personality is no less wretched than breaching the somatic in humans. Moreover, the integral development of this personality demands that more precious in man (the intellect) dominate over the sensual.

It is preposterous to believe that the sensual should be analyzed so that the rational might follow. No elements account for the complexity of a structure. We get to know our ultimate abilities acting first and reflecting on what is actually accomplished next. Acting

makes for it to be the way (ὁδός) (of the intellect and will); reflecting makes for it to be a method (μέθ-οδός) and the human life unfold not at random.

Intellectual power is augmented by the habit of precise reasoning, the study of logic, the use of mathematical language, mental discipline, and complete and deep observation of things. On the contrary, incomplete and superficial observations, a rapid succession of impressions, multiplicity of images, and lack of intellectual discipline hinder the development of mind. We know how unintelligent the children are who live in a crowded city, among multitudes of people and events, in trains and automobiles, in the confusion of the streets, among the absurdities of the cinemas, in schools where intellectual concentration is not required. There are other factors capable of facilitating or hampering the growth of intelligence.²⁷

It can be asked how much energy is being lost when trying to concentrate on one's work despite importunate advertisements, the so-called music and the like. Sometimes the energy is irretrievably lost as in children who learn in vain to work effectively. Men become weaklings unable to act and work intensively because distracted every time they try to. Does the alleged economical profit from advertisements counterbalance that loss? Apparently, the bill for the economical profit from selling junk-food is paid when diabetes is cured for the money of taxpayers. But the bill for distracting human emotions must be eventually settled too.

More generally, absolute human integrity must be respected unconditionally. The integrity of human rational nature cannot be exposed to random stimuli. Humans are integrated mentally not on a Psychoanalyst's couch but by the strong desire for the ultimate End of their life.

If "every man has the right to life, liberty and the pursuit of happiness", then nobody can be forced to accept an Ersatz instead. The terms (life, liberty, happiness) might be re-defined and their meaning tampered with. But then, no maximum of life and maximum of beatitude is obtained but some surrogate instead. The safe footing for human existence is indispensable. Natural law is such a point of reference.

Evolutionism and the theory of the General Enlightenment assume the monotonic distribution of both world's energy and man's knowledge. One falls prey of the illusion that both reality and understanding could unfold according to that scheme. But even for the sake of experimenting, defining natures operationally proves insufficient.

Evolution was understood as experimenting with various models of "natures" similar to producing goods to the free market with the prospect of their being accepted. It can be asked whether the idea of the free market was, as it were, a human substantiation of this general tendency to checking what is otherwise impossible to be checked objectively, or vice versa: the theory of evolution was conceived in Darwin's mind because Lesseferism in human relations was deemed by him so obvious that he thought it to be universally valid. Evolutionism is the Lesseferism on the cosmic scale indeed. But on the other hand, Socialism would have been a desperate endeavor of some "fossils" to survive despite having no "natural right" to it, as the only natural seemed to be identical with the "creativity" of experimenting without restrictions and reasoning too (producing "goods" at all expense).

²⁷ Alexis Carrel, *Man, the Unknown*, IV, 2.

It seems to be becoming to ask whether Darwin's thought advanced in – so to say – the avant garde of the Cosmic Evolution being its exponent. Did Evolution, so to say, speak out its own essence with the mouth of Darwin? It can be doubted, as the same magnanimity of Evolution as towards Darwin must not have been shown towards those who claimed something completely opposite to the principle of the ruthless completion, viz. Marxists, who believed in the existence of the classless society. For the proponents of Marxism espouse the idea of Evolution with considerably more energy than Liberals did.

Obviously, the appearance of the theory was a unique phenomenon after all, and not an expression of the universally valid tendency. The unique relations of the 19th century's capitalism had been extrapolated and accepted subsequently in the cultural context completely different from that original one. Apparently, the very context of its origin sank into oblivion. The fact that the theory exists nowadays – in the cultural context foreign to the idea of the “wild” capitalism – is due to the intellectual indolence and passivity in accepting ideas that would have been themselves “fossils” otherwise. There is some “evolution” in human relations nowadays indeed, but the values (generally speaking) and ideas are produced and tested, in the way the material world cannot afford to. Should man be treated in sheer biological terms (as in Freud, the evolutionist), abortion must be treated as a debauch, an unreasonable waste of energy. No species aims at auto-destruction. Why is it the case with humans? Why humans undermine the very foundations of their existence? The problem of the natural environment is vast enough. The destruction, and the possible extirpation of the human race by means of nuclear energy, testifies that the theory of evolution contributed to the contrary of what it was expected to do. The Pandora's Box had been opened and the specters of the irrational haunt the modern imagination. The theory of evolution evolved itself. It proved to be but a historical ephemeris if taken as such. Once the job had been done, no consequences were taken into account.

Consequently, the *theory* of evolution is not that much a porte-parole of Evolution itself as rather a kind of anthropomorphism (if the views of Smith and Darwin should be regarded as anthropological). According to both Smith and Darwin, the economic relations of the epoch might have appeared natural in the strong sense of the word. But, apparently, some *idola specus* occurred.

But the very idea of experiment deserves a closer attention, as the effects of the idea of competition and “struggle” do not seem that destructive there.

First of all, to understand experimenting in terms of sheer “producing” and testing at random is far too simple. There is some similarity between them, but a difference, too. The value of an artifact *might be tested* reasonably easier if checked on many specimens. Still, there is no guarantee that this would be the case. Producing is *an* experimenting on a large scale potentially only, as a scientist is guided by disinterested pursuit of truth, whereas the same cognition of truth might be contrary to a producer's material interests. Some facts might be awkward and silenced, which is contrary to the very idea of science.

The problem of thinking and acting being really innovative is essential here. The prospect of profit cannot be fertile enough to spawn the innovative thinking, whereas the idea of disinterested pursuit of truth must be so. Some objects attract a scientist's attention, which is by no means identical with alluring him with any material profit.

Moreover, although there happen to be accidents in experiments, generally speaking, some *neat* idea that underpins an experiment seized at least indirectly is indispensable. Moreover, performing an experiment must be far from being just spontaneous; nay, the history of science testifies that the most important experiments were carried out with incredible minuteness and diligence. *One and the same* algorithm was reiterated almost ad nauseam.

Is there anything similar to “trial and error” to be found in nature? To a casual observer (who Darwin was after all) experimenting might be similar to testing at random. But not for a genuine scientist. His work is laborious and accurate. Thus, it should be asked, what makes him *keep in mind the same idea* despite all obstacles that he stumbles upon. Apparently, some *discrete* idea of a natural object must have *endured* in his mind. The idea stemming from the natural world. Secondly, artefacts might be produced not only to the free market, but must be produced in general first with a certain objective in a producer’s mind. Is he experimenting or testing or whatever you call it with some ideas possibly acceptable on the free market? A *casual* observer might well think so.

Let us consider further the theory of evolution. Let us assume (for the sake of reasoning) that nature really experiments with species and experimenting is not just triggered by anything similar to the human greed, which turns against the good of homo sapiens apparently enough. Nature experimented and tested objects. Some adapted, the “worse” were doomed to extinction. The idea is quite simple. A adapts to B; B adapts to C and so on. But what adapt A, B, C, and no matter how many objects to if taken as a whole? Apparently, the world taken in its entirety must adapt to *something*. What does it adapt to? The only reasonable answer (and in accordance with the paradigm of Scientism) is that it adapts to the aforementioned mathematical ideatum. Things were more adapted (“perfect”) to the extent they approached to the ideal of thinking – identified with mathematics. But things are real – no matter how understood. Are then mathematical objects real too? Or at least as “real” as to attract the material beings with the prospect of being adapted? An electric charge is attracted by a source of the electric field, and mass particles – analogically. But apparently, mathematical objects are not similar to those physical ones and cannot, as it seems, attract them, at least in the way we know anything about attraction as such. The problem of the nature of mathematical objects emerges and is in fact unavoidable. Now, no satisfactory solution of the problem has been provided by Evolutionists.

Aristotle says that mathematical objects were abstracted from the natural things (and were their accidents). They cannot exist on their own, and cannot entice with the prospect of adaptation either. They exist in the experimenters’ minds too, and that accounts for them being possibly addressed *to the same objects* they stemmed from. There is a certain rhythm of the process. No monotonic flux is possible. No transformations of ideas either. Science itself bore the testimony thereto. There are but discrete levels of energy in the universe. In fact, the discovery of quantum mechanics was connected with the rejection of the idea of the monotonic distribution of energy in the so-called perfect dark body, i.e. that which emanates its own energy only. Emanation, evolution or whatever the name of the process, must not be monotonic. The principle holds true as to the whole universe. Taking into account the paleontological data we are only justified in stating that some elements added constructively

in a definite manner (order) and definite natures issued, but the very sequence of their existence is but incidental to their being ordered.

Granted the very possibility of monotonic distribution of energy (and of being), the objects would be unknowable to us, as being impossible to grasp and in constant flux. Nothing definite would have presented to our mind. This is only characteristic to any kind of variabilism (relativism) at all.

Aristotle addresses the theory of evolution as presented by Empedocles. Transformism of species resulted in the occurrence of some hybrids of species similar to those of the Greek mythology. But the science created by the Ancient Greeks was meant to resign from mythical thinking for the sake of seizing nature in definite terms.

Aristotle writes (Phys., II. 8, 198b 10-34):

Λεκτέον δὴ πρῶτον μὲν διότι ἡ φύσις τῶν ἔνεκά του
αἰτίων, ἔπειτα περὶ τοῦ ἀναγκαίου, πῶς ἔχει ἐν τοῖς φυσι-
κοῖς· (...)
— ὥστε τί κωλύει οὕτω καὶ τὰ μέρη ἔχειν
ἐν τῇ φύσει, οἷον τοὺς ὀδόντας ἐξ ἀνάγκης ἀνατεῖλαι τοὺς
μὲν ἐμπροσθίους ὀξεῖς, ἐπιτηδείους πρὸς τὸ διαιρεῖν, τοὺς δὲ
γομφίους πλατεῖς καὶ χρησίμους πρὸς τὸ λεαίνειν τὴν τροφήν,
ἐπεὶ οὐ τοῦτου ἔνεκα γενέσθαι, ἀλλὰ συμπεσεῖν· ὁμοίως δὲ
καὶ περὶ τῶν ἄλλων μερῶν, ἐν ὅσοις δοκεῖ ὑπάρχειν τὸ ἔνεκά
του. ὅπου μὲν οὖν ἅπαντα συνέβη ὥσπερ κὰν εἰ ἔνεκά του ἐγί-
γνετο, ταῦτα μὲν ἐσώθη ἀπὸ τοῦ αὐτομάτου συστάντα ἐπι-
τηδεῖως· ὅσα δὲ μὴ οὕτως, ἀπώλετο καὶ ἀπόλλυται, κα-
θάπερ Ἐμπεδοκλῆς λέγει τὰ βουγενῆ ἀνδρόπρωρα.

ὁ μὲν

οὖν λόγος, ᾧ ἂν τις ἀπορήσειεν, οὗτος, καὶ εἴ τις ἄλλος
τοιούτός ἐστιν· ἀδύνατον δὲ τοῦτον ἔχειν τὸν τρόπον.

We must explain then that Nature belongs to the class of causes which act for the sake of something; about the necessary and its place in physical problems ... Why then should it not be the same with the parts in nature, e.g. that our teeth should come up of necessity — the front teeth sharp, fitted for tearing, the molars broad and useful for grinding down the food — since they did not arise for this end, but it was merely a coincident result; and so with all other parts in which we suppose that there is purpose? Wherever then all the parts came about just what they would have been if they had come be for an end, such things survived, being organized spontaneously in a fitting way; whereas those which grew otherwise perished and continue to perish, as Empedocles says his ‘man-faced ox-progeny’ did. Such are the arguments (and others of the kind) which may cause difficulty on this point. Yet it is impossible that this should be the true view. (Translated by R.P. Hardie and R.K. Gaye).²⁸

The theory of evolution in the form presented by Empedocles seems to be inconspicuous. Probably, the social milieu of Antiquity was not so morally indifferent as to dispose of the

²⁸ <https://ebooks.adelaide.edu.au/a/aristotle/physics/contents.html>

notion of the natural good at all. Otherwise the Ancient Greece would not have been the cradle of Civilization. Still, the possibility of rejecting the finality of nature is always open to those who appreciate the “spontaneity” (which is to say: casualty) rather than the responsibility of actions.

It seems to be extremely difficult to address here the problem of finality in Aristotle at length as the entirety of his philosophy is marked by the concept of things being ordered both intrinsically and extrinsically. Let it suffice to quote Thomas, who observed that e.g. mutants are but a narrow margin of the laws of nature. The existence of the margin is the effect of nature being not a monolith and some particular natures conflicting with each other. The harmony in the conflict appears nevertheless.

Analogically, a particular science addresses but an aspect of nature. But on the other hand, the finality dominates. If the contrary were the case; if the accidental and chance prevailed, the finality itself would have been but a narrow margin contrasted with the vast background changing chaotically. Naturally, nothing of the sort is visible.

Aristotle claims that nature is fragmented *relatively* only, and an “evolution” is a continuous process (a fact is an “evolution”) that issues from the privation of a form and ends in attaining it. So, there are as many “evolutions” as many facts are, and the fact perceived empirically that some species adapt to the changing circumstances is but such an example of “evolution”. Aristotle claims that a fact (of motion) is a continuous process, nonetheless defined – as to the beginning and the end, which, as has been said, accounts for the possibility of knowing it (grasping something that otherwise might have appeared elusive). Thus, facts (“evolutions”) are defined as to their starting point and their end. Nature exists in the definite way only. Still, it comes to existence *tending* to what it is not yet; to its end, i.e. acting teleologically. Finality of nature is apparent to any unprejudiced eye. Elements are what they are in relation to what they constitute:

There is a striking contrast between the durability of our body and the transitory character of its elements. ... [Man] accommodates himself, much better than the other animals do, to the changing conditions of his environment. ... The physiological processes, which are the substratum of inner time, always incline in the direction leading to the longest survival of the individual.... (1)

The organs are correlated by the organic fluids and the nervous system. Each element of the body adjusts itself to the others, and the others to it. This mode of adaptation is essentially teleological. ... the physiological processes appear to associate together in view of the end to be attained. The existence of finality within the organism is undeniable. Each part seems to know the present and future needs of the whole, and acts accordingly. The significance of time and space is not the same for our tissues as for our mind. The body perceives the remote as well as the near, the future as well as the present. (3)

Adaptive functions assume as many different aspects as tissues and humors encounter new situations. They are not the particular expression of any organic system. They are definable only by their end. Their means vary. But their end always remains the same. Such an end is the survival of the individual (11)

In conclusion. Adaptation is a mode of being of all organic and mental processes. It is not an entity It is essentially teleo-logical. Owing to the adaptive activities, the organic medium remains constant, the body conserves its unity and recovers from diseases. It is for the same reason that we endure, in spite of the fragility and the transitory character of our tissues.

Adaptation is as indispensable as nutrition. In fact, it is only an aspect of nutrition. However, in the organization of modern life no account has ever been taken of such an important function. Its use has been almost completely given up. And this neglect has brought about a deterioration of the body and of the mind. This mode of activity is necessary to the complete development. (14).²⁹

It is pivotal for science to determine stages and levels of the cosmic structure. True, motion as such is continuous. It is *an* evolution. But the point of departure is definite and the end also. So, evolution is of restricted extent only. It does not apply to the structure of the universe as such. This structure is stratified of diverse facts and natures. Time is originally relevant for particular facts. If we take into account the definite outset and the definite outcome of each particular fact, time will appear to us but an accessory of the cosmic process, i.e. related to it but indirectly. The very process cannot therefore be described adequately in terms of time only. In everyday language, “hard times” might exist and in literature perhaps, too. But, to be precise, it are only people that can be hard on each other. People do not live in “hard times”, they make them hard themselves. One might try and personify time in the words: *Tempora mutantur, nos et mutamur in illis* (Times are changed, we also are changed with them), but the *real* time is relative to human actions and *secondary* to them, not vice versa.

An excessive reaction for the fragmentation of the world and science was holism. The stance was obviously unscientific, but bears the testimony to some flaws in the Scientism’s idea of time and motion. Moreover, for all its being an offspring of pure imagination it resulted from some conclusions of quantum mechanics and was, to some extent at least, a consequence of how John Steward Bell understood it. The problem will be addressed in CHAPTER VII. 5; 6.

Aristotle was far from claiming that everything in the world is connected *indiscriminately*. Things are connected indeed, but in the *definite order*, and a segment of the order can be adequately grasped by a science, provided the validity of its statements be restricted but to this segment of the world. Naturally, it might be attempted to grasp the totality of the structure if a certain discipline is preserved. A disciplined inquiry can advance both towards the elements and the boundaries of the world. If the former is the case, the elementary structure of the “atoms” of experience is discovered, and the cognizance of the “atoms” of the universe comes subsequently. The elements add constructively, which is only possible if one of them is an act, and the other is a potency. So a given elementary structure of form and matter, can become a matter too (*materia secunda*) with respect to a more perfect form. The elements add in the definite manner, which is to say, they add in the way a form is “added” to a matter.

The fact that totality of the world is structured in such a way adds up to saying that some elements can be incidental to each other, viz. whose Future Cones do not overlap. However, there is but one Future Cone of the world as such and, consequently, all events, at least indirectly, contribute to the perfection of the universe. To express it otherwise: there is but one ultimate substratum (*materia prima*) and but one form of the whole, which Varro

²⁹ Alexis Carrel, *Man, the Unknown*, Chapter VI. ADAPTIVE FUNCTIONS.

called the soul of the universe and granted with divine honor. No such deification occurs in Aristotle as the structure of the world is founded on relations only and is of less entity than any of the elements of the universe. A blade of grass is “more real” than the order of the universe. But on the other hand, the fact of the existence of this order is pregnant with meaning. It points to the outer side of the universe.

The structure of the universe was believed to be occasioned from some simple elements amassed at random. Some points might add on equal terms if a figure defined as a set of points is to be constructed. Moreover, any continuous set of points is but such a figure. It was believed the natural things are but such like figures. Similarly, some “points” would have been depicted on the retina of human eye and the outline contrasted with the dark background. The sensual perception was believed by Lenin to be the photographing of reality. However, there is no evidence that geometrical optics is essential for the visual perception as the phenomena of interference and diffraction occur and it is hardly believable that such like phenomena would not have been used by nature. If hearing apprehends interference indeed, sight, most probably, does so also.

No doubt, for an animal to survive, it is essential to contrast an “outline” with a “background”. For an animal discerns the useful and harmful, and the perfection of the discretion is proportional to the ability to survive. An animal’s body is structured in a definite way. That the structure might be maintained and fostered, the proportion of the outer objects to it must be perceived. Nourishment no doubt comes into the structure of a living body. Still, that it might add constructively to this structure, the definite proportion of the elements of a body and of the environment must be known first. If an animal’s body is structured in the definite manner, the analogous perception of the structure of the elements of the world is to be perceived. That the body might not fall apart, an animal must gather information as to the elements possibly important for its survival.

The spontaneous tendency toward formation of the organs by their constitutive cells, like the social aptitude of the insects, is a primary datum of observation. It cannot be explained in the light of our present concepts. An organ builds itself by techniques very foreign to the human mind. It is not made of extraneous material, like a house. Neither is it a cellular construction, a mere assemblage of cells. It is, of course, composed of cells, as a house is of bricks. But it is born from a cell, as if the house originated from one brick, a magic brick that would set about manufacturing other bricks. Those bricks, without waiting for the architect’s drawings or the coming of the bricklayers, would assemble themselves and form the walls. They would also metamorphose into windowpanes, roofing-slates, coal for heating, and water for the kitchen and the bathroom. An organ develops by means such as those attributed to fairies in the tales told to children in bygone times. It is engendered by cells which, to all appearances, have a knowledge of the future edifice, and synthesize from substances contained in blood plasma the building material and even the workers. These methods used by the organism do not have the simplicity of ours. They appear strange to us. Our intelligence does not encounter itself in the intraorganic world. ... For the moment, we cannot understand the mode of organization of our body and its nutritive, nervous, and mental activities. The laws of mechanics, physics, and chemistry are completely applicable to inert matter. Partly, to man. The illusions of the mechanists of the nineteenth century, the dogmas of Jacques Loeb, the childish physicochemical conceptions of the human being, in which so many physiologists and

physicians still believe, have to be definitely abandoned. We must also dismiss the philosophical and humanistic dreams of physicists and astronomers. Following many others, Jeans believes and teaches that God, creator of the sidereal universe, is a mathematician. If that is so, the material world, the living beings, and man have been created, obviously, by different Gods. How naive our speculations! Our knowledge of the human body is, in truth, most rudimentary. It is impossible, for the present, to grasp its constitution. We must, then, be content with the scientific observation of our organic and mental activities. And, without any other guide, march forward into the unknown.³⁰

Apparently, the animal instinct is *a* discrimination. It is an “organic mind” in the Carrelian sense. A plant shoots out its sprouts almost at random (as phototropism is incomparably less informing than sensual perception is). An animal is guided by the sensual perception and the image of the object to be pursued or avoided. Human environment is apparently more spacious. But it is not the matter of *extent* first of all. It is the matter of *specific difference*. Man seeks for the “nourishment” further than an animal does. But “further” is rather the *outer side* (generally; philosophically speaking); what is beyond space and time and *must be* so. Animals put up with the perception of *the given*. Humans do not. They analyze it so as to reach further.

Human understanding must be at least as perfect as that of animals. The animal instinct works almost perfectly. Still, there no such perfection to be found in humans. Children are guided by a kind of instinct for some time, but dispose of that kind of cognition when growing up. Still, at the same time, viz. at the time when the adult mode of perception prevails, an astonishing ability of adaptation to various environments occurs. Man’s activity “evolves” toward a certain objective indeed. Man is incomparably more able to adapt to various circumstance than any animals are. The reason is to be accounted for. According to Thomas, instead of the animal instinct man is endowed with an immaterial power able to transcend spatio-temporal circumstances; he is endowed with the intellect. Thus, the scope of human existence passes over all the bodies, and possibly the totality of the material world too. It reaches to the Transcendent Cause thereof. The passing-over was the central theme of Plato’s *Phaedo*. Man must not be tethered to the earth. Human nourishment is but truth. Human environment is broader than any material environment whatever. The source of human life is to be found beyond the spatial-temporal; beyond the boundaries of the material universe.

All possible boundaries of human existence should be passed over. The desire, however, happened to be combined with the desire to possess all the given at the same time. The abhorrent attempts to subjugate nature and to tyrannize it in the way proposed by Hegel and Marx issued. Moreover, a man can try to foil the desire for the cognizance of the Ultimate End and try to deify some *means* leading to It.

There is but one means to avoid such like snares. It is human intellect that enables to trace back the elementary structure of the universe and get hold of a firm footing for the pursuit of the Ultimate.

The first Chapter of *Physics* by Aristotle gives such an analysis. The text was not credited with the attention it deserves, nonetheless. The Aristotelian *Physics* was labeled as

³⁰ Alexis Carrel, *Man, the Unknown*, Chapter II, 13.

concerned with qualities instead of the only desirable concern with the quantities of the material world. Still, the first Chapter of Physics speaks of relatives; not about qualities as such. Instructive as the distinction between the quantum and quale might prove to be, it is not essential nevertheless. For the problem of defining things is not pivotal after all. The problem, if seized in a broader epistemological context, is far from being that of logic only. Let us analyze the definition of man: animal rationale. Apparently the “rationale” in the definition is a quality. Still, its being just the quality is connected with how we get to know things, and how we define them subsequently. For the quality in question is no doubt a formal aspect of the defined. The human understanding shares the common character of all physical beings if seized analogically. An animal attains its perfection after a few years after its birth. Now, the concepts are “conceived” in human mind indeed. And the process they are analyzed is similar to maturing them. First they are known potentially only, then, they are known along with their formal components (e.g. in definitions). So, the problem of human cognition seized in the most general terms is that of attaining the perfection after seizing some principles whereas knowing things imperfectly first (Physics, I, Ch. 1).

The problem of defining was addressed in Plato’s Sophist. Falling prey of mathematicism Plato ended up dividing and adding “values” expected to constitute natures. Thus, the problem of defining overlapped, in a sense, with the problem of the elements thought to be constitutive of the world. Nowadays, we know that some values (in physics) are not additive. The same is the case with defining things: the differences (formal aspects only valuable for science) cannot be added indiscriminately. True, a child can add points in such a way, and no matter how chaotic a drawing, *some figure* will issue. It is not the case with natures. Its elements are not *equally formal*. They can add only as a potency to act does. Similarly, when defining things we grasp genera first, and subsequently, out of this potential cognition some formalities of being emerge as grasped in definitions. However, it will be impossible to define things at all, unless some primitive direction be given by nature itself. We know *any* things only because of them being actual, i.e. perfected by some forms, but we know *those* things only because the formal in them actuates the material. Consequently, the Aristotelian Physics is not that much about grasping things in qualitative terms but rather about analyzing the primitive structure of phenomena; i.e. those of the moving and the moved; of the actual and the potential. Now, the formalism of mathematics provides no adequate insight into the complex formalities of the real world. This is the real difference between the Aristotelian and Galilean physics.

Human intellect presents a firm footing for man’s existence and freedom. There are certain principles that constitute this footing. Two sciences: Physics and Metaphysics are concerned with the primitive data of cognizance; with what is most obvious in it. Physics addresses the problem of the sensually obvious. Motion cannot be denied by any sound mind. The first Chapter of Physics by Aristotle presents a reductive analysis of this obviousness. The analysis can be carried out by anybody himself, but Aristotle outlines the scheme.

Motion, in general, always appeared to be a phenomenon difficult to grasp. Mathematical analysis thereof (calculi) is an *exact* one. It is *an analysis*; it is *a plain* analysis. The analysis, however, might appear too simple if tried to be adopted to more complex forms of motion; for the motion that actuates elementary bodies is the least formal to be found in nature. Animals (and their actions too) are formal more intensely than elementary objects (are

not “machines” as Descartes believed). All the more, human actions cannot be defined in terms of the elements which constitute their bodies. Every particle of the human body might have a certain trajectory of motion, but human acting is not a sum of those trajectories. So, it is about analyzing motion in possibly most general terms. Every such analysis entails, in fact, a principle effective therein. For even those (as Eleatians) who denied the reality of motion can be argued with. Still, it is not Physics that provides the argumentation. For it is human intellect that analyses motion and Metaphysics is the most intellectual of sciences. Animals, for all we know, take motion for “obvious” in their own way. Humans analyze it. Animals discern between the advantageous and disadvantageous as things in motion are obviously such. Animals’ “good” and “evil” are of the nature restricted to some particular realm of existence. Now, human good and evil is not of restricted value at all. The intellect is able to contrast good and evil in absolute terms. It is able to name the formal as being and the privation as nonbeing. It is able to discern between what *is* (simply speaking) and what *is not*. It is able to discern peremptorily between truth and falsehood. The non-contradiction principle is the most obvious principle of human understanding needed thereto. Any statement at all, provided the responsibility for uttering it is undertaken, entails the use of the non-contradiction principle. This is shown in Book IV of Metaphysics by Aristotle.

The first principles provide the firm footing for all activity that could possibly issue. To the contrary: the lack of them is responsible for the atrophy of human life.

3. Values

Since the beginnings of its existence, human gender has been trying to define its existence in the world of crude nature. The simplest way to do this is to contrast them, which might be, indeed, of some *provisional* worth. Sadly, two ideas have been *radically* opposed nowadays: that of nature and that of values. Natural law has been incriminated and rejected for the sake of the “better” world expected to be built by humans emerging out of the crude, natural state of existence. However, it is an undeniable fact that human cultures (“worlds”) differ significantly, and the values elaborated by them must so accordingly. Thus, human cultures happened to be opposed no less vigorously than each of them was opposed to what it emerged from. In purely biological terms, the nature of man is the same, for begetting fertile progeny makes for those begetting to belong to the same species, the human species included. Still, the begetting did not seem to satisfy the aspirations called by some spiritual in man. The spiritual begetting sounded for them an oxymoron.

The values, if overestimated, are bound to raise unpassable barriers amongst the people of various cultures. It was believed that just one system of values can be persuasive enough to be tamely accepted by all people, and the Kantian idea of Eternal Peace includes such a notion. Practically, however, this “peace” was tried to be forced upon the other. Sophisticated as it might have appeared, this German thought proved to be not persuasive after all; the strength of argument yielded to the Prussian argument of strength (*Macht geht vor Recht*).

The endeavor of unification must be doomed to failure, unless a continuation of all the possible sets of values on the natural basis of humanity is shown and intellection instead of force adopted. Although the reintegration might seem desirable, the line dividing humans might show up in the circumstances both unexpected and detrimental for mankind.

According to Aristotle, two principles are effective in the world we live in: the will and nature. Distinct as they really are, they are not as fiercely opposed as in Kant, for whom there was an irreconcilable rift; a gap yawning between the sphere of human subjectivity and nature. What, then, does the difference consist in? Is man doomed to be split between the material and the spiritual in him; the latter being so much culturally differentiated as to render the dialogue amongst people of different cultures impossible? One system of values might be assessed as “superior” to the other and tried to be forced upon those deemed inferior. The reaction that is bound to come is as vehement as brutal and can be compared with that of a cornered animal. “Barbarians” dared to question the superiority of the “Western Values”. What, then, does the superiority consist in? Are Europeans to be deemed “supernatural” as successfully having mastered nature, which was not the case with those “inferior” ones? Now, it was according to Avicenna that all human intellection was “supernatural”. The “Western Values” are, in fact, an heir to *this cultural* tradition. “Barbarians” impugn not that much the West Culture as rather the way the Arab philosophers tried to “rationalize” their own religion. It was about misinterpreting it. Kantianism was such a “misinterpretation”.

In “Heart of Darkness”, Joseph Conrad remarks that in the 19th century colonizers were regarded by the native inhabitants of Congo as “supernatural beings”. Perhaps, there was a real reason. For the uniqueness of the European Civilization is not to be sought in mastering nature (which, in fact, ends up with destroying it, nowadays), but rather in its roots. The Christian Revelation accounts for the beginnings of Europe being “supernatural” in a sense. Naturally, those labeled by Conrad ironically as “missionaries” were not willing to admit the fact. They preferred discount their alleged “superiority” (their “Christianity”) with purely material objectives in mind. Man-trafficking (the deplorable; shameful historical fact, which recurs in modernity) is not “Christian” just because being committed by Christians. St. Paul condemns the sin severely.

To Avicenna’s mind, humans are naturally predestined to participating in/of common consciousness (Dator *formarum* of the medieval translations of his *Al Shifa*). Obviously, some might be unwilling to participate nonetheless, and if so, must be called barbarians. But the point is that formerly we ourselves (Europeans) had been barbarians until we stood before the Incarnated Wisdom. Nay, the Sages were called so because of adoring (προσκύνειν) the One Who is Wisdom itself. (Mt 2. 11: “And entering into the house, they found the child with Mary his mother, and falling down they *adored* him; and opening their treasures, they offered him gifts; gold, frankincense, and myrrh.”). The barbarians have become sages since the pathway to wisdom was revealed to them. The European Values are superior only if regarded as to whence they originated some two thousand years ago.

But on the other hand, we share the same human nature and expect to be given new perspectives of life from our like. Now, the problem is that the other (in this case) can both show and obstruct the perspectives (The Other – with capital letter – we reflect on if searching for our identity). Normally, if speaking of the valuable, one happens to be satisfied with

his/her own value and this just proportionally to how valuable an object spoken of is. Notwithstanding how sincerely and honestly trying to “deny oneself” man is bound to boast even the very denial and thus extoll his/her own value. “Our best actions are ordinarily stained and corrupted by the ground of evil which is so deeply laid up in us”.³¹

Movement towards an image as such is referred to the thing represented by the image: yet not every movement towards an image is referred to the image as such, and consequently sometimes the movement to the image differs specifically from the movement to the thing. ... For though ... man is made to the image or likeness of God, yet in showing reverence to a person, one does not always refer this to God actually.³²

Προσκύνην is the act God must be worshiped only (cultus latriae). No man can demand it for himself, although some demanded it from the others indeed.³³ Now, there is but one *pure man* (a Woman) who *never demanded* it for Herself. That is why a special kind of worship is to be offered to Her.

Hyperdulia is the highest species of dulia taken in a wide sense, since the greatest reverence is that which is due to a man by reason of his having an affinity to God.

Further, the mean differs specifically from the extremes, as pale differs from white and black. Now hyperdulia is apparently a mean between latria and dulia: for it is shown towards creatures having a special affinity to God, for instance to the Blessed Virgin as being the mother of God. Therefore it seems that there are different species of dulia, one being simply dulia, the other hyperdulia.³⁴

³¹ Louis-Marie Grignon de Montfort, Treatise on the True Devotion to the Blessed Virgin , transl. by F. W. Faber, London 1863, p. 52.

<https://librivox.org/a-treatise-on-the-true-devotion-to-the-blessed-virgin-by-louis-marie-grignon-de-montfort/>

³² Summa Theol., II-IIae, q. 104, a. 3 ad 3. The Summa Theologiae of St. Thomas Aquinas, Second and Revised Edition, 1920, Literally translated by Fathers of the English Dominican Province, MARLÆ IMMACULATÆ - SEDI SAPIENTIÆ.

³³ Contra Gentiles, lib. 3 cap. 120 n. 23. Quia ergo indebitum est quod latriae cultus alteri exhibeatur quam primo rerum principio, ad indebita autem incitare non est nisi rationalis creaturae male dispositae: manifestum est quod ad praedictas indebitas culturas instinctu Daemonum homines provocati fuerunt, qui *se etiam loco Dei hominibus colendos exhibuerunt, divinum appetentes honorem*. Hinc est quod dicitur in Psalmo: omnes dii gentium Daemonia.

³⁴ Summa Theol., II-IIae, q. 104, a. 4 ad 2.

Summa Theologiae III, q. 25 a. 5 co. Licet autem creaturae insensibiles non sint capaces venerationis secundum seipsas, creatura tamen rationalis est capax venerationis secundum seipsam. Et ideo nulli purae creaturae rationali debetur cultus latriae. Cum ergo Beata Virgo sit pure creatura rationalis, non debetur ei adoratio latriae, sed solum veneratio duliae, eminentius tamen quam ceteris creaturis, inquantum ipsa est Mater Dei.

There can be no doubt that “barbarians” could accept this truth more willingly than any “humane” one. Bishop Fulton Sheen spoke of it in the following:

Missionaries in the future will, more and more, see that their apostolate among the Moslems will be successful in the measure that they preach Our Lady of Fatima. Mary is the advent of Christ, bringing Christ to the people before Christ Himself is born. In any apologetic endeavor, it is always best to start with that which people already accept. Because the Moslems have a devotion to Mary, our missionaries should be satisfied merely to expand and to develop that devotion, with the full realization that Our Blessed Lady will carry the Moslems the rest of the way to her Divine Son. She is forever a “traitor”, in the sense that *she will not accept any devotion for herself, but will always bring anyone who is devoted to her to her Divine Son*. As those who lose devotion to her lose belief in the Divinity of Christ, so those who intensify devotion to her gradually acquire that belief.³⁵

The ultimate perspective of human life cannot be appropriated by any human authority. Human reason as such is natural and not to be credited with any supernatural power.

For all our spiritual desires, we are material beings nonetheless. But if so, it is to be shown *rationally* how the two spheres mentioned above can be possibly reintegrated. Let us analyze the mere *possibility* i.e. the *natural aspect* of the problem. The problem of the Christian Values (outlined above) will be addressed subsequently.

The will is (the power of) the intellectual desire. Now, according to Thomas, there is an important difference between the intellect and nature. Natural tendencies compete with each other, and what Darwin called “the struggle for survival” might be *an aspect* of the nature divided so. The “struggle” takes place in those acting irrationally and seems a salient feature of nature to those who observe nature without seeing the rational order dominating over divisions. Nature is not a monolith; in humans, there are different principles of actions (e.g. we digest nutrients not thinking about it *at the same time*). In nature, the death of an herbivore is “good” for a carnivore. Now, it is proper to the human intellect to “reconcile” these competing desires in the abstract ideas of natures. The totality of them forms what was called by the ancient Greeks cosmos – the order.

We read (De veritate, q. 2 a. 2 co.):

Sciendum igitur est, quod res aliqua invenitur perfecta dupliciter. Uno modo secundum perfectionem sui esse, quod ei competit secundum propriam speciem. Sed quia esse specificum unius rei est distinctum ab esse specifico alterius rei, ideo in qualibet re creata huiusmodi perfectioni in unaquaque re, tantum deest de perfectione simpliciter, quantum perfectionis in speciebus aliis invenitur; ut sic cuiuslibet rei perfectio in se considerata sit

Note, therefore, that a thing is perfect in two ways. First, it is perfect with respect to the perfection of its act of existence, which belongs to it according to its own species. But, since the specific act of existence of one thing is distinct from the specific act of existence of another, in every created thing of this kind, the perfection falls short of absolute perfection to the extent that that perfection is found in other species. Consequently, the perfection of each individual

³⁵ Bishop Fulton J. Sheen, Mary and the Moslems, from The World’s First Love.

imperfecta, veluti pars perfectionis totius universi, quae consurgit ex singularum rerum perfectionibus, invicem congregatis.

Unde ut huic imperfectioni aliquod remedium esset, invenitur alius modus perfectionis in rebus creatis, secundum quod perfectio quae est propria unius rei, in altera re invenitur; et haec est perfectio cognoscentis in quantum est cognoscens, quia secundum hoc a cognoscente aliquid cognoscitur quod ipsum cognitum est aliquo modo apud cognoscentem; et ideo in III de anima dicitur, anima esse quodammodo omnia, quia nata est omnia cognoscere. Et secundum hunc modum possibile est ut in una re totius universi perfectio existat. Unde haec est ultima perfectio ad quam anima potest pervenire, secundum philosophos, ut in ea describatur totus ordo universi, et causarum eius; in quo etiam finem ultimum hominis posuerunt, quod secundum nos, erit in visione Dei, quia secundum Gregorium, quid est quod non videant qui videntem omnia vident? Perfectio autem unius rei in altero esse non potest secundum determinatum esse quod habebat in re illa; et ideo ad hoc quod nata sit esse in re altera, oportet eam considerari absque his quae nata sunt eam determinare. Et quia formae et perfectiones rerum per materiam determinantur, inde est quod secundum hoc aliqua res est cognoscibilis secundum quod a materia separatur. Unde oportet ut et illud in quo suscipitur talis rei perfectio, sit immateriale; si enim esset materiale, perfectio recepta esset in eo secundum aliquod esse determinatum; et ita non esset in eo secundum quod est cognoscibilis; scilicet ut, existens perfectio unius, est nata esse in altero.

thing considered in itself is imperfect, being a part of the perfection of the entire universe, which arises from the sum total of the perfections of all individual things.

In order that there might be some remedy for this imperfection, another kind of perfection is to be found in created things. It consists in this, that the perfection belonging to one thing is found in another. This is the perfection of a knower in so far as he knows; for something is known by a knower by reason of the fact that the thing known is, in some fashion, in the possession of the knower. Hence, it is said in *The Soul* that the soul is, "in some manner, all things," since its nature is such that it can know all things. In this way it is possible for the perfection of the entire universe to exist in one thing. The ultimate perfection which the soul can attain, therefore, is, according to the philosophers, to have delineated in it the entire order and causes of the universe. This they held to be the ultimate end of man. We, however, hold that it consists in the vision of God; for as Gregory says: "What is there that they do not see who see Him who sees all things?" Moreover, the perfection of one thing cannot be in another according to the determined act of existence which it has in the thing itself. Hence, if we wish to consider it in so far as it can be in another, we must consider it apart from those things which determine it by their very nature. Now, since forms and perfections of things are made determinate by matter, a thing is knowable in so far as it is separated from matter. For this reason, the subject in which these perfections are received must be immaterial; for if it were material, the perfection would be received in it according to a determinate act of existence. It would, accordingly, not be in the intellect in a state in which it is knowable, that is, in the way in which the perfection of one thing can be in another.³⁶

³⁶ Questiones Disputatae de Veritate, TRUTH by Thomas Aquinas Questions 1-9 translated by Robert

Reintegration Thomas is speaking of has the purely intellectual and personal dimension, contrary to the Hegelian *Versöhnung* that took place on the level of Civilization and was forced upon individuals (their desires). Hegel deemed the reconciliation necessary to abolish (*aufheben*) the Kantian dualism. For the Kantian morality was that of the self-restraint (compulsion) and the allegedly spiritual did not differ in fact from one animal desire being suppressed by another one. Hegel believed that State as such (the ideal state in which values were institutionalized) did not share the characteristics of the animal in man.

In the aforementioned personal (Thomasian) approach, various beings are subsumed under the same genus (genus methodologicum; the subject matter of a science) so as to reintegrate the scattered data of experience into one coherent system of knowledge. The problem is how capacious the system in question might be and how well applicable to human nature. Perhaps, it is not applicable to the sensual nature after all. Perhaps, the system is only sustainable for the intellectual nature. Human desires which *follow* the intellection need not “compete” in the way the sensual in man (most probably) has to. We *want* something *for us* (if interested); we *will* something *for its own sake*. It is, thus, all about due order: the peace always desirable is to be found in the human *person first*, and then possibly shared with others. *The order must not be reversed*. The “motion” of the human will follows the intellection (is opposed to it so); the rest (the peace) is to be found in contemplating the crude nature in the way Thomas describes.

The problem is that of science remaining what it must be (determined), being, at the same time, as universal as only possible. But not only this. The problem of being universal is that of being so to the extent of entering into the areas otherwise called practical. By extension – as Thomas puts it – the theoretical intellect becomes practical. In *motivates* the will.

Mathematics provides a kind of reintegration. Still, the subject matter thereof is of a restricted value after all. For it is but *a category* of being (*viz.* its quantity) that is envisaged in mathematics. A possible solution (and adopted by Descartes) was to extrapolate the mathematical thinking onto the whole spiritual sphere of man. Thus, the reintegration becomes that of forming the idea of human subjectivity in which all the variety of objects wanes and their borders are blurred, for the only formal in them is their quantity.

Consequently, all that could not be grasped in quantitative terms was regarded as unscientific, and especially the natural qualities of beings. No qualities, no finality was to be expected to be found in nature. “More” and “less” as applied to human existence, and “set of values” in particular, savor of mathematicism no doubt. Especially, the latter expression recalls the set theory.

Still, some things seemed to be “good” nonetheless, at least in the sense of them being profitable. The notion of the natural good was disposed of and the notion of what is good with *respect* to humans appeared instead. According to Thomas, things are so if understood as useful, but then they are, in fact, good incidentally only. Now, no matter how obstinately the

W. Mulligan, S.J. Chicago: Henry Regnery Company, 1952.

<http://dhspriority.org/thomas/QDdeVer.htm>

quantitative thinking was clung to, things were expected to be at least inter-subjectively valid, to the effect of being more than just useful.

An acknowledged value might be deemed that of the contact with *uncontaminated* nature. (Hegelianism was a kind of “pollution”). The contact might *seem* profitable, but was in fact desired for its own sake. Albeit it was forbidden by Kant to regard nature as beautiful and good as such, a real source of vital activity indispensable for the *rational* being has loomed in it. The fact might seem non-understandable for Kantians, as rational in man was associated with culture only. For them, if seeking for the contact with nature, man testifies, and perhaps shamefully so, that some part of his nature must be given some condescension. The mythical Antaeus regained his vital forces every time he was thrown onto the Mother-Earth. The contemporary man is no longer a Giant; he is rather a dwarf, either ashamed of *his* nature or adoring the *irrational* nature (this adoring is contrary to regaining one’s own dignity; it might be prostration if an object adored is unworthy). The dualism Kant introduced paved the way for regarding nature as something irreconcilable with reason. The mythical returns in a new shape, but the way Greeks *rationalized* the myths eludes the comprehension of those turning to “the earth”. The formal order of nature pointing out to the Ultimate Form (the transcendent one) happens to be disregarded. But the human animal nature should neither be ashamed of nor adored, as the animal in man is *rational* (integrated of the sensual and the intellectual): reasoning takes place in time and space, but transcends it nonetheless.

The immediate contact with nature has been, after Hegel, labeled as the unworthy of a highly civilized man. Consequently, it has been believed that pleasure might be drawn from the contact with nature; but spiritual joy – connected with the perception of the beauty and finality of nature – is an oxymoron. Perhaps, it is all about the “immediateness”. Maybe, the sensual in man cannot contact with nature “immediately” and closely enough. Perhaps, not even people can be close enough to each other if the intellectual principle in them is not at work. The disintegration mentioned above might befall each and every of us.

In the Kantian society, people might be *socially obliged* to feel satisfied and to manifest it. Some “specialists” are trained for teaching people what they *should feel* so as to live authentically (“be happy”). But the very necessitating of “being happy” is just a kind of compulsion. According to Aristotle, the perception of the beauty of nature triggers a disciplined inquiry on nature. But the perception of pleasure cannot be taught like any other discipline: the principle cannot become the principled. Aristotle and Thomas pointed out to *the principle*; to whence the contact originates; to the (theoretical) contemplation of the natural world. Science was not credited with the power to “enchant” the animal in us, for science, according to Aristotle, is about finding the immediate (principle) of any particular statement. Obviously, the principle is only immediate if intellectual. The sensual is always mediated. Our desires can be reconciled with nature if rational only.

In the mathematical paradigm of science, an analogy exists between the scientific and moral activity of man. An experimenter testifies the validity of a theorem acting with an operator on an object about to be known experimentally. Similarly, an existentially engaged individual testifies the authenticity of the experienced values if acting in the material world. In fact, the values should be advertised so. The problem of *priority* arises. Is morality to be fashioned after the model of the economic growth and the prospect of accumulating useful goods? Is it an *accessory* of material development? Or perhaps just the opposite is the case.

Albeit unhidden, the inner spiritual strength of man results in creating the social welfare, but in fact *incidentally only*, as the real goods are incomparably worthier than those material ones. In fact, two genera are opposite: the good as such (*bonum honestum*) and the useful good (*bonum utile*). The latter can be measured, no doubt. Is, then, the moral activity to be grasped in terms of “more” and “less”, too? If so, then the term of “more” is to be seized in the terms more general than those mathematical ones. The “*more*” is a means to extricate oneself from any existential impasse; finding the way out between what seemed to be irrevocably opposite and impossible to get through. Means (of intellection) are not a token of meanness of personality; they are in-between extremes which hamper our progress. The way out is “mediocre” as steps are to be carefully measured. The ancients called the ideal “*Aurea mediocritas*”.

The statement that the virtue consists in the means between two extremities deserves a closer attention. For if the extremities were taken as opposed materially (spatially), then the means could be apparently associated with a privation (of an end) and the alleged virtue with meanness. To the contrary, the notion of value would imply a certain tension towards the unknown possibilities and seem to open some new prospects for human existence.

For the sake of clarity, let us assume both extremities mentioned above as just two persons opposed e.g. when meeting. Obviously, justice consists in finding what is between them both, which can be at least *imagined* spatially. Analogically, breaching one’s integrity might be pictured plastically, too. However, a means between them cannot be understood as a sheer compromise between two struggling egoisms. It was believed that at least in the economic sphere egoisms could prove as effective as righteous. Hence, the notorious saying: “the greed for the lack of a better word is good”. Taking into account the economic aspect, we could thus assess value of the material goods about to be exchanged. Moreover, the material value could, as it seems, be taken analogically and transposed from the realm of economics onto all possible human relations whatsoever. Most probably, when taken generally enough, one could be justified in speaking about moral values, too. Still, the problem of the *objective* values does not seem to be solved. For if seen as an addition to those material ones, they are not assessed peremptorily. True, the lack of the equilibrium between the former and latter leads to plutocracy – pernicious for the welfare of the society. But it is not the welfare that is most important here.

Perhaps the notion of a medium between competing egoisms can be persuasive, but it is by no means clear after all. Taking into account the case of commerce, the simple fact is to be noted that the exchange of material goods is impossible without verbal communication preceding it. An Ersatz of this communication are advertisements; some (producers) beg for buying their products. Still, it is altogether impossible to settle the values without *mutual communication*; without a dialogue. The latter, however, cannot be carried out without listening to each other. It is both the striking and irritating feature of our times that people are becoming less and less prone to listening. The essence of communication is not to be found in a physical phenomenon that is connected with the words resounding (importunately) in our ears, but with what spawns dialogue and abhors twaddle, viz. the inner side of human nature and connected with the intellect. For it is only the intellect that enables us to listen. Consequently, no dialogue is possible without the intellect, and no objective assessment of the values of the material objects that happen to exist between two persons too.

The situation described above is that of what is traditionally called political justice – the commutative one, in other words. It makes the communication of material goods possible. Now, no such a communication is possible without the intellect that can only find the *common* (abstract) notion and subsume objects under the same denominator. Nay, the very word of communication implies the notion of the common; the shared point of view, agreed upon after analyzing the matter intellectually.

Justice is, obviously, the virtue concerning the relations amongst humans. But, taken generally, albeit the expression seems to be already outdated, justice might be understood as righteousness; being just. Now, no one can be just or unjust to oneself, clearly enough. But, if competing egoisms can be spotted in human affairs, the competing (and sometimes contrary) desires can be found in one and the same individual also. Man is a riddle; an abyss, and all the attempts to solve the riddle by means of a simple tool prove only the boorishness of the endeavors. Man can be imagined to be but a body and endowed with the momentum (emotions) analogous to that of an inert material body. Now, even the complexity of human body testifies to the absurdity of such a simplification. A man can be really torn apart between competing desires and the inquietude that issues is the most deplorable effect. Consequently, for the sake of human felicity; for the sake of what the ancient Greeks called ἀταράξια (the undisturbed state of mind) a solution; a means between those contrary desires is to be found. The solution is not easy to imagine. For the nature of the compromise cannot be easily imagined. In fact, it can be *understood* rather, as Aristotle's means (grasped intellectually) is a way-out of any existential impasse, indeed.

Let us try to imagine the competing desires to be just a burden weighting on one's shoulders. Humans can be imagined to trudge laboriously into the future with a yoke imposed. Perhaps the yoke cannot be easily shaken off and those pretending to be able to do it are but imposters. Perhaps, the pursuit of pleasure as such is just a wild goose chase. Perhaps the only way to alleviate the burden is to find *an equilibrium* that makes the advancing into the future easier. Perhaps, the pleasure is but that of an intense activity and impossible to achieve at leisure. Moreover, the loss of energy connected with restoring the disturbed equilibrium is incomparably greater than the advancing into the future itself. Now, the equilibrium is just the ἀταράξια of the ancient Greeks mentioned above. Peace is obviously one of the most precious assets of our life. The peace, in turn, is the consequence of the wisdom, the perfection of the intellect. It is impossible to find it without finding a means that keeps up the buoyancy of life threatened by the desires that can tether a man to the earth. True, an Ersatz can be attempted, and the desires "trained" as animals are. But it is in fact another yoke and perhaps even harder to bear. The equilibrium in general and the emotional one in particular makes the reintegration in question possible and relations with the others run smoothly; be dynamical and creative.

Let us take into consideration the problem of the relations between a man and woman. Obviously, breaching one's integrity (either physically or emotionally) has quite perspicuous sense here. There is *something* between these two persons and susceptible indeed. Generally speaking, friendship, according to Cicero, consists in exchanging (spiritual) goods. Now, it is proper to the relations between a man and woman only that this exchange can be founded upon spiritualizing the *physical* between them both. The physical between them is *capable* of being so. Moreover, the physical medium becomes substantiated only when matured within

an environment that can possibly foster it. The family is meant. It is only family that allows the physical medium between the man and woman to mature and to be substantiated by a new life. All other relations that try to imitate it are bogus. The exclusive mark of the relations between a man and women is that the material medium becomes possibly spiritualized and the possibility of the new life about to come opened. The authenticity of the relations is tested by the very possibility of sheltering (a) new life about to come. It is possible for the spiritual means amongst humans to exist in general, but it is only possible in a family that the material side of human nature might be nobilitated radically. In the Orthodox Church, the groom and bride were crowned as part of the ceremony.

Consequently, there is not only mere justice to be expected in marital affairs. The existence of the new life testifies that something *real* appears between the wife and husband and as concrete as to make the relations substantiated indeed, for a new substance is begotten. The medium; the means between a man and woman becomes “saturated” with a new being after having been prepared previously. A child is a “calling of the future”, but its existence in the real world will be only possible after a special place is created for its existence. Thus, the human begetting is first of all that of communicating the word of promise about to be fulfilled in the future and substantiated in the sense mentioned above. The words are conceived in the intellect and the desires matured. The hopes happen to be nourished along with the relations in question being substantiated.

Thus, it becomes clear that the intersubjective sphere of mutual relations does not need to be restricted to two persons only. Secondarily, it is more than that. It is potentially open to the infinity of the generations about to come. But on the other hand, the same openness is a serious threat posed to the integrity of the elementary relations (those marital ones are to be deemed so). For the relations can be breached from without. The “other side” can be fostered by the elementary relations and the edifice of society founded on the firm basis. But conversely: the society of competing individuals is likely to infringe upon the integrity of the elementary structures of society and make the human integration problematic.

Thus, and indirectly, the problem of not so much intersubjective as rather objective values emerges and those existing in society as such.

Historically speaking, the concept of the real basis for the objective values was connected with the notion of the eternal law existing in the divine intellect. The concept was, however, dropped as soon as the thought of Enlightenment began to prevail. Instead of the absolute order of law rooted in the first Principle of Being (Aristotle, *Metaphysic*, XII, 10) the co-called *volonté générale* (Rousseau) appeared. A human substitute of the eternal law appeared and the individual competing desires expected to be constrained by the general will of humans. Now, the latter might sound like an oxymoron, as the will is personal and rather possibly fostered by (the personal encounter with) the will of God.

If humanity was thus deified, the notion of deity must have had come first. In other words: a reinterpretation of the notion of deity occurred. So, let us analyze the relations between an individual and God as they used to be understood. Albeit not a paradigm, the traditional notion was an ancestry of the Rousseauian concept of morality. The contested one.

The answer to the question in what sense (if ever) man is able revise his/her attitude to God, is tantamount to the reply to the following: In what sense can a value (a means) exist between an individual and God? Traditionally speaking, two *wills* encounter, and the term

seems to be more proper than that of desire as it is preposterous to talk about two egoisms and the term is incomprehensible if ascribed to God. Moreover, it is inconvenient so speak about emotions on the human part here too. For two things to meet, both must share the common nature, and it cannot be save the intellectual desire called the will. The problem is, then, *where* the two wills meet? The “where” constitutes the ontological status of values.

Following the line of reasoning adopted above, we must state that the only way to determine the “where” is to *understand* the nature of the “point” where the two wills face each other, which, however, cannot be done save by the intellect. Consequently, two intellects are to be taken into account as the spiritual “desire” (the will) must follow the spiritual (intellectual) (re)cognition. Naturally, we rather resort to the human counterpart, as the “opposed” one does not seem to be clear enough. Consequently, according to the mode (and object) of our (ultimate) intellectual cognition, the nature of values must be determined.

Still, human intellect might be perfected in various ways and degrees. The intellect of a Nobel-prize-winner is apparently more “perfected” than that of a schoolboy. So, the nature of values is assessed according to various modes the intellect is perfected. Traditionally, the word of light was used for describing the perfection of the intellect. So, values can be seen in the light of, say, the Revelation too, and the Christian values exist in this sense. For a Christian the will of God “proceeded” towards humanity so as to meet the free response of it in order to contract the bond of religion. However, and understandably enough, the problem arises of those who do not see the perspectives of the human existence in *the same light* (of the Revelation), and feel threatened (or at least claim so) if the light is tried to be shed upon their minds too. Moreover, no uncontroversial assessment of the objective values seems to be possible if no *valid* criterion of what is objectively checkable is assumed.

Two things are normally taken into account when speaking about a criterion whatsoever: the beginning and end. To adopt it to the matter at hand: the origin of humans and their end are to be considered. Apparently, things are most appropriately described in terms of their outset and outcome. Human life can be, accordingly, assessed in the terms of its principle and end and the values that are about to order it, too. As to the principle, the natural law must have been considered. Still, the value thereof has been undermined by the concept of humanity emerging out of the depths of the bestial existence. Consequently, the sense of human existence began to be seen, to the contrary, in the end. The idea of the Kantian eternal peace about to be achieved in the future was devised to regard humanity, as it were, “from the future” (the end) and replace the will of God. The obvious problem arose of the insight into that eschatological perspective of man. Not being a “god” Kant believed nonetheless to have some glimpse into the ultimate of man. Consequently, the idea of the divine cognition of the point where humans values “meet” returned, albeit, the “divine” in question had been taken anthropomorphically.

It returned really, for although it seems almost incredible, some had believed to have an insight into the divine point of view. Normally, an individual stumbles upon a difficulty and recognizes his/her own limitations as connected *objectively* with the Other Side. Thomas says that events of our life are signs of the divine will and the latter is thus known indirectly. But some claimed to have a direct insight into the divine will, to the effect that they could determine the nature of values from this point of view. Historically, the names of Gottschalk and Calvin are to be mentioned. The mystery of the divine Predestination was successfully

explored by the Genevan “theologian”. In fact, he was “more” than that; the Genevan Consistory was meant to determine values constitutive for the social (political) structure.

The fact would have been a historical curiosity and of no importance, had not that concept of value been transformed into “mundane” categories. For it is just the Kantian idea of humanity and the Rousseauian one that were meant to satisfy the hankering after the absolute cognizance of human destiny (and the human future). The end was seized in the human terms and, consequently, the humanity deified.

Many spectacular achievements in producing the Paradise on the earth issued, but no one seemed to satisfy the lofty ideals proposed by the thinkers of Enlightenment. In fact, humans proved every now and again to be but beasts they evolved from and to be treated accordingly by the “enlightened”.

Speaking of the formalism and subjectivity in this context is far to less. It is the problem of the future of humanity and its end; the problem of the human hope directed into the in(de)finite. Every time the hope seemed to be satisfied, the aim appeared elusive nonetheless. The idea of the eternal peace savors of the bitter mockery, as it was the Kantian anti-intellectualism that rendered the peace unachievable for man. The peace will be only achievable, and the ontological status of values settled peremptorily, if the intellectual assessment is done, but it was forbidden by Kant.

The same holds true, *mutatis mutandis*, in science. There are not, to be sure, “competing desires” in nature, save in an analogical sense. The Thomasian cause is the means really and the one “between” the moving and moved. Now, cause can be spoken of in four ways, listed both in Physics and Metaphysics. (The Thomasian efficient cause is more than just moving one and the moved more than just the matter). The cause can be grasped as the *middle term* of a syllogism and the peremptory knowledge (generating peace) achieved. Science determines the “points” where natural tendencies of things meet.

Analogically, there is what Thomas calls *sylogismus operativus* – that of acting with the objective (intention) seized in its middle term. No things appear as mundane as not possibly spiritualized when seen in the light of the intention guiding a man through the difficulties of life. Both material things and humans can be regarded as “objects” of natural intention, which, however, in no way impairs the dignity of the latter. For although humans can be obtrusive no less than material objects are, they can, nonetheless, be possibly shown the way-out of that situation. The solution proves to be their own one (interiorized) because seen in the common intellectual terms; which is to say: acceptable to anybody.

The means is known in science first, but in technology and in production, consequently, too. So, there is no such barren an occupation as to be doomed to the status of the profane. The simplest activities can be saturated with the intellectual purport and render human work radically nobilitated. There is no Elysium of the noumenal freedom as devised by Kant, but on the other hand, a safe abode for humans can be found in the very heart of nature and amongst material objects whatsoever, viz. in the empty room amongst them, possibly spiritualized.

Thus, neither nature is taken anthropomorphically, nor humans naturalistically. There is an analogy between the human and the natural and this accounts for our living in the real world and the values being possibly determined (discovered) in the constructive intellectual

dialogue among humans living in the real world. The natural human environment is that of the medium known and about to be saturated with the spiritual content. Human moral actions produce natural effects and cannot be moral without producing those that can spiritualize the space among humans. The room ought to be possibly occupied by individuals and those most vulnerable and weak perhaps first of all. For it is the spiritual in man that opens the room among people to be “habitable”: a possible refuge for human weakness, despair and loneliness. All the other “values” are bound to prove unhuman. They must be so unless the voice of the weakest be heard.

The sense of Horacean *aurea mediocritas* seems to be elucidated. Must humans be mediocrities insisted of living intensely? In fact, humans are doomed to be “mediocrities” after all, at least in a sense. There is a small child (as Plato says in *Phaedo*) in us and looking for a safe abode for his/her weakness, but being a child is not being childish. The abode in question is human family first of all, but the human society that is found upon it subsequently, too.

The voice of the impaired is likely to be ignored. The strong (those emotionally so) are not prone to listen. They relish in the spontaneity of actions. But the preponderance of emotions over the intellect might be destructive to humanity itself. Both individual and social life security might be threatened.

Good is to be regarded as what regulates relations amongst humans. But, as there is something material amongst them too, the question arises to which extent good enters into the physical (material) world. Is doing good the same as changing the state of energy of material objects? Modern extrapolation of the validity of exact science seems to contradict the assumption. The category of quality seems to be more appropriate for describing good. Although the Aristotelian *Physics* is deemed that of qualities and the quality of being rational is a distinctive feature of the supreme nature to be found in the material world (human nature is this), the notion of good is broader: not restricted to any particular category. According to Thomas, it is a transcendental property and thus encompasses all categories of being (quale and quantum are some of them). Thus, the notion of being as such appears.

In *Summa Theologiae*, I, 5, 3 ad 4, Thomas asks the following question: if being is the transcendental property indeed, and belongs to all categories of being, what is its relation to e.g. the category of quantity i.e. that is envisaged in mathematics? There is, according to Scholastics, no good addressed in this science directly. To put it otherwise: there is no real good (for only the honest one can be this), but (possibly idealized) utility only. Being transcendental, good cannot be measured by extension. Some objects might be related to the honest good, but the relation is not spatial.

The human will is *generally directed* to good. However, *particular* decisions are stamped with the mark of *apparent good* and the difference to animals seems to be clear: there are no immoral animals as they accept the objects in their naked directness. It is not the case with humans. It is indispensable to determine what things *really are* instead of putting up with what they *appear to be*. In other words: the most general characteristics of objects is to be seen in the sense of being known – the transcendental character of good.

If it is lost sight of, a gap appears between what is nowadays called “spirit” and “matter”. The gap is in fact unbridgeable. Still, if accepting the division into ten categories as proposed by Aristotle, the insight into the nature of the first of them will be instructive and

possibly revealing the “sense of being”. The category of substance is meant. The word is a composite of “sub” and “stance”. Thomas uses a similar one – that of subsistence and the notion is more precise as it “stands” not only “under” accidents (e.g. of quality and quantity) but under its *own act* of existence too. In other words: the problem of *autonomy* of existence is implied. Subsistences differ according to the level of their formality; and the real “formalism” consists in making out the formal that renders a species what it really is. In particular, a specific difference of man is being rational and the human subsistence not only “stands” under *physical* accidents; it appropriates them in its own way; it “under-stands” them, i.e. accepts them in the non-material manner. This is what makes man what he is; being rational and being able to grasp the totality of objects under one common denominator. In this sense only man is a “measure”.

The problem of humanity is to be solved in the terms proposed. There is something common amongst all human subjects indeed. There is human rational nature and self-conscious of being able to bridge any gaps that yawn among humans.

The gap was believed to be bridged in another manner. Phenomenologists speak of empathy as what can annihilate it.

It seems to be a mark of humanity indeed to share one’s interests with the others. Still, is sharing all sentiments and convictions humane too? What about those wrong or downright wretched ones? The problem is, then, how far the empathy might be pushed forwards without doing harm either to the pitying or to the pitied.

Pitying the suffering *seems to be* unconditionally good. Still, an addict is suffering too. What, then, am I expected to share? Her/her attitude towards life, which brought him/her to the brink of non-existence, or rather the hopes as to the possibility to turn him/her back from the *wrong* way? What does it mean to understand him/her?

Nobody likes being contradicted just for the sake of being brought down. Are, then, people not to be contradicted at all, for the sake of *pure* humanity? How indulgent should we be? If the indulgence was simply unconditional, then, all evil – both physical and moral – should be accepted. That adds up to accepting all the wretchedness in advance and this proportionally to the level of “empathy”.

Is, then, compassion *always* good? Imagine a surgeon who is about to carry out an operation without anesthetics. Feeling the patient’s suffering, as it were, with one own nerves, so that the movements of the hand are arrested and rendered unstable, is decidedly *morally wrong*. It is better to treat the patient just as an object and a senseless one so as to act effectively for the sake of *the real good* instead of that *sensed* one.

Is the situation any exceptional? It might be doubted, as any subjectively perceived suffering might be such. An action that *appears* to be uncompassionate is more moral than that sentimental one. Some actions aiming at the real good of the suffering *might appear* ruthless.

The point of view of the suffering might not be the right one. Possibly, another point of view is to be adopted so as to obtain the real good instead of putting up with an Ersatz. Indeed, it is humane to treat all *evil* which affects the others (both physically and morally) *without indulgence*. Naturally, that does not amount to treating *persons* in such a way. To the contrary: a person (subsistence) is to be carefully distinguished from what is only *incidental* to it (a quality or its privation) and possibly *removable* just for the sake of one’s beatitude.

Some weakness can be tolerated *for the time being*, just for the sake of humanity. But it is inhumane indeed to put up with the fact of an evil really affecting a person. Evils are to be rotted out quite decidedly. The person is a measure, no doubt. But a person might be envisaged not just in the naked and crude presence of his/her existence, but in the perspective of the beatitude (real good) to be obtained in a broader horizon of time. This is meant by the autonomy of existence mentioned above.

Kant demanded that one should treat others as one would like others to treat oneself, but stipulates that the act be performed *simultaneously* by everyone without exception. But we live in the real world, i.e. the one affected by the *flux* of time. Man must be regarded *diachronically* just for the sake of the integral humanity, taken both in the individual and social dimension. There is a certain span of time between my addressing good to whom I expect reciprocation.

Moreover, those that passed away are not to be denied the right (and *vote*) to decide about the society they may have defended with the sacrifice of their own life. Similarly, those about to come “from the future” are to be given *equal rights* just for the sake of the integral humanity being defended.

The same holds true, *mutatis mutandis*, as for the inter-cultural dialogue. The dialogue is in fact always diachronically determined and no “modern” solutions privileged. The dialogue is the consequence of mastering the variability of the human personal existence, and this by giving the spiritual dimension to the physical part thereof, i.e. finding the means (a medium); the way-out of any existential hardship.

Good in general is neither what pleases nor profits. Good is more than that. Persons must not be used, understandably enough. The problem was made out by Kant himself. Still, the problem of the Kantian formalism consists in the fact that it is impossible to ascertain as to whether moral actions were addressed to the physical substances indeed, which must be desirable after all, since we live in the physical world. The reflection would have rendered it possible, but it was considered by Kant impossible. In consequence, one lived in a safe abode of his/her subjectivity and protested vehemently every time he/she was tried to be torn out of it. The life seemed to be dreamt of. If there was no means to ascertain as to the physical counterpart of moral decisions, some humans might be deprived of the very name of humans, just because it was impossible to decide whether *this or that subject* shares in the human nature. Consequently, the unborn or terminally ill might be – and just for the sake of perversely understood humanity – deemed not deign of the name of humans.

Everyone is able to commit a wrong deed. It is reflection only that might put aright evils done or anticipated. And the reflection is not possible save by means of what makes man what he is – rational being.

Sentiments, emotions, images are of some importance for human life, no doubt. But they are only relatively so. People happen to share in the common attitude to the characters pictured e.g. in literature. Our common subjectivity (the “we”) seems to be founded just on directing our affections toward the same (albeit sometimes imaginary only) characters. Still, any cynic might destroy the sentiments. The death of the heroine of “The Old Curiosity Shop” by Dickens had been touching until it appeared *ridiculous* for Oscar Wild instead. The sentiments that create our common subjectivity must be defended effectively, which is only possible by means of the intellect.

Obviously, a certain order is to be expected of any system of values. The simplest way of ordering anything at all is that of arraying it according to the magnitude. An autistic child is unable to order words so as to build a sentence; it puts up with sheer arraying of material objects. The problem is that in this case the system is as rigid as barren. Probably, the idea of positive law that underpins the Kantian formalism of values cannot yield anything save just coercion and constraint. Hegel, the ideologue of the Prussian Absolutism was known for the notorious: “freedom is the recognition of necessity”, and the ethical formalism is not likely to spawn anything else. The latter can assume as grotesque guises as demanding of people that they should “feel happy” despite being affected by some hardships of life. “Do not be harsh on anybody so that you might render your hardship non-existent”. The life becomes a game and directed by *positive* rules. No *natural* rights and laws existed. People were expected to play a role in the “movie-civilization”. The freedom was *thought of* instead of being *real*. Naturally, the problem of the *individual* freedom is not solved in this manner. The freedom is not likely to be guaranteed (directed) by any form of enlightened absolutism – either “religious” or humanistic one.

In PREFACE, the principle of social solidarity enshrined in the Polish Constitution of 3 May 1791 was mentioned. The principle made it differ essentially to all other constitutions, in which the idea of positive law prevails. Moreover, in the present Chapter, the problem of the universalism of values was mentioned (and the problem which of them are universal not by a sheer extension but by their applicability) as well as the problem of their possible natural foundation. In addition, a quotation from Thomas was adduced speaking of the philosophical sense of the universalism in question and that proper to Christianity, which – according to Thomas – is more universal. It is so by being more *imposing* not in the sense of being *importunate*; it is *commanding* not in the sense of controlling, but in the sense of gaining a wider perspective for human existence. It triggers the dynamics thereof otherwise perhaps unhidden and imperceptible. All those threads will be gathered under one heading of

the Christian values

already anticipated. In what sense can they be universal and not violate the individual freedom at the same time?

The problem of the natural foundation of values; the problem of the cognizance of truth was addressed above. Now, the same problem may be addressed from the coign of vantage of the divine personal character of truth. Its existential counterpart is not so much *law* as rather *righteousness* or justice. Whence does it come? Let us quote the commentary of Augustine to Psalm LXXXV:

15. [vers.12.] *Veritas de terra orta est, et justitia de coelo prospexit. Veritas de terra orta est: Christus de femina natus est. Veritas de terra orta est: Filius Dei de carne processit. Quid est veritas? Filius Dei. Quid est terra? Caro. Interroga unde natus est Christus, et vides quia veritas de terra orta est. Sed haec veritas quae orta est de terra, erat ante terram, et per ipsam factum est coelum et terra; sed ut justitia de coelo prospiceret, id est, ut justificarentur homines divina gratia, veritas nata est de Maria virgine; ut posset pro illis justificandis offerre*

sacrificium, sacrificium passionis, sacrificium crucis. Et unde offerret sacrificium pro peccatis nostris, nisi moreretur? unde autem moreretur, nisi a nobis acciperet ubi moreretur? Id est, nisi a nobis sumeret carnem mortalem, Christus mori non posset; quia Verbum non moritur, divinitas non moritur, Virtus et Sapientia Dei non moritur. Quomodo offerret sacrificium victimam salutarem, si non moreretur? Quomodo autem moreretur, nisi carnem indueret? Quomodo carnem indueret, nisi veritas de terra oriretur? *Veritas de terra orta est, et justitia de coelo prospexit.*

10. “Truth hath sprung out of the earth, and righteousness hath looked down from heaven” (ver. 11). “Truth hath sprung out of the earth:” Christ is born of a woman. The Son of God hath come forth of the flesh. What is truth? The Son of God. What is the earth? Flesh. Ask whence Christ was born, and thou seest that “Truth is sprung out of the earth.” But the Truth which sprang out of the earth was before the earth, and by It the heaven and the earth were made: but in order that righteousness might look down from heaven, that is, in order that men might be justified by Divine grace, Truth was born of the Virgin Mary; that He might be able to offer a sacrifice to justify them, the sacrifice of suffering, the sacrifice of the Cross. And how could He offer a sacrifice for our sins, except He died? How could He die, except He received from us that wherein He might die; that is, unless He received from us mortal flesh, Christ could not have died: because the Word of God dieth not, Godhead dieth not, the Virtue and Wisdom of God doth not die. How should He offer a sacrifice, a healing victim, if He died not? How should He die, unless He clothed Himself with flesh? How should He put on flesh, except truth sprang out of the earth? (St. Augustin: Expositions on the Book of Psalms translated, with notes and indices T&T Clark Edinburgh).³⁷

The truth of the Christian values is intrinsically connected with the divine begetting and with the Trinitarian “dimension” of the divine life consequently too: Truth must be both founded *transcendently* and begotten *actually*. The problem of the natural foundation of these values (if they are universal indeed), addressed above, can be understood in this context only. There was a Unique Person that incorporated the Divine Truth coming to the earth. Thus, begetting became corporal (human) after being eternal and spiritual (divine). There was but one Pure Man (pure both because of being sinless and not hypostatically united to the Divine Person) able to receive the Truth. This Person guaranteed the dynamics of human life about to come after accepting the historical (i.e. factual) proposal addressed by God to man.

Forgiveness, repentance, love are regarded as values. However, they might be as lifeless as quite unattractive. They would have remained barren, had not the Divine Truth been met by the Pure Man. What, then, can render all the possible human values dynamical and vivid? Is a hierarchy of values the ultimate to be expected of them or can they permeate each other?

There is such a dynamics in the inner life of God (life of God is described by Aristotle in general terms only), but the Divine Relations (Persons) communicate with each other in the way quite incomprehensible to man – known by the Revelation only. They are difficult to express even in theological terms, but instead of strict theological description we can put up with some approximation expressed in quite ordinary words. Thus, *Potency* is, according to Thomas, ascribed to the First Person, *Wisdom* – to the Second; *Goodness* – to the Third.

³⁷ <http://www.ccel.org/ccel/schaff/npnf108.i.html>

Thomas enumerated others modes of appropriation of the essential attributes to God too (Sth., I, 39, 8, c). But perhaps all values can be (albeit indirectly) inscribed into the threefold scheme of the appropriation. To say it otherwise: albeit there are but three most general values, all values at all are inscribable in the scheme of those most general ones. Still, besides (intellectual) approximation there is a real life and “experienced” in a way: the *participation* of/in the divine life. There is a dynamics in the divine life. Now, human life can be intensified and the world we inhabit enlivened to the extent it participates of the divine one. Thus, all human values are potentially a participation in/of the divine life. A special term of perichoresis was used to describe the dynamics of the divine life. Now, the human life might consist in intertwining the values in an analogous way. The dynamics seems to be just opposed to hierarchism and the absolutism of law. We live as intensely as we participate of/in the inner life of God.

Obviously, wisdom, justice, love are human values (possibly institutionalized and hierarchized) and would have remained so forever, had not the Wisdom of God been begotten of the Person mentioned above – some two thousand years ago. Since then, all human values have assumed a special “dimension” and the human begetting too. They have begun to be just the participation in the dynamics of the divine life. There a perichoresis in the Christian values in a sense and *in the ordinary* Christian life too; a dynamics making the values intertwined instead of being hierarchized only. The intensity of human life and human values depends on the degree the participation takes place.

Perichoresis (from Greek: περιχώρησις perikhōrēsis, “rotation”) was a term referring to the relationship of the three persons of the triune God. Circumincession is a Latin-derived term for the same concept. John of Damascus applied it to the “interpenetration” of the three persons of the Trinity, and it became a technical term for the latter. Modern authors extend the original usage to cover other interpersonal relationships. The term “(co)-inherence” is sometimes used as a synonym. Some theologians speak of the reciprocal dynamism between God and God’s creatures.

There is a widely-spread conviction that the theological controversies (and those Trinitarian ones in particular) are of no importance for the ordinary human life. Neither should they have been so for those who, especially in antiquity, disputed them with ardor. The notorious modern “tolerance” has been assessed as the supreme value to replace any form of “fundamentalism”. In fact, it adds up to indifference. People happen to be indifferent to the real good and ultimate possibilities of life. Human life can be mundane; nay, it can be even base and vile. But it need not so. There is, according to Augustine, at least a *trace* (vestigium) of Trinity in the entire nature. However, there is, in addition, an *image* of Trinity in the *rational* creature (Imago Trinitatis est in homine secundum mentem). It is preposterous to believe that human life can be lived honestly without what makes man specifically different to nature; without being regulated and ordered by the intellect and will – two spiritual principles to be found in humans only. Moreover, a man is intellectual to the extent he/she participates of what is intelligible as such. So, according to Thomas, the image of Trinity in a man appears in full when he/she turns to God – the source of intelligibility. And conversely: an atrophy of (individual and social) life shows up when cut off the real Source.

There are two “processions” in God and Three Persons that correspond. Two processions are those of the intellect and will and the same mutatis mutandis appears in man –

the image of Trinity. When speaking of the social integration and the human one (e.g. personal affectual integration), it is only natural to regard the Purest Unity possible – that seen in the aforementioned processions. No re-integration is possible save by means of participating in the divine mode of the return (reconciliation). For according to Thomas, there is a return in God, indeed. The Third Person is such a “return” to the source of Trinity.

There is equality in Persons and paradigmatic to that human one. Now, human equality must be founded on this Transcendent Archetype. So, there is no room for the profane in human life; there no realm not affected by the presence or the (deplorable) lack of the Divine Archetype. The Trinitarian controversies are as practical as can only be imagined. The very idea of equality (even if distorted by rationalism) present in the West bears a testimony to its historical Archetype. For there is no such an idea to be found otherwise than within the scope of the influence of Christianity.

To the contrary, the idea of hierarchical and linear scheme of values and laws underpins constitutionalism and positive law. *Procession* is unidirectional here, and both “values” and “laws” are “directed” so.

A special theological archetype thereof expressed in the term of subordinationism was connected with Arianism. According to Wulfila, no equality and no dynamism in the inner life of God exists as written down in the Nicaean Creed. A human counterpart of Arianism is just the idea of positive law and of the values in the Kantian sense. For the procession (the evolution) of the positive law was linear, with no prospect of the real return. The existing guises of life were disposed of for the sake of what was expected to be “more human”. The weak and the vulnerable were to be rid of too. The past; the generations that built our Present were to be disposed of, just because being outdated. Being “modern” was a synonym for being “better”. There was no diachronic dimension constructive for human life. The equality existed but in the evanescent “now” of time, so fleeting that simply imperceptible.

There is no past and future in Divinity, but being the image of God is tantamount for humans to distinguish between the principle and the principled. All existing individuals are in fact affected by the diachronic dimension of human life, but some only are *equal* to new challenges. The diachronic dimension of human life and its equality (reciprocation of good and gratitude for the accepted) requires being open both to the future and to the past. Are those that passed away to be denied the *vote* for deciding about the life they created, just because being absent? The diachronic dimension of human life consists, in addition, in being open to the future. The family presents such a possibility. The properly human encounter is not that of confronting an enemy, but that of begetting a spiritual good with the hope of reciprocation (the return). All social relations (and social reintegration too) is founded on this principle.

But there is a special kind of begetting, and physical one. Parents give a new life. They cannot be denied the right to give it all possible “dimensions”, those spiritual included. Human begetting is spiritual too. In fact, a promise (a word of intellect) precedes it. Educating is an integral part of human begetting. The family is a center of human spirituality, although possibly surrounded by the attacks of competing individuals, which was so plastically depicted by Darwin. People might desire to be animals indeed, but they need not be brutes nonetheless. They might act rationally, which is to say: respect the human dignity and that of the most vulnerable first of all. Conversely: the practical value of human (i.e. rational) actions

is tested by confronting the possibility of being open to the new life. Without the openness the human begetting would be crippled.

The Constitution of May 3 was underpinned by the idea of social solidarity; i.e. being open to those who passed away and are expected to come; to *all real* people; for it is impossible to meet a person in the real world save in the flux of time. The handicapped can be raised to a higher level and the idea of social solidarity consists in creating the possibility. But on the other hand, people could be degraded either institutionally (as in socialism) or de facto (effectively) as in capitalism. Darwinism could become a rule.

The problem of the reintegration of the unity of humans must be seen in the same perspective – both transcendent and “terrestrial” (to use Augustin’s notions). The unity is to be desired, no doubt, but the idea of the Eternal Peace will be vain unless the real source of peace is shown. Two aspects must meet so that the reintegration might take place. Humans must be open both to the Transcendent and to the Recipient.

The Constitution of May 3 began with the invocation of the Triune God. Instead of the idea of the Enlightened Absolutism forced upon men, the perspective was spotted of the participation and solidarity. Is then, anyone to be deprived of this perspective out of sheer ideological reasons? Can anybody be denied the right to this kind of life? Must the broadening of the human hopes be institutionally forbidden?

CHAPTER III. MATHEMATICS

In his Critique of Pure Reason, Kant rejected the proof of the existence of God in general, and the proof called by him “cosmological” in particular. The kinetic proof had been assessed as a kind of the latter. The gist of the argumentation consisted in questioning (and rejecting next) the scientific status of metaphysics. Indeed, it had been metaphysics that had been responsible for the validity the proof eventually. Although the matter of the proof (the analysis of motion) was provided by Physics, the Aristotelian *scientia naturalis* was attacked but indirectly. Kant identified metaphysics with what he had read in Christian Wolff’s “Ontology”. In other words: the supreme science, to Thomas mind, comes after (meta-) Physics and the sense of being is illustrated by the sense of being-*actually*-in-motion, whereas in Kant that sense was to be found in the realm of pure possibility of being, because Wolff defines being as what is possible (*ens est quod possibile est*). Consequently, the four transcendental (main philosophical) questions read: 1. How is pure mathematics *possible*? 2. How is pure natural science *possible*? 3. How is metaphysics in general *possible*? 4. How is metaphysics as a science *possible*?

Normally, an objective is known to be possible after *realized*. E.g. I am unable to know whether I can learn Chinese unless I try to. Even if some objectives are obviously impossible, they are known so *for me* only. E.g. to learn ten foreign languages is an objective

disproportionate to my *actual* sphere of activities. But the same objective might be possible for another person whose abilities are not directly known to me. It is about nature; about how it can be actualized and perfected.

Aristotle asks a fundamental question: granted that motion is the most obvious phenomenon of nature, is the science considering motion the supreme one, or is there another one more formal than Physics? According to him, motion consists in the *actualization* of formality, so the problem remains whether natural forms can exist *apart from* having been just actualized. What is, then, the most formal in being? According to Aristotle, it is substance; according to Thomas, it is existence. According to Kant, the formal is only to be found in consciousness.

The anti-metaphysical program of Kant was based on the analysis of science in general, and the sciences called nowadays exact in particular. Kant analyzed the sciences he deemed paradigmatic: mathematics and physics. According to him, the statements of them both were justified because founded on what he called *Anschauung* (intuition). *Anschauung* was indispensable for man to understand anything at all. Now, as the intuition was impossible in metaphysics, metaphysics was not a science.

The problem of how the sensual data and imagination are used in human reasoning has already been tackled in this book. Still, the problem of the science called exact and its relation to metaphysics has not yet been fully elucidated. Now, the anti-metaphysical shaft of the reform initiated by Kant must, if taken with all its consequences, turn against science as such, the exact sciences included. Nowadays, it seems to be impossible to depict in *Anschauung* some elaborated ideas of contemporary mathematics, e.g. the imaginary number. Obviously, if Kant proved to be a destroyer of metaphysics, he would destroy (modern) mathematics by the same token. The paradigm of mathematics as proposed by Kant himself is to be questioned once more for the sake of mathematics itself. The question called by Kant “transcendental”, to wit: “how pure mathematics is possible”, is to be asked anew. This will be attempted subsequently by settling the ontological status of its *object*. The scheme of science must be capacious enough. But the constructive vision of science as such is, at the same time, a constructive vision of metaphysics. Let us begin with a question:

1. Are natural processes reversible?

But it is not about *physics* only; it is about *nature* and some “circles” of formality existing therein as well as the most formal to be found in nature: the human intellect.

The proof of the existence of God consists in, so to say, “returning to the Source”; or “closing up” the circle of the intellectual life, which was plastically depicted in the medieval *Liber de Causis* in the words: “*omnis sciens qui scit essentiam suam, est rediens ad essentiam suam reditione completa*” (Every knower who knows his own essence, returns completely to his own essence). True, the stress was put on “own essence”, but it is only natural to man to turn *outwards*, before possibly turning to himself. Consequently, what spurs the return in question is to be sought in the outer world, which, in turn, returns to its *own* transcendent

cause (the Principle and End). Rational creature returns to It specifically. Man recognizes fully his own spiritual nature eventually in the Mirror of Eternity only (as was said above). Albeit secondary really, the fact of self-cognizance might seem *subjectively* more important, and tried to be given a theoretical footing. Still, man naturally turns to the Other. Nature, on the other hand, turns to its own end. Nature must serve as the starting point of every human activity (the self-cognizance included), even if the natural does not satisfy it completely. For the natural cycle of the cosmic “life” is to be known first.

The last significant attempt of the “Return” was undertaken by Hegel, and was, in a sense, an “erratum” to Kant’s Critique of Pure Reason. However, Hegel identified the order of the intellectually known world with its Principle. For the Principle was no more thought of as transcendent (independent of the world), but was believed to be identical with what otherwise (in Aristotle) might have seemed to be but subordinate to It. Indeed, we are only justified in assuming that the order of the universe if understood aright is but *a means* leading to the cognition of the Principle. The Hegelian self-consciousness (Selbstbewusstsein) is not such a means. Normally, we turn to the transcendent (at least in the weakest sense of the word proposed by Phenomenology), but reflect on this act of turning secondarily only.

The aspirations of philosophy might be as maximalist as reaching for the Ultimate, but, generally speaking, science as such, and experimental method in particular, is a return indeed. Scientists return to the experienced over and over again equipped with more and more perfect theorems. In mathematics, it is possible to return to *the same* imaginary object even if imagination is more than sheer Kantian Anschauung. In experimenting, the return is significantly more difficult. Thus (paradoxically) the *nature* of the return (its physical counterpart) is “visible” in experimenting, but the *perfect* return is only workable in the science whose objects exist in our mind first of all.

It is rather obvious that the adequate description of motion requires setting down both the outset and outcome of it. It is specific for philosophy to seize both in more (and perhaps the most) general terms. Kant simply believed that the terms (of metaphysics) were vague. They departed from the sensual data too far. Still, Kant broke not only with the excessive understanding of them, but with the tradition of the Greek philosophy, too. The originally neutral term of ἀρχή assumed in Ancient Greece eventually the meaning of principle. Similarly, the supposed equivocation included in the term of τέλος, is just as significant as that of the Latin *finis* and the English *end*, containing in fact nothing less than analogy. According to Aristotle, the circular motion is the most perfect one, as a return takes place there. This is apparently not tantamount to saying that the principle should be identified with the end. Both ought to be taken abstractedly, which is the only means to obtain the knowledge, the simple sequence of events being no more instructive than any casual juxtaposition of objects. Albeit Thomas stated indeed, that the *transcendent* Principle of the universe should be identified with the world’s End – as being Principle and End of the world are really identical in God – this does not mean that they are *known to us* in the same way. The simple identification will lead to the deification of what is *for us* “between” the Principle and End. True, human knowledge is a relation, but is an accident too. In other words: albeit being relation is essential to any logos (word and science), no matter how understood, it is in God only that the Logos is identical with His nature, whereas in humans it is but an accident. Its being *something* (the relation is *something* indeed) was ignored e.g. by Gilbert de la

Porrée. Human reasoning is *something* human; it must show the relation “between” the first impulse of the comic motion and its definite outcome. There is neither simple insight, nor any surrogate of the ordinary reasoning achievable for human mind in grasping the relation in question. The very fact was, in a sense, admitted by Hegel himself in the following: Der Weg der Geistes ist die Vermittlung, der Umweg – the pathway of the Spirit is indirect. However, no reasoning was meant by Umweg (detour), but a historical Anschauung instead. The history was credited with power of gaining insight into the sense of being.

Apparently, mathematics need not resort to history when it envisages relations. Mathematical objects are *connected* to each other exactly (related so), but obviously not subject to any “narration” (a historical relation). “Relation” might be equivocal here: things might be related (to each other), but facts might be related also, which is to say: be in a relation to “the I” of a narrator – Kantianism is at bottom such a narration. Why should the supreme science be a narration whatsoever? The contemporary crisis of meta-narration testifies to that it should not and *must not* so. If science consists in seizing objects abstractedly, metaphysics is likely to be the supreme science. If science *cannot* consist in seizing things historically, (Hegel’s) Phenomenology *is not likely* to be the supreme science. The cycle of nature is to be shown in the most general terms possibly achievable. In other words: its existence is the problem to be solved in the supreme science. It is the problem of “reditio completa”; the problem of whether the human world might prove to be in-between of the Principle and End.

The intuition of (Divine) Logos is not naturally achievable for human mind. Human logos (human word) is always dia-logical (the prefix “dia” connotes division). Now, since Kant stipulated the intuition (Anschauung) of objects nonetheless, he had to assume that it must be uniform (Kant believed the intuition to be at work in mathematics). His intuition grasped the formal in things, and Kant did not admit the possibility of the formal itself being differentiated, and the originally given (sense data) being mediated. Consequently, he rejected the traditional claim that the Principle of the chain of causes of the cosmic motion is (dia-logically) knowable (human mind is an intermediary here) and existing beyond this chain. It is all about notions assuming more general and abstract meaning. Ancient Greeks advanced towards the abstract; modernity advances towards the concrete.

Aristotle used (in Anal. Post., I, c, 34) a special (and more abstract than the Kantian Anschauung) term of ἀρχήνοια (or εὐστοχία) to describe the “intuition”. It is the ability to grasp the middle term of a syllogism. It is a faculty to grasp different grades of formality. The process of the scientific dialogue follows, but reasoning finishes after finding this core of a syllogism. The process is temporary, but being just temporary does not account for being objectively valid nor is time a key of wisdom, as Hegel assumed. It is preposterous to believe that a sheer consequence of forms or objects can provide an insight into the essence of things. Kant believed in that the sequence of time was essential for “counting” objects in the mathematical Anschauung. But in fact, human temporality is but accidental to human reasoning.

In Kant, temporality rather substantiates human understanding than accompanies it. It seems something of a common denominator for all types of human rationality. Consequently, these types are not diversified as to proper methods of reasoning. Aristotle, on the other hand, remarks that preserving methodological diversity seems to be essential for science as:

It is hard to be sure whether one knows or not; for it is hard to be sure whether one's knowledge is based on the basic truths appropriate to each attribute - the differentia of true knowledge. We think we have scientific knowledge if we have reasoned from true and primary premisses. But that is not so: the conclusion must be homogeneous with the basic facts of the science.³⁸

Without preserving the methodological diversity we commit an error called μετάβασις εἰς ἄλλο γένος (metabasis eis allo genos). The “principle of exclusion” (if it might be called so) says that “we cannot in demonstrating pass from one genus to another.” (c. 7, 75a 38: Οὐκ ἄρα ἔστιν ἐξ ἄλλου γένους μεταβάντα δεῖξαι):

For there are three elements in demonstration: (1) what is proved, the conclusion-an attribute inhering essentially in a genus; (2) the axioms, i.e. axioms which are premisses of demonstration; (3) the subject-genus whose attributes, i.e. essential properties, are revealed by the demonstration.

(c. 7, 75a 38)

τρίᾳ γάρ ἐστι τὰ ἐν ταῖς ἀπο-
a 40 δείξεσιν, ἐν μὲν τὸ ἀποδεικνύμενον, τὸ συμπέρασμα (τοῦτο
δ' ἐστὶ τὸ ὑπάρχον γένει τινὶ καθ' αὐτό), ἐν δὲ τὰ ἐξιώ-
ματα (ἀξιώματα δ' ἐστὶν ἐξ ὧν)· τρίτον τὸ γένος τὸ ὑποκεί-
75b 1μενον, οὗ τὰ πάθη καὶ τὰ καθ' αὐτὰ συμβεβηκότα δηλοῖ
ἢ ἀπόδειξις. ἐξ ὧν μὲν οὖν ἢ ἀπόδειξις, ἐνδέχεται τὰ αὐτὰ
εἶναι·

The principle of exclusion is the most universal and identical in fact with the principle of non-contradiction, whereas in Kant “The Principle of the Synthetical Unity of Apperception is the highest Principle of all exercise of the Understanding”³⁹. The Aristotelian principle is the principle of order; the Kantian one is supposed to be applicable *indiscriminately* to all types of rationality. Thus, Kant speaks of “the Originally Synthetical Unity of Apperception”, and remarks:

The “I think” must accompany all my representations, for otherwise ... the representation would either be impossible, or at least be, in relation to me, nothing. That representation which can be given previously to all thought is called intuition. All the diversity or manifold content of intuition, has, therefore, a necessary relation to the “I think,” in the subject in which this diversity is found. But this representation, “I think,” ... is self-consciousness which ... must necessarily be capable of accompanying all our representations. It is in all acts of

³⁸ Posterior Analytics By Aristotle Written 350 B.C.E Translated by G. R. G. Mure. Bk I, Part 9.

<http://classics.mit.edu/Aristotle/posterior.1.i.html>

³⁹ Kant, The Critique of Pure Reason by Immanuel Kant, translated by J. M. D. Meiklejohn, p. 96.

<http://www.metaphysicspirit.com/books/The%20Critique%20of%20Pure%20Reason.pdf>

consciousness one and the same, and unaccompanied by it, no representation can exist for me. The unity of this apperception I call the transcendental unity of self-consciousness... For the manifold representations ... must conform to the condition under which alone they can exist together in a common self-consciousness ⁴⁰

This type of rationality was deemed the highest one and all other types of reasoning to be fashioned after the model. The type of intuition mathematics (allegedly) used was described by Kant (after posing the question: “how is pure mathematics possible?”) in the following:

... the intuitions which pure mathematics lays at the foundation of all its cognitions and judgments which appear at once apodeictic and necessary are Space and Time. For mathematics must first have all its concepts in intuition, and pure mathematics in pure intuition, that is, it must construct them. If it proceeded in any other way, it would be impossible to make any headway, for mathematics proceeds, not analytically by dissection of concepts, but synthetically, and if pure intuition be wanting, there is nothing in which the matter for synthetical judgments a priori can be given.⁴¹

Thus, once spellbound in time, a scientist is not likely to transcend it, and the very attempt might seem reprehensible:

Certain philosophers have, nevertheless, allowed themselves the liberty of making ... a saltus (metabasis eis allo genos). From the changes in the world they have concluded their empirical contingency, that is, their dependence on empirically-determined causes, and they thus admitted an ascending series of empirical conditions ... But as they could not find in this series any primal beginning or any highest member, they passed suddenly from the empirical conception of contingency to the pure category, which presents us with a series – not sensuous, but intellectual – whose completeness does certainly rest upon the existence of an absolutely necessary cause.⁴²

The reason *seemed to be* that:

... if we begin our proof cosmologically, by laying at the foundation of it the series of phenomena, and the regress in it according to empirical laws of causality, we *are not at liberty* to break off from this mode of demonstration and to pass over to something which is not itself a member of the series. ... the supreme condition or cause *must close* the regressive series according to the laws of sensibility and consequently, must belong to the series of *time*.⁴³

⁴⁰ The Critique, p. 96.

⁴¹ Kant's Prolegomena to any Future Metaphysics, edited in English by dr. Paul Carus, Chicago 1912; First part of the transcendental problem, § 10.

http://www.gutenberg.org/files/52821/52821-h/52821-h.htm#_RefHeading_Toc3103

⁴² The Critique of Pure Reason by Immanuel Kant, translated by J. M. D. Meiklejohn Observations on the fourth antinomy. On the thesis.

<http://www.metaphysicspirit.com/books/The%20Critique%20of%20Pure%20Reason.pdf>

⁴³ Ibid.

To Kant's mind, transgressing the realm of the primitive intuition equals transgression the possibilities of human reason. Thus, metaphysics would have been bogus and the proof of the existence of God – illusion. At the same time, however, preserving this type of intuition would make us unyielding to the temptation of μετάβασις εἰς ἄλλο γένος (metabasis eis allo genos) at all. Is, then, Kantianism immune to this type of temptation? Is methodological exactness preserved in the Kantian formula of science?

The appearing of Geisteswissenschaften seems to disprove the assumption. Apparently, “the sciences on Spirit” are not the sciences on number. Moreover, the so-called Gestaltpsychologie is continuation of Kantianism, similarly as Piaget's psychology. Did Neo-Kantians misunderstand the doctrine of the Master and did psychologists misuse his principles? Now, it does not seem so, for the extrapolation of the validity of the primitive intuition seems to be enshrined in the very essence of transcendentalism. The intuitions (by their very nature) cannot apply to what is foreign to them, but temporality might seem to be common to them all. Thus, μετάβασις εἰς ἄλλο γένος (metabasis eis allo genos) seems to be natural here, since the primitive intuition does not allow the genera being really different. The very term of transcendentalism seems to imply the transgression.

Is, then, the transcendental program to be rejected in bulk? Is the idea of the unity of the sciences unscientific? It does not seem so. According to what was said above (Chapter I, 1), the unity in diversity makes for an *ordered* system, always desirable for human mind. Accordingly, “metabasis” is *conditionally* admissible. Aristotle “explains later”, “How in certain cases transference is possible) (75b6· τοῦτο δ' ὥς ἐνδέχεται ἐπὶ τινῶν, ὥστερον λεχθήσεται. Now:

... if the demonstration is to pass from one sphere to another, the genus must be either absolutely or to some extent the same. If this is not so, transference is clearly impossible, because the extreme and the middle terms must be drawn from the same genus: otherwise, as predicated, they will not be essential and will thus be accidents. ... Nor can the theorem of any one science be demonstrated by means of another science, unless these theorems are related as subordinate to superior (e.g. as optical theorems to geometry or harmonic theorems to arithmetic). Geometry again cannot prove of lines any property which they do not possess qua lines, i.e. in virtue of the fundamental truths of their peculiar genus ... for these qualities do not belong to lines in virtue of their peculiar genus, but through some property which it shares with other genera.⁴⁴

The Kantian Gegenstand (object) is “constructed in the intuition”, but hardly translatable into English. The notion of *subject* implies accidents possibly inherent in it, whereas the notion of “object” does not: it “stands against” the mind only. Subjects (subiecta; ὑποκείμενα) have certain properties, and some of them inhere in them out of necessity. E.g. it is impossible for a living (perfect) thing to be without being-a-male or -female. Science discovers vaster and vaster realms of necessity inherent in diverse subject matters. It is impossible to determine a priori the scope of necessity science might unveil, but the very method adopted by Kant is

⁴⁴ Posterior Analytics, Bk I, Part 7.

nothing save such an attempt. The attempts result in creating same hybrids of science pernicious to the very essence of knowledge. The only uniformity acceptable in science is that resulting from the same act of the intuition (ἀγχίνοια or εὐστοχία) of the middle term of a syllogism.

Arithmetical demonstration and the other sciences likewise possess, each of them, their own genera; so that if the demonstration is to pass from one sphere to another, the genus must be either absolutely or to some extent the same. If this is not so, transference is clearly impossible, because the extreme and the middle terms must be drawn from the same genus: otherwise, as predicated, they will not be essential and will thus be accidents.⁴⁵

Were we to name the method adopted by Aristotle “transcendental”, the transcendental questions would appear in Aristotle put more precisely than in Kant. It is the supreme science that crowns the unity of knowledge, not the unity of apperception whose existence is questionable and by no means obvious. Metaphysics is the supreme science is, whereas the Kantian the Critique is not science at all.

It is clear that if the conclusion is to show an attribute inhering as such, nothing can be demonstrated except from its ‘appropriate’ basic truths. Consequently a proof even from true, indemonstrable, and immediate premisses does not constitute knowledge. Such proofs are like Bryson’s method of squaring the circle; for they operate by taking as their middle a common character - a character, therefore, which the subject may share with another - and consequently they apply equally to subjects different in kind. They therefore afford knowledge of an attribute only as inhering accidentally, not as belonging to its subject as such: otherwise they would not have been applicable to another genus.

Our knowledge of any attribute’s connexion with a subject is accidental unless we know that connexion through the middle term in virtue of which it inheres, and as an inference from basic premisses essential and ‘appropriate’ to the subject-unless we know, e.g. the property of possessing angles equal to two right angles as belonging to that subject in which it inheres essentially, and as inferred from basic premisses essential and ‘appropriate’ to that subject: so that if that middle term also belongs essentially to the minor, the middle must belong to the same kind as the major and minor terms. The only exceptions to this rule are such cases as theorems in harmonics which are demonstrable by arithmetic. Such theorems are proved by the same middle terms as arithmetical properties, but with a qualification - the fact falls under a separate science (for the subject genus is separate), but the reasoned fact *concerns the superior science*, to which the attributes essentially belong. Thus, even these apparent exceptions show that no attribute is strictly demonstrable except from its ‘appropriate’ basic truths, which, however, in the case of these sciences have the requisite identity of character.⁴⁶

The nature of intuition must impose restrictions upon what issues therefrom. The Aristotelian intuition makes, however, for both order and progress of science, whereas in Kant the primitive makes for the barrenness of the paradigm and confusion of the conclusions. Not

⁴⁵ Posterior Analytics, Bk I, Part 7.

⁴⁶ Posterior Analytics, Bk I, Part 9.

even the applicability of mathematics to physics can be convincingly proved in Kant. The theorem seemed to justify the extension of applicability of the primitive intuition, but it could not spawn the progress of science other than a sheer extension of its objects. Science should be innovative rather accumulative of data. Temporality does not seem to describe the nature of human thinking adequately.

Generally speaking, to distinguish between the principle and the end is essential for any human understanding, the most primitive cognitive acts included. The non-contradiction principle is used therein and perhaps even unwittingly when telling between what *is* and what *is not* in a certain respect at least. The “is” and “is not” can have temporal meaning, but need not. A “was” (of the past events) can be understood as a privation of what is (now); and the “is” of the time we live in as imperfect in relation to what is-going-to-be. Generally, and depending on the point of view, either the principle or the end can be regarded as a privation (a nonbeing is something that *is not*: something that *is not yet* or something that *is already not*). We differentiate objects at least in this (temporal) sense, for blurring distinctions is bound to spawn disorder. The separate problem is how far this distinguishing can possibly advance. Apparently, we advance into the future. But the problem is how far we can *master* our future and how far *any* future can become *our one* and deserving of the name of the *human* future; the future of a free being. The time of Transcendentalism makes, in fact, humans incarcerated in the flux of time; makes them enthralled to the de-personified progress of “humanity”; for the humanity was but a postulate and not to be found – by means of reflection – in individual humans. The particular is considerably less than the individual; the latter implies a reflection (a return) to the same object accomplished by an individual equipped with the armor of science or moral prudence. Thus, individuals prove to be undivided and armed against any decomposition, disintegration and fragmentation of life.

Metaphysics is *the supreme* science because it uses principles to the highest degree; it does not, however, abuse them (as Kant thought). Aristotle says that metabasis *is usually* impossible, but “... *in certain cases transference is possible*”. For an “intuition” of a middle term of *another genus* is possible in a science called higher (subalternans) (Posterior Analytics, II, part 13). The problem of the subalternation was addressed in CHAPTER I, 1. Metaphysics of Aristotle avails itself of the “intuition” of four causes in the most general terms, and the demonstration of the existence of God (The Supreme Agent and Ultimate End) follows.

The *plainest* mode of distinguishing is that of mathematics, but it does not need to be the *most perfect* one by the same token. The principle and the end are seized in mathematics almost literally and contrasted by “more” and “less” as in Plato’s Dyas. Two objects about to be severed are, at the same time, placed at the same, so to say, “neutral” level. The level (the scientific one in general) is called, by Aristotle γένος ὑποκείμενον – substratum. Now, it is proper to mathematics to regard the substratum in question as the quantitative aspect of things. This is why mathematics is called an exact science – that concerned with the most primitive (poorest) aspect of things.

The place of objects in that science is “neural”, as was said above. No point in any reference frame can be privileged. The Galilean transformations allow choosing the reference frame ad libitum. The choice is only the matter of convenience. The philosophical explanation of the fact was provided by Thomas: the method proper to mathematics is abstractio formalis,

and the formal in question is the aforementioned quantitative aspect of things. No different grades of formality are taken into account. Consequently, it cannot be distinguished between one *specific* nature and the other. But, on the other hand, it is possible to distinguish *exactly* between the “more” and “less” of things.

The Galilean paradigm of science (the exact one in the sense proposed above) is usually contrasted with the Aristotelian one to the disadvantage of the latter. The former is widely credited with more value as associated with the imposing success of the method in the cognizance of the material world in modernity. The validity was especially substantiated by technological progress. A *historical* fact was stated. There is something quaint in the statement. The validity of the mathematical theorems is unshakable understandably enough. But, the possibility of the application of the theorems to the material world is tested but *empirically* – in the flux of time. The empirical fact of the progress of science had been stated in the Middle Ages by the author of “*Reportata Parisiensia*” and repeated by Kant some centuries later. However, the *reason* was not given save later on by Hegel, who deemed the progress as such the historical necessity. The possibility of the progress being thwarted had been discarded. Nothing save this statement by Hegel survived his system, but perhaps the most important one.

The idea that underpins the modern paradigm of science consists in that the boundary conditions might be generated *ad libitum* and, at the same time, settled more and more precisely. Nature is expected to obey the demands imposed by an experimenter, which had already been poetically expressed by Kant. The notion of progress itself implies a monotonic distribution of values, which was, however, apparently at odds with some completely new ideas coming to light. The possible linear accumulation in generating more and more precise boundary conditions was tacitly assumed. The progress might as well tend to infinity (as in Lessing) as end at some historical point (as in Hegel and Marx). From time to time, “the end of history” happens to be triumphantly proclaimed (as in Fukuyama), which apparently is about to satisfy the human desire for the ultimate fulfillment, no matter how precarious its form. Obviously, no real return to things (as postulated by Husserl) is meant when an experimenter reiterates the boundary conditions of an experiment. But the idea looms in the background of the real world about to be “reconciled” with the human spirit eventually (as in Husserl and Hegel). And this is, so to say, an eschatological return. All this adds up to that the idea of the return (*reditio*) as proposed by Hegel must be rethought in broader context, which is not that of history; it must be “bracketed”, so as to see the *essence* of the problem.

The simple demand that the boundary conditions must be able to be reiterated potentially *ad infimum* is plain. However, something more was expected of science. The only dynamics about to be expected in the process was connected with the human mind and the process was, at the same time, identified with progress. Still, it is by no means obvious that the boundary conditions must improve, because humans are in a position to destroy – paradoxically – the very possibility by inventing the means of destruction.

In Aristotle, the rhythm of human life consists in grasping the causes of phenomena we see. No real cause appears distinctly in the modern paradigm of science, unless perchance man should be a “cause” of nature yielding to his wishes. Boundary conditions might be called “causes” but equivocally, for it is not the Aristotelian sense of term. The Kantian scheme is as plain as barren: there was the formal connected with the human consciousness

and the material associated with the real world. It was always asked by philosophers *ex professo* about the relation of them both. The problem of idealism is somehow instilled in the scheme. We might well call the world a cause, or conversely, the human spirit to be independent of it. Both solutions (the Hegelian and Marxian) are equally barren.

According to Aristotle, human mind is both recipient and agent – depending on what we understand by the terms. The key-statement reads: *causae ad invicem sunt causae*. The form has its counterpart and the moving similarly. There is a life interacting between the mind and the world; neither of whom can be simply active or passive. The real return to the real world takes place in every act of cognizance that seizes the *specific* formal aspect of things different for different things. The natural processes are reversible as long as a *specific nature* is concerned.

It is obvious that some processes are reversible indeed, at least in the sense of them being possibly described as such – with a good approximation. The example is the movement of a charge in a uniform electric field. It is theoretically possible to return to the starting point after following any pathway. It is only required that a charge should maintain the same potential towards the source of the electric field, which is to say, no energy be dissipated during the motion. The situation is, nonetheless, a border case of the real motion to be found in the real world. The second law of thermodynamics says that processes are in fact irreversible in the real world, and the actual loss of energy is inevitable. The problem is that the second law of thermodynamics is but an empirical one. It is *practically* impossible for a pond to freeze during the hot weather, but it is *theoretically* possible. Obviously, the question arises what is the *real* world in question. Apparently, the mathematical world is far from being such. The non-degradation of the starting amount of energy is only possible in this ideal world. Moreover, it might seem that all human artifacts share the characteristic of being ideal in the sense mentioned above. A car, for instance, is meant to be the same object notwithstanding the real circumstances that must lead to its natural degradation. Obviously, a producer does not desire processes that are natural in the strong sense of the word; to the contrary: the processes are deemed undesirable as damaging this “ideal” object. The material of any artifact decays naturally, which is both undesirable for its producer and desirable for “nature”. The process of biodegradation of glass lasts ca 4000 years. This period of time is considerably longer than any production cycle. Still, for the philosophy of nature, those “longer” processes are incomparably more interesting than any practical ones.

The objects of experiment are somehow similar to artifacts. A cycle of the experienced is faced. However, the difference consists in the latter being carried out for the sake of cognition only, and not for profit. This opens a possibility to regard science as theoretical activity not aimed at any practical objectives. Albeit experimenting might be seen as praxis (*ars*), its real (natural) boundaries are discovered by theoretical thinking concerned with disinterested pursuit of truth.

The objects of experimenting can be idealized, which is to say: isolated, because they are, by definition, treated as independent (to some extent at least) of material circumstances. The circumstances must be dropped for practical reasons. We must *focus* on an objective and *disregard* the rest for the sake of effective acting. Distraction is as pernicious for human life as dissipation of energy for any *definite* physical object (for its being definite; i.e. the same now and next). It is practically impossible to carry out any production and experimenting

without disregarding some circumstances deemed at least provisionally less important. Naturally, in experimenting, we expect that we would take into account more circumstances later on and the image of the real world be more adequate. Thus, for a producer or experimenter acting in the real world looms a perspective of approaching the ideal, so to say, asymptotically, without the factual possibility to attain it after all. This ideal was expressed in the Kantian transcendental ideas – an unachievable end of the actual human activity. And it should have been so with humans indeed if the only activity had been connected with experimenting (Contemporarily, the so-called situational ethics stipulates testing values in analogous way). Kant did not admit the possibility of this ideal being realized in the direct contact with nature and human life terminating in the Creator of nature. The Kantian nature (*Ding an sich*) was as powerless as to render such like possibility absurd.

Still, taking into account the very scientific data (and interpreting them), we are justified in assuming that such a possibility *might* exist indeed. A process might be deemed reversible if the same amount of energy was pumped into a system and recuperated. This is not possible with artificial objects but is a fact with natural ones. There is no waste (no loss of energy) in nature producing anything at all. There is no loss, because nature as such is a system that operates perfectly and the exchange of energy is without loss. Now, is the presence of an “Experimenter” necessary for it to work so? According to Thomas, God is *an* Artificer and all natural things are His artifacts. There is a certain similitude to the human experimenting and producing, albeit an important difference, too: God provides the amount of energy necessary for the status quo of nature (for the natural processes being periodical). But He is a quaint Artificer and more perfect than any human one; for human activity cannot preserve the integrity of nature, which is the case with God.

Human experimenting consists in isolating objects arbitrarily, whereas nature abhors gaps and void. The “human” objects can be isolated as they are in fact ideal ones, determined as to their essence by mathematical theorems. This apparently is not the case with natural objects even if considered as artifacts of God. No possibilities are created by human experimenting; they are simply used. The contrary holds true as to the Cause that pumps the energy into the *whole system* of nature. God creates possibilities along with the manner He uses them. These possibilities are called by Aristotle the prime matter. Plato imagined them as a room for artifacts to appear in the real world (*χώρα*). Still, this is but an image, and the abstract notion of prime matter corresponds better to the possibility of natural processes being really reversible. Were God a Great Mathematician, he would have used them only; the possibilities faced by Him being, as it were, coeternal to Him. Some real possibilities would have existed beside him. According to Scotus, this realm stems directly from God’s intellect and is independent of His will. According to those who (as Kant) followed him, transcendental ideas are just possibilities and no theological explanation of whence they come was necessary. The weak God of Transcendentalism would have witnessed the cosmic process, which might be called the “intelligent design”. However, there is an idea of possibilities about to be used supposed. The cosmic process unfolded in the realm of those possibilities, and the weak God of Kant had to put up with them.

The general problem of philosophy since Plato and Aristotle must be rethought; the special status of the possible must be recognized. It is metaphysics that does the job. If the subject matter thereof is being as such, then all modalities of being, the possibility of being

included, must be subjected to its scrutiny. Philosophy must account for all modalities of being. It must explain the nature of the possibility in question. According to Aristotle, there is a physical possibility and it accounts for the natural processes being actually reversible. To the contrary, the possibility of being, as understood by Avicenna and his followers, is but an offspring of mathematical imagination. It is not discovered by mathematics; to the contrary, it is an ideal object meant to substantiate and legitimize the extrapolation of mathematical thinking on the realm foreign to it. It was made up by those who tried to maintain the mathematical method leaving, at the same time, the field of mathematics.

There is another feature of the problem yet and perhaps a more striking one. It is assumed that in the real world entropy must grow. Now, in the human world, something opposite occurs. We face a growing diversification of forms devised by humans, which might be called, in a sense, a growing potential of human mind. This is commonly understood by the progress of civilization. The question arises whether, and to which extent, the process can be called natural, as the Kantian nature seems to be rather forced into the forms devised by humans. It was plastically depicted by Kant in his Second Preface to the Critique of Pure Reason.

When Galileo caused balls, the weights of which he had himself previously determined, to roll down an inclined plane; when Torricelli made the air carry a weight which he had calculated beforehand to be equal to that of a definite column of water; or in more recent times, when Stahl changed metal into lime, and lime back into metal, by withdrawing something and then restoring it, a light broke upon all students of nature. They learned that reason has insight only into that which it produces after a plan of its own, and that it must not allow itself to be kept, as it were, in nature's leading-strings, but must itself show the way with principles of judgment based upon fixed laws, constraining nature to give answer to questions of reason's own determining. Accidental observations, made in obedience to no previously thought-out plan, can never be made to yield a necessary law, which alone reason is concerned to discover. Reason, holding in one hand its principles, according to which alone concordant appearances can be admitted as equivalent to laws, and in the other hand the experiment which it has devised in conformity with these principles, must approach nature in order to be taught by it. It must not, however, do so in the character of a pupil who listens to everything that the teacher chooses to say, but of an appointed judge who compels the witnesses to answer questions which he has himself formulated.⁴⁷

Apparently, Kant did not consider the source of the energy needed for performing the experiment. The possibility of existence boundary conditions was simply taken for granted. However, in the real world the problem exists. If it is the body of an experimenter that is such a source, what can guarantee that it is no less "forced" to obey "someone" instead of forcing the nature to obey it? The problem can be *provisionally* dropped, but it must crop up in the

⁴⁷ Immanuel Kant, Critique of Pure Reason, translated by Norman Kemp Smith. Preface to Second Edition.

future nonetheless. In fact, it did so just several years after Kant's death when Hegel's philosophy appeared. Hegel's solution appeared uncanny to many, but its existence was only to be expected. Individuals (experimenters) too, underwent the same necessity that was imposed on the whole universe. The next step was done by Heidegger.

When speaking about the world (Heidegger had in mind the human world) it is only natural to point out to the most perfect human instrument to master it – the human hand. Describing the notion of *Weltlichkeit* Heidegger resorts to the term *Zuhandenheit* (Ready-at-hand; handiness). The objects are considered with due attention if introduced into the realm of human activity. This apparently holds true as for the objects of experiments and production. So, can humans be defined as to their possible realm of existence by their praxis?

Be that as it may, human activity, nonetheless, must be described as unfolding in nature. In what sense (if ever) is the activity natural? Can the activity be analyzed as any other object envisaged in the material world? Is it possible to reflect upon it? Is it possible (as in Fichte) for such a reflexing to advance into infinity? Can producing define humanity at least indirectly?

It is rather obvious that some experiments could not be carried out without instruments minute enough. E.g. it was impossible to experiment on radioactivity in, say, the 18th century. But a paradox appears. The boundary conditions need not be improved. In fact, they can deteriorate, because we must assume the possibility of, say, nuclear destruction, and the return to the barbaric state of civilization. Such a possibility cannot be discarded a priori. Generally speaking, humans can destroy the *environment*, and the word is at its proper place, as in physics the system and environment must be determined and opposed. Moreover, the degradation of environment need not be as salient as in the case of the nuclear destruction. In fact, it might be even imperceptible to the untrained eye. If human body, and the human hand in particular, are indispensable to “create” the human world, then the weaker the body, the poorer the effect of “creating”. In fact, human body seems to be nowadays more susceptible than ever before to many forms of artificially created stimuli (destructive or at least distracting).

The adduced example of radioactivity might be as well a token of human ingenuity as a prerequisite for (auto-) destruction. Nothing but a possibility to use any human discovery either way remains. Science, to Thomas mind, is concerned with contraries. They exist in human mind immaterially (CHAPTER II. 3). A medicine is usually invented *so as* to cure humans. But the same medicine can be used *against* humans, either on purpose or because an objective other than human health is being pursued. Greed and commercialization of medication are not likely to improve human health save *accidentally*. A producer might be subjectively interested in achieving an objective but loosely connected with human welfare or actually contrary to it. Theoretical cognition of possibilities *precedes* any practical use thereof. Now, the possible faced by (applied) mathematics is connected with its possible application only.

In Heidegger, the *Vorhandenheit* – the possibility of being appears in the background of *Zuhandenheit*. The possibility of being, as mentioned above, is a challenge. Man-Creator can regard himself a supernatural being, but the very being assumes, at the same time, fiendish features. The perspective of “creating the better world to live in” is, in fact, historically intertwined with making the hell on earth. The sheer *possibility* of being cannot

guarantee anything else. The natural human environment can be possibly destroyed completely. Nothing but elementary particles would remain as some substitute of the variety of forms actually existing in nature. coign of vantage

The problem of human environment, however, is not restricted to the problem of human body. The boundary conditions of human existence can be degraded by means that are no less, so to say, substantial than water, food, etc. The very ability of, nay, the interest in, theoretical thinking can be degraded as well. Apparently, some theory can attract the attention by its beauty. But the intense perception of beauty might be foiled by sheer sensual pleasures or distraction. The human mind can yield to (auto-) destruction, too.

According to Hegel, the progress of civilization was combined of both “circular” and “linear” motion (as the Polish philosopher M. A. Krapiec points out), which is connected with the requirement to return to the starting point after having gained some more elaborate knowledge. The problem of whether the objects were seen adequately, or with some approximation only happened to be the problem of how modern the knowledge. The notion of approximation implies a reference point, as no one can be aware of approaching an object without seeing it. This was the case with Hegel. There was the coign of vantage indeed. Hegel boasted being an expository of the Absolute Spirit and the history would have ended with Hegel’s death. The thesis was, understandably enough, regarded as ridiculous. However, the idea of the end of history returns over the centuries with queer obstinacy. If Fukuyama heralded this end, he is not likely to be the last one. The fact testifies to that humans are actually dissatisfied with any relativism at all (the lack of end) and *finis mundi* must be at least imagined this way. A certain reference point is naturally desired. The only problem is that the world “created” by humans every now and then resembles rather the antipodes of the paradise. Totalitarianism has been accused of the “reprehensible” lack of relativism, but relativism itself is in fact no less inhuman, since it necessitates totalitarianism. Contraries attract each other; the fact is natural and to be put up with. Totalitarianism and relativism cannot exist without each other. They are children of the same mother.

The problem adds up to finding the “absolute frame of reference” *organically* unable to enthrall humans and to degrade them to the status of slaves. This is the problem of the purely theoretical thinking on nature.

Taking into account the scientific data as they are, it must be stated that in the real world:

- 1) Entropy must grow unless a cause is shown preserving status quo and the latter really exists;
- 2) The difference between the cause and effect is real. The special theory of relativity, demonstrates this at least indirectly when speaking about transferring a signal from a source to an end. The transfer is determined by nature. Those “points” are not neutral. There is a good reason to call the former is the cause and latter – effect.

Obviously, the only order to be found in the human world is that imposed by humans themselves. Disorder thwarts, generally speaking, all human activity. Still, the disorder can be caused by humans themselves. Human environment is indispensable for effective work. Humans take in a real amount of energy from the contact with nature and expend it next.

Consequently, the order must exist in nature first of all. All human artifacts multiply (at best) the primitive order of nature. The zero-value of the Kantian Ding an sich makes such a multiplication unworkable. The order accounts for our “finding the proper place” in the same circumstances, notwithstanding how laborious and intricate the process that unfolds between the starting point and the effect is.

It is striking how fiercely the so-called environment movement happened to be opposed by Libertarianism. It was believed that humans were completely free in “creating” their own world, and nature must comply. Some grotesque enterprises undertaken by other epigones of Hegel – Marxists took place in the USSR. Man boasted having subjugated nature and even its destruction was regarded as a proof of his superiority over nature. Nowadays, no less grotesque conviction dominates that people are able at the same time tyrannize nature and draw profits from natural resources. A special term was coined of “sustainable growth”. Nature is expected to “sustain” some human artifacts.

Originally, nature (as in Galileo) had been regarded in plainer terms. It was simply equaled with matter. But even Plato, falling a prey of mathematicism, thought of matter as ὑποδοχή – something that “sustains” (ὑποδέχεται) the forms imposed by the divine Artificer. Nothing save a caricature of the Platonian Demiurge remained in modernity.

The contemporary notion of nature is more “humane”. Nature has – allegedly – its own “rights”. The statement is not that ridiculous as it might seem. Nature might “have” rights, although it is better to say that it is *governed aright*: the fact denied by Kant. Those rights, or rather laws, of nature were the subject matter of the Aristotelian Physics, and generally speaking of the whole Greek philosophy before Aristotle. Nature was grasped in cyclical terms. The notion of the linear cosmic process is of the Arab origin. Humans are (to some extent) part of the nature and their activity, too. There is a room left for the mathematical physics in the Aristotelian and the Greek paradigm of science. The room, however, is of *restricted value* only. Human civilization must be harmonized with the rhythm of nature. This accounts for the natural processes being possibly (seized as) reversible. There are naturally *reversible in the real world*, in which the growth of entropy is incessantly compensated by the Transcendent Cause of the cosmic motion. Human activity must not be pictured as an Ersatz or caricature of the action of the Transcendent Cause. It must not be regarded as transcendental – issuing into to realm of pure possibilities envisaged in mathematics. It was idealism only that believed in the human freedom unfolding uninterruptedly in the realm of pure possibilities.

The reaction to idealism was bound to come sooner or later, and was in fact as excessive as uncompromising the stance of idealism was. The most obvious reaction would have been that of materialism. There was *something* that really existed and independent of human “sprit”. That was called by Marxists “matter”, and some believed Marxism to be a realism.

Aristotle does not assume *something* that is devised to guarantee the infallibility of the cognizance a priori. In fact, the very guarantee is but oxymoron, as it is, at the same time, independent of human mind and stipulated by it. The Aristotelian realism is founded on the processes of nature being reversible in the strong sense of the world. Natural processes unfold cyclically. The actual application of the mathematical paradigm of science was implicitly founded on Aristotelianism and the aforementioned idea of natural reversibility. To the

contrary, the linear conception of time proved to be disastrous for the very outlooks of science nowadays.

The nature is a perfect organism. There are no waste products, nothing is squandered. The reason is plain; there is a real Cause of the energy being pumped into any system, and not only that ideal one. A given object retains its identity as long as a required amount of energy is being pumped into it from without. There is a cause and effect. The identity in question is the same as the integrity. But there is no adequate criterion to determine whether *an artifact* is still the same as, say, a year ago. Someday, we *decide* that an object is no more what it used to be (was expected to be). E.g. it is no more a car, but a heap of junk instead. And there is no objective gauge to determine the moment a car ceases to be what it used to be previously. No such ambiguity exists in Nature. A dog is precisely what it is and opposes with the canine indignation every attempt to breach its integrity. This might be called “right of nature”, but is in fact a proof that nature has its own laws and independent of human mind. There is an imaginary “more” and “less” of a car in that decaying one. There is no “more” and “less” in the canine existence. A dog exists or ceases to exist. Those states are discrete, contrary to what artificial objects are. The possibility of the return to same boundary conditions is relatively small but real nonetheless.

Animals cannot defend their “rights”, albeit they seem to display their suffering. Humans are different in this respect. No sound-thinking man likes being pitied just for the satisfaction of the pitying. Being humiliated is not a pleasure, and pusillanimity is not a virtue. Animals, to the contrary, are believed to expect compassion. The statement is not that much childish as rather metaphorical. The human body is exposed to the same damaging stimuli that might endanger the existence of other species and their environment. The latter is but a *token* that the similar harm must have been done to humans, as they are indeed “akin” to animals in some respect.

When speaking about the “rights of animals” Descartes comes in mind who thought that animals are but “machines” – bereft of feeling. We *suppose* them to feel like humans do, but that is but a supposition – nothing more, as no objective evidence of the fact exists. The supposition, however, is valid enough to reject the idea of animals being just machines – lifeless things. Moreover, the same line of reason was applied by Descartes to human body. It cannot come as a surprise that his disciple – La Mettrie regarded humans as sheer machines, disposing of the notion of “human spirit” independent of body, and in fact totally severed therefrom. The fact is that medicine uses animal organs and in this sense humans are really akin to animals. The dilemma whether it is more behooving to reduce life (human life included) to matter (which might be called progressive) or conversely: to treat every guise of life on equal terms with the human one (which might be deemed childish) is confronted and in fact insolvable after accepting miscarried premises.

If we have in mind the perennial dilemma of progress, “Meditations” come in mind and Descartes molding in his hand the piece of wax – the icon of the materiality of the world. In the centuries to come this molding took on both grotesque and macabre forms. The breaching of “animals’ rights” is perhaps just one of them (and the most innocuous). But the core of the problem is that the same harm as that done to animals is, in fact, done to humans. They might be afraid of “articulating” their rights, for the very articulation might be used as proof of their weakness and used against them. Man is a perverse animal indeed. The facts,

however, are plain enough – some harm has been done to the animal part of human nature. Human activity must be harmonized with the cycle of nature, for the sake of humanity itself. Man must be given the right to preserve his natural cycle of life intact and integer and to reach beyond next. His activity is to be enshrined in the framework. Husserl *hinted* to that this human “world of life” is not only (not predominantly) that of nature. But in fact human environment is experienced in the time present no less than rooted in the past inherited (tradition) as well as the future (life) desired to be obtained.

The difference between the Galilean and Aristotelian paradigm of physics happened to be regarded in terms of the inferiority of the latter in comparison to the former. As was said above and contrary to what has been commonly assumed, Aristotle was aware of the possibility of the existence of the mathematical physics. A room was left in his paradigm for such a science. The room was occupied at a certain historical moment. This is a fact. However, once the room had been occupied the very creation of the room went into oblivion.

Is it really an advantage to resign from theoretical thinking? Or conversely, is it rather noxious for science as such to resign from a broader perspective as the *real progress* issues from the unhampered theoretical activity only? The theory might prove to be – paradoxically – more “practical” than any praxis at all. It is the problem of natural environment broadly speaking. Humans *by nature* are rather rational than practical beings. Once the natural environment is safeguarded, the practical activity can issue and perhaps more dynamically than that obstinately clung to before.

2. The mathematical abstraction

Each human activity consists in imposing order on some objects. Chaos is abhorrent to humans; it jars on what is felt becoming and proper. Apparently, animals are unable to loathe disorder. Their nature does not allow them to perceive it; to perceive *some objects* being disarrayed. An animal might loathe *an object* that is undesirable to it, because it bears upon the animal in an inconvenient manner. To the contrary, the bearing of the objects seen, as it were, from distance, is of no importance to the animal. Now, feeling the discrepancy between *distant* objects seems to be characteristic of man. Man does not need to be *one of the objects concerned* to feel the discrepancy.

Loathing can be spawned – understandably enough – by the sheer fact of the objects about to be used being disarrayed. The same holds true *mutatis mutandis* as for the disorder of signs – the words spoken or written in particular. For the signs are – at least in one respect – material objects indeed. The words shall not be spoken or written slovenly. The obligation is connected with the social nature of man. We expect the objects to be as handy as prepared just for us and being ready to be used; being at hand. The lack of the logical coherence of an utterance is of the similar nature. It jars upon us. It clashes with our sense of what is befitting and suitable.

Consequently, sentences written or spoken ought to be at their proper place, just as any instruments in general – just for the sake of being possibly used. The words have their proper place, which is perhaps especially visible in English, in which the collocation is so important.

A false statement might have a certain heuristic value. Similarly, an instrument that happens to be casually at hand might prove to be handy. It does not need to be prepared *directly* for the possible use. However, the condition *sine qua non* is a minimum of order to be found nonetheless. A sentence built illogically or grammatically incorrect is as useless as an instrument buried under a heap of garbage.

Accordingly, the very possibility of using things requires previous cognition of the relations amongst them, because the relations constitute the order in question. The work about to be done subsequently is but the multiplication and boosting of the already existing order. Both individuals and humanity as a whole face the primitive natural order of objects. Some objects happen to be prepared by others, but the elementary order has already been given by nature. Consequently, every human activity requires the recognition of the natural order of things – at least indirectly. Otherwise human activity would resemble filling a Cask of Danaids without any hope of retaining anything at all peremptorily. The very *subsistence* of the edifice about to be raised would have been problematic, and the edifice itself shaky. The progress is but a multiplication of the given. For zero multiplied no matter how many times always equals zero.

Humans are social beings. Living, say, in the 20th century, an individual faces an order of objects already brought out by previous generations. A certain degree of the order is faced and characteristic for a given stage of civilization.

Still, humans are social beings only in as much as they are rational. The situation of a civilized man differs in nothing from that of any disciplined person i.e. that guided by the reason in his/her everyday activity. One can consume the effects of one's own labor in pretty much the same way as he/she consumes the effects of the work done by the others. Psychologically speaking, one's identity is constituted by the very fact of the effects of one's work being accumulated and consumed effectively. Analogically, one's social identity is that of being able to accumulate and consume the effects of the work done in a society. One can consume effects of his own work as a rational being and the effects of the work done by the others as a social being. But responsibility (i.e. the relation between the rational and the interpersonal) is indispensable for social activities and reflection on what is natural also. Nobody, properly speaking, can be just or unjust to himself, unless indirectly. Now, (the social) justice stems from what is just (fair, right) i.e. in accordance to (the individual) reason. Analogically, an action is righteous if "right" and opposed to "left". One direction is privileged. Things are not at hand indiscriminately; the majority of humans are right-handed, which is a sign that a primitive choice must be done if handling anything at all.

However, one can assess the effects of one's work inadequately. If St. Thomas really uttered the words: *omnia quae scripsi videntur mihi sicut pallea* at the end of his life, that would be – no doubt – an unjust assessment of what he had really done. The statement could have been *subjectively* valid as a perspective of the absolute cognition (of God) approached him, because the full sentence was: "All that I have written seems like straw *compared to what has now been revealed to me.*" Thus, the statement is *objectively* (i.e. for us; for all the people) inadequate. We are unable to take on the same perspective as Thomas did. We are *not*

justified in uttering the statement. Objectively speaking, Thomas's work is of a great importance.

The span of ca 700 years is concerned. Normally, for an individual consuming the effects of his/her work the span is, at best, that of, say, 50 years. Nonetheless, the ideas both of me myself and of the persons that passed away several centuries earlier live in my mind in quite a similar way. The truth was expressed in the Latin adage: *In bibliothecis loquuntur defunctorum immortales animae* (Plinius, *Naturalis historia*, XXXV, 2). "Immortal spirits of the dead speak in libraries".

The simplest way of ordering things is that of arraying them according to their magnitude and position. Thus, a special (elementary) attitude of man towards the outer world appears in seizing quantitative relations amongst things. However, non-living things (those handier for us are lifeless indeed) have seldom neatly perceptible boundaries, and the objects sometimes are even difficult to sever (producing may consist first of all in extracting simple elements from what is complex). A crystal has such a neat structure, but raw materials have not. As for animals, they display their own vital activity, and resist breaching their integrity (the boundaries of their bodies). Animals can be domesticated but every attempt to treat, say, a horse like a *thing* is doomed to failure. However, this holds true not as to animals only: the general order of nature demands that the natural boundaries of things (no matter how complex) should be preserved and assessed adequately. Blurring the boundaries is deadly to *human* life. A carnivore devours its prey ("destroys" it), but humans are persons *before* being carnivores. They recognize what is just and ordered *before using* things. A minimum of order is indispensable. Our thoughts (our ideas) ought to be clear and distinct (which Descartes demanded of them), even if the minimum proves in some cases insufficient.

Now Descartes did not answer the question whence the ideas came, unless the reply should be that they were engraft in our mind by God. The answer might satisfy the natural desire for a source of order, but it is not an answer expected of a philosopher. Although the ideas might well be generated by God Himself, the question remains open as to *how they were* so. The question is purely philosophical, because the aforementioned "how" includes the mode of action of the Principle whose existence and way of acting is by no mean obvious. In fact, it must be demonstrated. The existence of the Truth (with the capital T) is just as problematic (to be problematized for the sake of certitude) as the existence of any source of existence at all. It cannot be postulated, for postulating is foreign to philosophy in general. The fact of the existence of God must be *provisionally* dropped.

Descartes declared at the beginning the aim of his "Meditations": to get to know God's existence. But the problem is how infallible the knowledge proposed in Mediations. The idea of God might be quite distinct in someone's mind, but it is not tantamount to that it is absolutely unshakable. All possible difficulties must be anticipated in providing scientific certitude of the knowledge of God the "first philosophy" offers. "Simple" solutions might prove insufficient; even if some "sophisticated" ones might prove superfluous. Plain ideas might be psychologically evident, but the existence of God is less manifest than the primitive data of the ordinary experience. The undoubtedly true knowledge of God must be acquired from a minute analysis of the complex empirical data.

Human mind remains in a certain relation to material objects and the nature of the relation is to be carefully elucidated. No doubt, humans are, at least partially, objects of the

material world. True, their presence in it might involve something else, but a more complex (and effective) relation is *a* relation nonetheless.

The specific elementary (cognitive) relation of human mind towards material objects consists in arraying them and is described by Scholastics with the term of *abstractio formalis*. The meaning will be elucidated presently.

The (cognitive) situation could be pictured by the image of the human mind occupying, as it were, a “place” between two material objects, so as to determine their mutual relation. In the effect, the ideas of objects are grasped, and as clear and distinct as the objects are *distanced*, i.e. abstracted.

Mathematical objects differ essentially from those material ones. Material objects are perishable, which is not the case with those mathematical ones. If the supposition of the latter being just “in-betweens” of the former is right, the problem of the nature of the latter arises. For, as relations obviously depend upon things related to each other, the fact that the things are perishable would make for what is founded upon them to be perishable too. As least it seems so. The problem of relation is difficult itself and will be tackled in the next Chapter of the present book. For the time being, let us observe that being related is prior in our cognition to a relation being known to inhere in a subject. Naturally, a subject is related to another one, but in the order of cognition, the existence of subjects comes but later on. This is especially the case with motion. Some objects are related to each other, but it takes some pains to determine their nature. For some of them might be almost immovable and of a more stable nature than those actually moved. The problem of the apparent movement of the sun was touched upon in PREFACE. No one ever doubted that the sun *seems* to move. The problem was to *ascribe* the relation of motion to the definite subjects. In fact, both the sun and the earth move along ecliptic orbits around the point distant ca 500 km from the center of the sun. The fact that the sun is *almost immovable* (for 500 km is almost nothing in comparison to the diameter of the orbit of the earth), is difficult to settle, nonetheless.

Thus, the inherence in a subject need not determine the very existence (fact) of being related. Otherwise, the cognition of unchangeable relations among the changeable objects would be impossible. The problem of the ontological status of mathematical objects was addressed by Plato, who ascribed to them a special mode of being and independent of material ones. Mathematical objects were somehow similar to ideas, or rather conversely: the very invention of the ideal world was but a by-product of Plato’s mathematicism. However, were we to suppose that mathematical objects were rather relatives than relations (viz. rather related than inherent), and the former *cognitively* prior to the latter, Plato’s stance would be perfectly justified. The only problem consists in that the order of things does to correspond directly (as Thomas has it) to the order of cognition. In fact, the cognition consists in *reversing the order*, which is expressed in the notion of abstraction. Words do not mirror the reality; neither do ideas so. If they *happen* to be clear and distinct, it is because of the intellect the renders them such.

Moreover, if material objects occupy a room, the room itself might be believed to be somehow similar to material objects, and seized “almost” abstractedly, which was asserted in *Timaeus* indeed. The room was called by Plato *χώρα*, as was said above. The Platonic *matter* is called *Dyas* (“less” and “more”) in the esoteric writings, and the term seems to denote the idea of counting (computing things). “Right” and “left”, to the contrary, should be

rather, as it seems, ascribed to living things, although non-living objects can be possibly characterized by these concepts too. The idea of the “right direction” (relevant to a living body) is at odds with the absolute symmetry of mathematical objects.

Plato attempted to seize the room among *all* things as a mathematical entity and called it *χώρα*, which is in fact nothing but the three-dimensional space. But then, the problem arises what the space in question corresponds in nature to; i.e. what the relation is *really* founded upon.

The existence of the physical counterpart of that mathematical “substratum” had been believed in until Michelson and Morley carried out an experiment that falsified the assumption. The substratum had been called ether. The ordinary physical objects had been considered as moving in relation this substratum, which, in fact, was nothing else than an absolute physical frame of reference. (But on the other hand, “moving in *relation*” does not seem to be sheer mode of speaking; it is significant that the philosophical term of relation cropped up anyhow.) Although no mathematical frame of reference can be privileged, that physical one would have been so nonetheless. The substratum would have existed and independently of objects possibly moving in it. Moreover, the substratum would have had the same physical properties (as any medium had) of, say, springiness and inertia, that would have determined the velocity of the propagation of the wave. Similarly as the springiness and inertia of air determine the speed of sound, the properties of ether would determine the velocity of light. Now, the speed of light is determined indeed, but is not so by any properties of a medium it moves in.

Ether proved to be bogus no less than e.g. phlogiston was. There is no distinguished physical frame of reference, albeit its existence would satisfy the desire to treat the physical world “realistically”. There are but relations between objects known first; in other words: all relations amongst objects (amongst no matter how many objects) are mediated by the binary structures of objects essentially related to each other. There is no the “third element” to be found between the moving and moved. The special theory of relativity described precisely the situation.

Ether would have been as convenient a means to substantiate the mathematical abstracts in the real world as the “matter” of Scientism was, and point out to the physical counterpart *directly*. Now, such a possibility was discarded empirically first (in the aforementioned experiment) and theoretically later on in the special theory of *relativity*. For it are *relatives* in nature that are seized originally.

The material existence of what is *between* elementary objects was falsified. The only object that can possibly exist between them must be immaterial, which is the case with human mind. The existence is described by the aforementioned term of *abstractio formalis*. Human mind is immaterial as possibly able to grasp peremptorily the relations between things.

The situation might be attempted and illustrated by the example of two parallel mirrors. Such like mirrors used to be placed against each other in e.g. train compartments. Some number of reflections can be possibly seen and as many as the axis of sight approaches the direct perpendicular line joining the two mirrors. The number is practically finite and this because of the human eye occupying a certain place and being as material as any other object. The human eye cannot become a sheer point and located on the perpendicular line joining two parallel planes. Thus, the ideal “seeing” is practically impossible. The infinite number of

reflections is impossible to grasp by any material object, because the latter obstructs some of them. If the human eye had been a “point”, that would have been possible.

Neo-Platonists relished in resorting to the notion of reflection. In fact, they used rather the term of the exemplar and image than the term of the cause and effect. The mathematical pattern dominated over the natural order. The purely physical had been lost sight of. Two parallel mirrors are equal to each other, and none of them can be prior to the other (as a cause is toward an effect). Still, the real light is a physical entity and not that much a beam (line) but rather a wave stemming from a source (a dipole). The asymmetry of physical objects was described in the special theory of relativity and some insight into the originally cognitively given obtained. However, as soon as we depart from the primitive cognitive situation, we tend to seize the objects symmetrically (to idealize them) and to forget about their original “position”. Be that as it may, both mathematics and science in general grasp the potentially infinite. Now, according to Aristotle, the universal notion is precious because it reveals *the cause*. It does in mathematics but *indirectly* so, as universal notions are rather *used in it* (applied in experimenting) than grasped thematically, but to Aristotle’s mind mathematical thinking is not the only possible to man. However, some philosophers are prone to idealize all objects modelled after the mathematical pattern.

Ockham’s theory of supposition concerned the very use of mathematical notions. The universal stands for some individuals, but *the cause* why it was so was not given. Man was a spectator of the drama of nature displaying before his eyes. Perhaps he might well be so, but the nature of seeing (being a spectator) must be elucidated nonetheless.

No one object is able to occupy the room between two elementary material objects save an immaterial one. The intellect stands *between* objects although does not stand *for* them. It stands between two relatives of the physical event and can grasp not only the mathematical infinity of “reflections” but the asymmetry of nature too. The universal tackled by scientia naturalis is possibly reiterated in infinite facts, but the inverse flux of time is not possible. The faster-than-light communication would have reversed the causal relation. The reflections might well be supposed to be infinitely reiterated and thus the mode of cognition of physical objects would yield to that mathematical one. The notion of physical cause might be lost sight of, and the relation of mathematical objects to the physical world made unclear (blurred). Paradoxically, the mathematical objects are as clear and distinct as their relation to nature unclear and enigmatical. The relation seemed to be but pragmatically valid.

Human intellect cannot *stand for* particulars, but can *under-stand* them nonetheless. Scientia naturalis allows the understanding. If both kinds of abstraction (the mathematical one and that used in scientia naturalis) are accomplished, the universal validity of natural laws will appear, and the relation (the real one) of mathematical objects to those physical ones, too.

Thus, the nature of seeing mathematical objects appears. Still, it remains unclear what role material organs (as e.g. the human eye) play in the cognition. In other words: the genesis of the cognition has not yet been fully elucidated.

The question was asked at the end of the 19th century, and the solution was called Psychologism. Mathematical objects originated in human mind in pretty much the same way as any empirical notions do. Consequently, the equation $2 + 3 = 5$ was but empirically valid. It might have occurred that human mind evolved in the way rendering the equation invalid.

Edmund Husserl was an advocate of Psychologism in his first philosophical work – *Die Philosophie der Arithmetik*. However, the works of psychologists sank soon into oblivion, and Husserl himself turned towards Apriorism. Mathematical objects were regarded as purely ideal, and that following the principles laid down by Descartes. Still, the relation of “ideas” to the material world had remained (since Descartes) unclear. It was something of a mystery, and Descartes resorted to the veracity of God to guarantee the validity of the relation.

The problem is that of the possible presence of the immaterial between the material, and might be called the general problem of cognition. To take into account sheer quantity of things (the ideal characteristics of numbers) might appear suggestive, but insufficient nonetheless. In particular, the problem of how we *get to know* things after having them ignored before is pivotal. Ideas originate in our mind (even if they do not evolve literally speaking) and their being matured equals to being at their proper place.

It is the case with the *proper* quantity of natural things also. The proper quantity is ascribed to every specimen of a given species and typical of the latter. An individual grows up to *a certain quantity* only, which is undeniable at least as for living things. Jonatan Swift might have imagined the world in which the proper quantity of species did not exist but it cannot be doubted that this world is but an imaginary one. Individuals obtain (attain to) their *proper* quantity in the *real* world.

Let us focus on the (alleged) equivocation included in the expression of “obtaining” the proper quantity. For we probably obtain knowledge in the same way as any natural perfection is obtained (attained to): the process (of cognition) seems to be as natural as the natural generation is. Animals obtain the proper quantity and that depending on the relations to their environment. They do this not that much mechanically (as Descartes believed) but rather using the cognition prerequisite to *a uniform* acting, called the animal instinct. The uniformity makes for the difference to humans, as the latter can use the cognition in the way they *decide* to and are free to do it. To the contrary, an animal chooses an option only relevant to it, and is organically unable to seize an idea which is *objectively valid*; it chooses the *subjectively* valid one only. Animals cannot get to know mathematics for instance, although some believed to “understand” animals’ language. Be that as it may, the “language” in question is not similar to the (formal) language of humans; it differs therefrom essentially. Animals’ language is the existential one and existentially engaged. It cannot be abstract. Animals naturally opt for one of two given objects and their presence in the world cannot be disengaged. Consequently, it is not the “animal language” that is similar to the human one; to the contrary: some human activities *happen* to resemble those animal ones and their language. Albeit being potentially rational, they might assimilate to gibberish. An animal opts for one of the contraries *almost* mechanically, as the animal instinct works incomparably smoother than the human understanding does. The human intellect is endowed with incomparably vaster potentiality; it can both evolve and *degrade* approaching its proper place or departing from it. Possibly, the proper place of humans is not to be found in the world after all, as human cognition transcends it, but originally, humans try to determine their position in nature indeed.

We-humans obtain our knowledge when “standing” between objects (under-standing them). Moreover, we can – and this contrary to animals again – grasp the way we do this; we

can *reflect* upon our actions and correct them accordingly. This holds true both to methods used in science and prudence regulating our moral actions.

The quantitative relations amongst objects can be seized first of all. There is no evidence that animals can form any notions similar to those mathematical ones. The specificness of human presence in the world consists in humans being able to form theories, and the mathematical ones in particular. We can assume that the most general theorem of mathematics expresses the essence of the possibility.

The most general equation of mathematics is Euler's equation:

$$e^{i\pi} + 1 = 0.$$

The physical sense of the equation will become visible if the variable (x) is introduced; it yields the equation of the harmonic oscillator:⁴⁸

$$e^{ix} = \cos x + i \sin x;$$

(the variable (t) can be introduced possibly too, and the equation of the wave in general issues; for the harmonic oscillator in the *standing* wave).

The only problem is to determine the way a harmonic oscillator obtains the equilibrium described in the equation. Now, it appears that the way a harmonic oscillator *maintains* its identity is analogous to the way it *obtains* it, and expressed by the same natural number e , for the problem, in general, is that of obtaining the proper magnitude mentioned above. The natural magnitude is meant and there is a special mathematical notion of the natural in question.

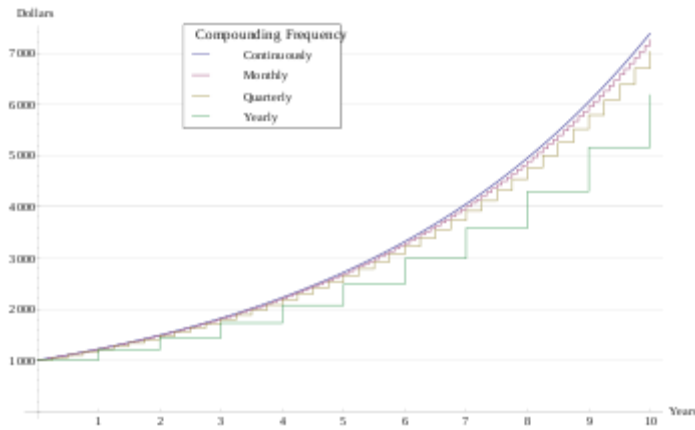
This constant e was discovered by Jacob Bernoulli when studying the question of the compound interest. An account starts with \$1.00 and pays 100 percent interest per year. If the interest is credited once, at the end of the year, the value of the account at year-end will be \$2.00. It was asked what happens if the interest is computed and credited more frequently during the year. If the interest is credited twice in the year, the interest rate for each 6 months will be 50%, so the initial \$1 is multiplied by 1.5 twice, yielding $\$1.00 \times 1.5^2 = \$2.25$ at the end of the year. Compounding quarterly yields $\$1.00 \times 1.25^4 = \$2.4414...$, and compounding monthly yields $\$1.00 \times (1 + 1/12)^{12} = \$2.613035...$ If there are n compounding intervals, the interest for each interval will be $100\%/n$ and the value at the end of the year will be $\$1.00 \times (1 + 1/n)^n$.

The sequence approaches a limit with larger n and, thus, smaller compounding intervals. Compounding weekly ($n = 52$) yields \$2.692597..., while compounding daily ($n = 365$) yields \$2.714567..., just two cents more. The limit as n grows large is the number that came to be known as e ; with *continuous* compounding, the account value will reach \$2.7182818...⁴⁹

The scheme can be illustrated by the following graph:

⁴⁸ R. Feynman, Lectures on Physics, I, Ch. 22.

⁴⁹ [https://en.wikipedia.org/wiki/E_\(mathematical_constant\)](https://en.wikipedia.org/wiki/E_(mathematical_constant))



The value of $1/n$ is determined as:

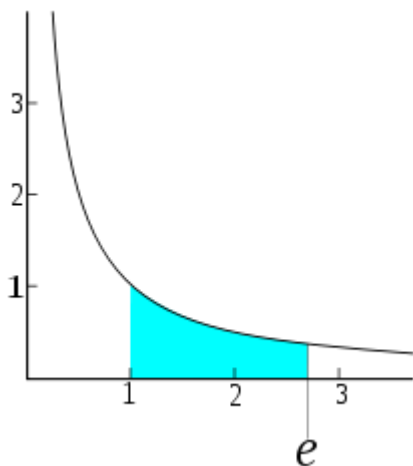
$$\frac{1}{e} = \lim_{n \rightarrow \infty} \left(1 - \frac{1}{n}\right)^n;$$

and the e constant as:

$$e = \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n.$$

The first of them describes in addition the best disposition of probability. $1/n$ is the probability of the loss in the hazard-game; n is the number of trials. Thus, the sense of the Aristotelian margin of uncertainty of physical laws becomes visible. The laws of nature account for generation of new substances (harmonic oscillators are these), but natural generation can be thwarted by some causes occurring *incidentally*.

Moreover, the same natural unity is given by the integral:



Mathematical objects appear in our imagination in the way similar to natural objects appearing in the material world. There is the optimal growth in nature similar to the best compound interest in banking.

It was asked in the Middle Ages about the so-called principle of number. The unity was believed to be this. Moreover, this unity was by Thomas carefully distinguished from the transcendental one. Now, if Euler's equation is taken into account, the difference becomes

plainly visible. That is the problem of the “in-betweens” (borders) of natural things and the “in-between” of nature and the mind; the problem of the optimal increase of the magnitude that accounts for the validity of mathematical theorems in the cognizance of the material world.⁵⁰

A procedure can be carried out and opposite (reverse), at least to some extent, to that of forming mathematical theorems. If the latter is to be called *abstractio formalis*, the former is commonly called the experiment.

Still, there is no certitude as unshakeable in experimenting as in the (“a priori”) sciences called the exact ones. There is but an approximation. The borders of experimental objects, as was noted above, are far from being as neat as those natural ones. In fact, it is an experimenter that determines them more or less distinctly. Kant believed them to be determined arbitrarily. Consequently (if addressing Kant’s stance), two notions must be carefully distinguished: the notion of experience (completely overlooked by Kant) and the notion of experiment, which is but *indirectly* concerned with the natural borders of things. To the contrary, the natural borders of things are specifically “neat” and not possibly graspable in the elementary quantitative terms only. Thus, the origin of mathematics becomes visible: the elementary (which is not to say: the original) order of natural things is the most *exact* one; the plainest, but, at the same time, the poorest. The order of the objects of experiment is mediated by an experimenter’s mind and body (and an apparatus used), and can become questionable as soon as the origin of the abstract notions is lost sight of.

The objects of the experiment are endowed with the nature determined (to some extent) by the very procedure of experimenting and can be even deemed set down arbitrarily (as in Kant) i.e. depart from the natural world as far as to make the whole edifice of science transcendental (which is to say: poised in the air). Obviously, the question can be asked if, and possibly to which extent, the mathematical magnitude is an entity. Understandably enough, the question cannot be answered in the Kantian terms.

Some substitute of the natural determination of the objects faced in the experimental science appeared. It was called Operationism. It puts up with the notion of usefulness instead of reality. In fact, it was some guise of practicicism and thus nothing radically new in science. A special term “For All Practical Purposes” (FAPP) was coined for the notions about to be used. The “nature” of the objects was “determined” by them being practicable. The obvious fact was overlooked that things are only practicable as *means* leading to some end. Now, the end of cognition was overlooked.

It could be asserted that distinguishing the system and environment was but a matter of convenience and the latitude of thought (in such a guise) was only desirable in science. Albeit one could not dispense with the notion of the cause and effect in the *everyday cognition*, and the two aforementioned terms seem to correspond to them, it was believed that science *could and ought to* do so nonetheless, and every attempt to see the world in the ordinary way was to

⁵⁰ Obviously, the principle of number (-1) shows up – so to say – at the border of the natural and the ideal mathematics generally speaks of. It might be called the imaginary number not because being imaginable, but because being effective principle of strict (exact) imagining accomplished in mathematics (Cf Chapter III, introduction).

be banned (labeled as naive). The scheme would work effectively *for some spell of time* indeed, but in a long run it must prove disastrous for science. The boundary conditions of the experiment must be determined in the *objective terms*. Possibly, the determination is not to be expected in physics, but it is essential for physics to acknowledge it nonetheless.

Moreover, it could be assumed that distinguishing the system and environment was as neat as more and more circumstances (for some time provisionally deemed irrelevant) were taken into account. The very term of approximation involves such a notion. However, normally we expect to *approach* but a thing *seen* in some way, otherwise we are unable to ascertain whether the direction taken is *right*. More circumstances, accordingly, might be of convenience as well as be a burden hampering the effectiveness of the progress. Information, if too prolific, cannot be effectively processed. The problem of the metabolism of information (formulated by Keþiński) is serious.

It is known that the invariance of the Newtonian Laws of mechanics is approximate only and practicable for objects that move with the velocity significantly less than that of light. Otherwise, the Lorenzian invariance is valid, not the Galilean one. Now, it could be imagined that there is no absolute invariance after all. All the possible progress advanced as well towards the infinite as indefinite. Consequently, it advanced into the uncertain and with no prospect of obtaining the objectively valid knowledge.

After quantum mechanics had been discovered, the problem of ontological status of its objects arose. It could not be believed any more that a “matter” existed in the way Avicbron imagined it. The problem was that of what the objects *really were*. Etymologically speaking, both the *real* world and the way we *realize* something happen might be meant. According to the Copenhagen School, the objects of quantum mechanics could not be deemed real in the ordinary sense of the word; they were by no means similar to those “human” ones. The observed makes up the whole with the observing (instrument). The instrument, in turn, records but the probability of certain magnitudes possibly occurring. Commonly, objects are so called as they are supposed to exist *before* being observed, and the collapse of the wave function (connected with an object) corresponds to that common notion. The object existed before being measured and its being measured was its being distorted. Now, the Copenhagen School’s stance is completely antirealistic and contrary to the notion of the *proper state* (magnitude) of objects. Understanding them as *proper*, in the manner mentioned above, were nothing save a mode of speaking.

Hardly anything else was to be expected of sheer *contrasting* the purely a priori notions with those empirical ones. The further we depart from the former the less precise the latter must be. Consequently, the stance of the Copenhagen School would have corresponded perfectly to the fact of *departing* from the a priori knowledge, although not to the fact of the departing in such a way being of any advantage. The objects would have been something of the mythical Proteus evasive and assuming various guises without being possibly graspable. Still, the question of what mathematical theorems are *really applicable* to is unavoidable.

The everyday cognition distinguishes objects and no one doubts about their existence. To the contrary, Schrodinger’s “statistically living cat” is but an offspring of imagination. Moreover, the responsible action requires an object being distinguished precisely from its environment. Albeit the real circumstances of the natural objects can be *practically innumerable*, the fact remains that the integrity of the objects of the environment is *directly*

affected by appropriate or inappropriate actions. Now, it is the integrity first of all that is grasped in the abstract notion.

The theoretical foundations of the stance of the Copenhagen School had been laid down by Neo-Positivism being, in fact, something of a bequest of Kantianism. The responsibility assumed a certain savor of subjectivism, traditionally unknown. It went hand in hand with the commonly known formalism of scientific theorems. It observed both in morals and in the theory of science. The theory of science should be formed after a formal pattern.

However, the simple fact that no matter how elaborate and formal a theory might be, it must be expressed in the conceptual language first was overlooked or rather ignored on purpose. Michael Faraday wrote the book on physics without using a single mathematical equation. The contrary is not possible: it is unworkable to write a handbook of mathematics without using a conceptual language. Consequently, were we to keep the term of the “formal” language, this could be by no means identical with, or restricted to, the mathematical one.

According to Neo-Positivists, the everyday language could not be a safe basis for exact theories. The fact might well be possibly true as to the language commonly used and affected by uncertainty, but not as to the conceptual language as such. The latter seems to be indispensable for exact notions to refer to *something definite* at all. Distinguishing objects operationally only can be but a substitute and provisional for the certain cognition. Moreover, the objects seem to be seized in concepts corresponding to their natures, whereas the uncertainty in question is rather connected with the concepts being but *subsequently* blurred (when used). Possibly, they are intellectually known first, and the lack of preciseness issues either from them being *not yet* abstracted or being abstracted and blurred *subsequently*. For a science to be an approximation, the certain cognition of what is approached is indispensable.

John Duns Scotus deemed it indispensable for the objects of science to be univocal. In fact, the univocity of being is a Leitmotiv of his philosophy. The univocity was connected with his theology and the ontological status of the formal component of the cognition, too. The theological in question, however, was dropped in modernity, unless the notion of the Great Mathematician should be considered the “theological” one. For it is in mathematics really that the acclaimed univocity comes to light most apparently.

No doubt, equivocation is to be avoided in science. Still, it is both univocity and analogy that is opposed to equivocation. The terms of a syllogism are connected with the neutral copula “is”, which might seem to be uniformly applicable to all objects. Thus however, the relation of the formal component of cognition to the empirical one would remain something of an enigma (the uniform allows no distinctions). According to Scotus, the material things only *occasion* the certain knowledge, they do not *cause* it. Consequently, in Leibniz, Hume, Husserl and Wittgenstein the whole (the totality of being) was split into the corporeal world and the spiritual one: a safe abode of the “human spirit”. The existential condition of man was affected by this dualism. According to Scotus, the abode existed in between the human spirit and the divine one, and called *obiectum secundarium intellectus Dei*. Still, precise distinguishing between the profane and mundane is practically impossible. Moreover, a “mundane” solution was stipulated as soon as the *theological* bequest became something of a burden. Hence, the *mathematical* Elysium of human spirit came into existence.

According to Aristotle, the material objects not only *occasion*, but *cause* our cognition indeed, which was expressed in Thomas’ famous formula: *res sui notitiam in anima gignit* (a

thing produces knowledge of itself in the soul)⁵¹. The formula elucidates the nature of the relation between the mind and the real world. The scientific method, in turn, demands the very cause being seized in the middle term of that syllogism, and the existence of the “is” in the premises and conclusion does by no means imply that the cause and effect are formal in the same degree. In fact, Thomas claims the contrary: [...] hoc nomen principium ordinem quemdam importat; hoc vero nomen causa, importat influxum quemdam ad esse causati (For the term principle implies an order or sequence, whereas the term cause implies some *influence on the being* of the thing caused)⁵². The “is” of the case is “more”, as it were, intense, and more dynamical than the “is” of a mathematical definition.

Accordingly, there is a real relation between the human spirit and the material world. And the very responsibility demands “committing a naturalistic error” as incriminated by Moore. The same holds true as to the responsibility for scientific statements. We demand the coherence of argumentation as well as the science not being used against humans and related to their real welfare.

The problem of incertitude was by no means new. In the 17th century, the advocates of various stances in morals appeared. Probabilism was one of them. There can be no doubt that the circumstances of a moral act are potentially innumerable. Were the scientific activity “practical” in this sense, the same uncertainty would have affected scientific statements. Now, the practical cognition might be really affected by this uncertainty. However, it is by no means certain that humans are the beings of praxis first of all. Perhaps they are rather “contemplating beings” (and this defines their nature best, according to Aristotle) and able to resist the flux of changing events. The safe abode of human mind, mentioned above, is to be found, consequently, in *purely* theoretical thinking. The abode is, at the same time, the personal one, because a person is the one for its own sake and not possibly used or manipulated. The assessment of personal responsibility must be carried out theoretically. Even if man cannot be possibly sinless, he can, nonetheless, *be perfectly* aware of the way he committed a sin or error. The practical does not need to affect the theoretical in man, but, on the other hand, it is impossible for the practical to exist without being triggered by the theoretical.

The existence of substratum (a definite realm of being; of *what* things really are and can be compared in) appears indispensable in science. Aristotle called it γένος ὑποκείμενον. However, it is naive to substantiate the substratum as “matter”, or “quantity” or whatever else and existing independently of things. Nothing of the sort is, in fact, implied by Aristotle, but rather a mode of abstraction that accounts for the substratum to be known peremptorily, viz. have a certain scientific character.

The applicability of mathematical theorems to the cognizance of the material world can be checked empirically. But the experience (different from the experimental cognizance) of the material world must come first. It accounts for the proper value of the wave function

⁵¹ De Veritate, q. 1, a. 10 ad sc. 3; R. W. Mulligan.

⁵² Sententia Metaphysicae, lib. 5 l. 1 n. 3. R. W. Mulligan (no 751).

<https://dhspriority.org/thomas/Metaphysics.htm>

having quite perspicuous sense. A scientific apparatus might distort the image of an object; the natural object does not need to.

The wave function (associated with an object) decreases exponentially when met with another material object. The sense organs can be such like objects. However, the cognition consists in retracing and, as it were, reversing the process. The cognition is in fact the abstraction.

When grasping an object we perceive indirectly the best possible way objects can interact with each other. The experiment, to the contrary, proceeds *synthetically*. An apparatus is something artificially *shifted between natural objects*. An apparatus is not likely to spawn the vital cognition in the way material senses do. It is but useful and approximates cognition. Natural organs are, to the contrary, *perfectly adjusted*. That is why the everyday cognition and the language that follows might have certain preponderance over applying mathematical theorems to the material world.

3. Number *e*

It is pivotal for the kinetic proof of the existence of God to differentiate between the transcendental unity (the unity of being) and the mathematical one, because when speaking about the moving and moved about to be distinguished, the philosopher must settle the natural border (that of being) between them both. Now, the natural in question is *transcendentale* of Scholasticism; the property which accompanies all categories of being. However, “transcendental” does not mean: “super-natural”. The term was misunderstood by the tradition of the so-called German transcendentalism, or rather: was reinterpreted in the spirit of Avicenna’s philosophy. There was, in Avicenna, but one real principle of generation: the transcendental, super-natural one; the one which initiated the evolution of nature. Motion but occasioned the origin of species; it prepared matter for receiving forms. The unity and existence was superadded to things moving and moved as a “seal” of their reality by a transcendental experimenter called Dator Formarum. The same source was the source of (human) cognition, and parallelism existed between (what was about to be called) “reality” and “consciousness”. Avicenna inspired the generations about to come.

It might be tempting for an experimenter (who follows the principles laid down by Kant), to try and set down the boundaries of the objects of an experiment quite arbitrarily (for setting down “occasioned” our cognition). It had been so indeed, until the very science (and perhaps as unexpectedly as unwillingly) stumbled upon a difficulty connected at least indirectly with the borders in question. The problem was, to be sure, methodological one (at least originally), but proved to be far more important and pregnant with meaning. It was that of what things *really* are. Originally, the so-called microscopic objects were regarded and the problem might have been seen from purely practical point of view. The “ordinary” objects were not in the least affected by the discovery of quantum mechanics. However, if Kantianism was meant to be a scientific “revolution”, a “counterrevolution” appeared next. Some natural borders of the objects were discovered and the question of how “small” they

must be to be regarded as *real* is of no key importance. Science itself had advanced towards the until unanticipated. It stumbled upon both the problem and objects (the real ones) literally.

Moreover, the same scientific “counterrevolution” re-vindicated the validity of the minor premise of the kinetic proof of the existence of God. It is impossible to advance in the chain of causes and effects into infinity. The assumption might have been at odds with the nature of numbers if understood in the terms of the set theory. Continuum is infinitely divisible indeed, and the set of causes might have been supposed to be so, too. But the latter sentiment was in fact falsified by quantum mechanics also. There are but discrete levels of formality in the real world.

There is nothing new in the statement that continuum might be infinitely divisible, and Thomas in fact claims the same. However, the problem is *where* the continuum in question is to be found in *nature*. Quantity, according to Thomas, is an accident. Consequently, it must *inhere* in something. In fact, it is an accident of an item of motion (a fact); of a complex of a cause and effect, and in *that extent* only it is infinity divisible indeed. In other words: it is but *relatively* divisible into infinity. Mathematics focuses on that part of the real world, whereas the real *principle and the end* of the continuum are disregarded. The contrary is the case with the philosophy of nature. Mathematical thinking could be unduly extrapolated and, consequently, the *principle and end* (mentioned above) lost sight of. However, the mathematical division is only applicable to *a movement*, whereas the distribution of the formalities of being in the natural world cannot be continuous but discrete only. In other words: the distribution of movement as such (of the cosmic one) cannot be monotonic and infinite. Things do not “evolve” save within natural borders determined peremptorily.

The Aristotelian Physics envisages the aforementioned boundaries of natural objects directly. As to quantum mechanics, it are only the interpreted conclusions thereof that can be juxtaposed with the statements of the Aristotelian Physics. The latter had been deemed naïve as concerning the objects that are of no importance for the exact image of the world. However, the *exact image* itself proved to be but oxymoron. The existence of the ideal objects such as: point mass, perfect gas, ideally stiff body and the string of the minimal amplitude of oscillations, is impossible in the real world. Science itself ascertained as to the essential (or even “existential” i.e. affecting the scientific praxis) restrictions of those “ideal” objects. This is not only the problem of the applicability of the notions in question; the problem is (or might be) that of their ontological status (status of beings).

Although the Cartesian mathematicism was an heir to the Avicennian (philosophical) tradition directly and the mathematicism mentioned above was espoused by Avicenna himself, it was in Antiquity that the distinction between the transcendental unity and the mathematical one had already been blurred. According to Thomas, Pythagoreans and Plato identified the essence of real things with numbers. Avicenna’s idea was more sophisticated; the unity was “transcendental” in the sense of being imposed upon the material world by what could be called *Dator Formarum* first and the Absolute Being eventually (his followers speak of evolving Nature and of the Great Mathematician respectively). The unity and existence are but “accidents” bestowed by the Avicennian God upon the “evolving” world. The term “accident” might be misleading nonetheless, as the Aristotelian accidents are something more than what is casual only. The “accidents” were, in Avicenna, but loosely connected with their subjects and thus about to be called “objects” in the modern sense of the word. It is worth

mentioning that the very term of “object” is not to be found in the Aristotelian glossary, and in Greek in general either. The term is, understandably enough, not to be avoided, but it is worth having in mind that it usually necessitates some presuppositions. For the Aristotelian ὑποκείμενα are considerably more than the “matter” of scientism. Aristotle has in mind both subjects which sustain some properties in a definite order and subject matters of science which sustain definite order of statements.

One might suppose that after seeing e.g. a tree a gauge of seeing is gained and applicable to any material objects subsequently. The natural gauges were used first (e.g. foot, yard, inch), as it is human body that is seen first. However, if someone says “I see”, a comprehension is meant and connected with a thing being grasped in the imagination rather than watched only. The gauge of imagination could be deemed applicable to all material objects, nay, to *the whole* of the material world; for if all things could be imagined, the imagination could grasp their totality. However, if only this gauge had existed, each *particular object* would have existed within it secondarily only. That is meant by the Kantian schematism of imagination. If the totality had been measured first, everything else would have been measured as parts of it only. The Kantian transcendental deduction of categories was meant to provide an insight into this totality.

Artifacts form some totalities (complexes) indeed. In fact, it is practically impossible to define precisely e.g. a stool as a (discrete) object, because there is no decisive criterion to discern when a stool has ceased to be what it used to. Now, natural objects were deemed by Kant similar to those artificial ones, and the whole world similar to a material about to be used. Perhaps, there is a good reason to “define” an artifact in relation to all other artifacts, and as good, moreover, as it is the best (or even the only possible) way to define it at all: products can exist really on the background of everything else created at a given stage of civilization. E.g. a car cannot “exist” without gasoline, batteries, oil, rubber ... etc. In fact, it seems rather impossible to single out an artificial object *irrelevant* to the “existence” of the car.

Now, the assumption that all things could be measured with the same (quantitative) gauge is questionable after all.⁵³ It was believed that things could be measured by the amount

⁵³ In *Physic.*, lib. 4 l. 17 n. 11:

“Then [410] he clarifies the aforesaid definition in two ways, and first by a sign. Now that which is a standard of judging something to be more and less is a number of it. But the standard for judging whether a motion is greater or smaller is time. Therefore, time is a number.

Secondly, [411] he makes clearer what has been stated by distinguishing number, saying there are two. First there is that which is actually numbered which can be, as when we say ten men or 100 horses, and this is called “number numbered,” because it is a number applied to the things that are numbered. Then there is the number by which we count, i.e., number considered absolutely, such as two, three, four [the counting numbers]. Now time is not a counting number; otherwise the number of anything would be time; rather it is a number numbered, because it is the number of before and after in motion that we call “time,” or else the things that are counted before and after.

of, say, monads present in them (Leibniz). Consequently, things would have been “aggregates” and no natural integrity existed. That line of reasoning departs obviously from the common sense cognition. For we ascribe the integrity to an animal’s body, indeed. The assumption that animal could be produced “synthetically” out of simple elements (as artifacts are) sounds uncanny. Cloning is not similar to producing at all. It has only been proved that animals can be bred vegetatively to some extent, as plants normally are. So, the same specimen of a given species could have endured potentially *ad infinitum*, *if and only if* some prerequisite natural conditions were satisfied. The problem of the duration understood in those terms is by no means similar to the problem of the *natural existence* of things, which can only be spawn by interaction of a finite number of natural causes.

Moreover, the alleged existence of the elements to be used for “producing” things has been falsified by science itself. The elements are by no means similar to tiny bodies; viz. as tiny as being similar to the mathematical entities. Plato believed the latter to be polyhedrons and some believed e.g. electrons to be similar to tiny balls going round the nucleus (as sometimes illustrated in Encyclopedias). In fact, they are, to say the least of it, not endowed with proper density and seize. On the other hand, the ontological status of mathematical objects has been undermined. Plato’s assumption as to the ontological priority of the mathematical entities was falsified. They do not “exist” either in nature or in any special realm of reality. Still, the priority in question could be seized more sophisticatedly and associated with the idea of the world evolving towards the mathematical ideatum, which was the case in Avicenna. The “transcendental” mathematical pattern of what things are about to be seems to be more “attracting”.

At the beginning of the 19th century the discoveries of Young questioned the conviction concerning the sole existence of “elementary bodies” similar to the “bricks” that made up the whole universe. The vehement opposition raised against the publication of the effects of experiments on interference and diffraction of light is striking enough. The “spectra” of the past were to be “exorcised” out of the “temple of science”. However, the “spectra” would haunt science after all. In 1924, Louis de Broglie proved that both phenomena (of interference and diffraction) could appear in bodies also. No matter how “exact” the mathematical apparatus of their description, the fact is that the “elementary” in question is far from being as uniform and endowed with “corporeity” as had been imagined.

Mathematics itself points out to the border case. The most general equation of mathematics expresses (at least indirectly) the very applicability of mathematics to the cognizance of the natural world. It is Euler’s equation:

$$-1 = e^{i\pi}.$$

Therefore, although number is discrete quantity, time is nevertheless a continuous quantity on account of the thing counted, just as ten measures of cloth is a continuous quantity, even though ten is a discrete quantity”. (Pierre H. Conway, O.P)

<https://dhspriority.org/thomas/Physics.htm>

In this equation, three most important mathematical constants occur: the basis of natural logarithm, the imaginary unit and the radial measure of the circle.

If trying to grasp both the aforementioned generality and the physical sense of the equation (which are, in fact, two sides of the same problem), we resort to the physical variables, taking into account the energy of a particle and the time concerned:

$$e^{i\omega t} = e^{iEt/\hbar} = \cos(\omega t) + i \cdot \sin(\omega t); (1)$$

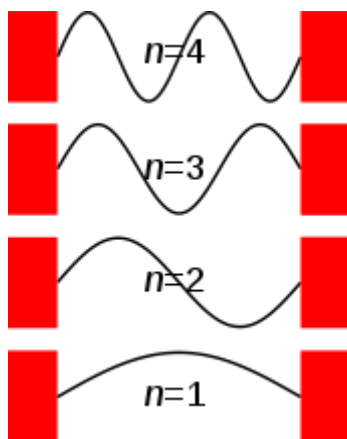
It is the wave equation, which, after taking into account the postulates of quantization, formulated by Einstein and De Broglie, assumes the form of Schrödinger's wave equation.

Galen compared the human body to a well harmonized system. The soul was responsible for the harmony; or it was deemed the harmony itself. But generally speaking, the same harmony is to be found in all natural objects (non-living also) if seized analytically enough. We can *imagine* a body as a string spanned between two stiff barriers. (The metaphor was used by Heraclitus as for the whole universe). True, the natural barriers are not “stiff” in the normal sense of the word, but real oscillations occur in nature nonetheless. Moreover, nature as such seems to be “measured” by periodical motion.

Focusing on the fact that the motion of an electron in an atom is periodic, we can describe it at least partially by the following equation:

$$y(x) = \cos [(\sqrt{2mE/\hbar}) \cdot x]$$

The equation would have described the movement adequately, if the barriers of the oscillations had been as stiff as the clamps of a piano's string. The graph of the first four states of energy would have assumed the following form:⁵⁴



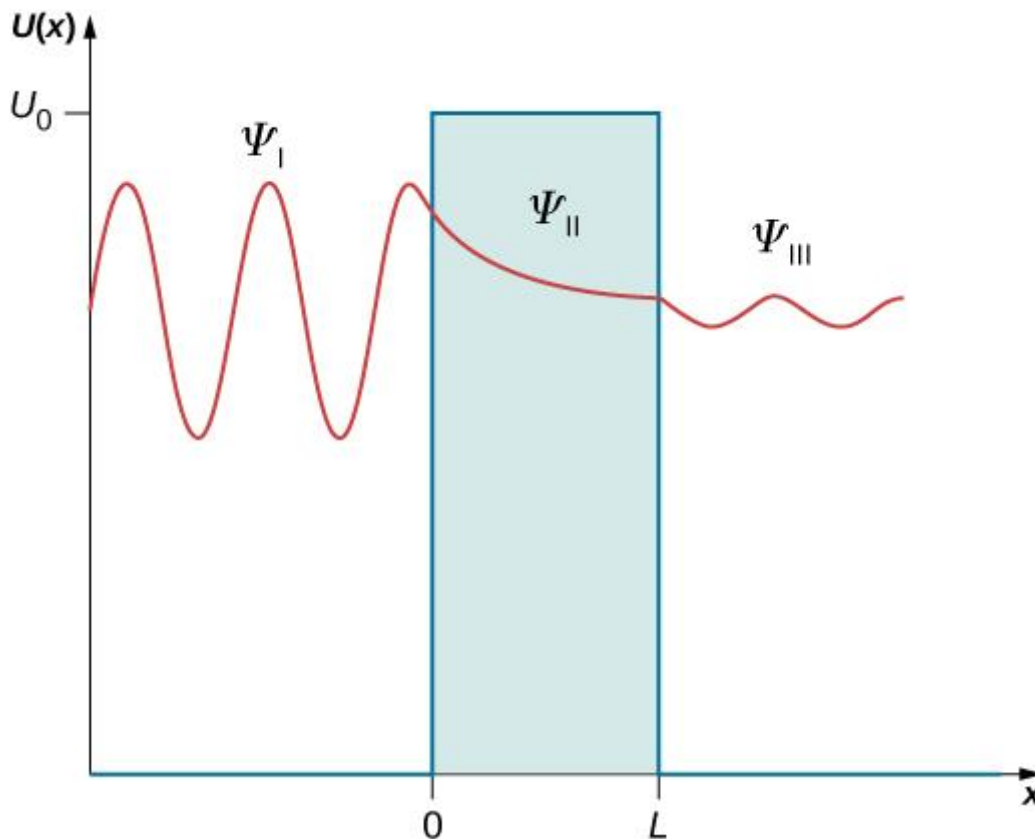
The last line corresponds to the elementary energy level. The other three (the “harmonic” ones) correspond to the other ones.

⁵⁴ https://en.wikipedia.org/wiki/Particle_in_a_box

The problem with the real motion of the electron consists in that the barriers are in fact permeable. A phenomenon of the so-called quantum tunneling occurs. The $\cos$ function, as is known, is an expansion of the exponential function with the imaginary unit in it. Beyond the aforementioned barriers the function decreases exponentially and assumes the following form:

$$y(x) = \exp - (\sqrt{2m(V_0 - E/\hbar)}) \cdot x ;$$

The whole wave function assumes the following form:⁵⁵



Between the barriers $(0; L)$; (in ψ_{II}) the $\cos$ ($\sin$) function passes into the exponential function.

As we see, the number e serves for describing both periodical oscillations and the increase/decrease in the region of the slowing down potential (the classically forbidden region). If the periodic oscillations could be described as the “life” of an object, both decreasing and increasing of the function from/up to the barriers would be identified as the

⁵⁵ Physics. LibreTexts; 7.6: Quantum Tunneling of Particles through Potential Barriers.

[https://phys.libretexts.org/Bookshelves/University_Physics/Book%3A_University_Physics_\(OpenStax\)/Map%3A_University_Physics_III_-_Optics_and_Modern_Physics_\(OpenStax\)/7%3A_Quantum_Mechanics/7.6%3A_Quantum_Tunneling_of_Particles_through_Potential_Barriers](https://phys.libretexts.org/Bookshelves/University_Physics/Book%3A_University_Physics_(OpenStax)/Map%3A_University_Physics_III_-_Optics_and_Modern_Physics_(OpenStax)/7%3A_Quantum_Mechanics/7.6%3A_Quantum_Tunneling_of_Particles_through_Potential_Barriers)

motion from/towards obtaining the value of the proper function of an object. The philosophical sense of it becomes clear. The periodic function corresponds to the specific state of energy associated with the substantial form of an object. The exponential function, in turn, corresponds to obtaining the form. The barriers correspond to what Aristotle called respectively generation and corruption of an object. Both are not motions in the Aristotelian sense of the word, but momentary changes instead. On the other hand, the motion that follows or precedes the changes is measured by time. The preparation for the accepting substantial form is meant or, conversely, the state following the loss of this substantial form. Both processes can be described by the notion of the “optimal” growth/demise. The motions that lead to, or from, the state of perfection is meant. The perfect state is that of a certain degree (level) of energy of a given object.

According to Thomas: *Omnes proprietates numerorum in unitate quodammodo praeexistunt* (De Veritate, 2, 1, c) “... the properties of numbers ... in a certain sense, pre-exist in unity” (Robert W. Mulligan, S.J.)⁵⁶. The sense of the statement becomes clearer if mathematical constants substantiate the unity in Euler’s equation:

$$-1 = e^{i\pi}.$$

It might seem that since the common numbering system is base 10, this base would be more “natural” than base e . Still, the number 10 is not particularly significant. Its use arises (culturally) from humans’ typical number of fingers. It is the basis for numbering system in the majority of societies.⁵⁷ Some of them, however, have based their counting systems on such choices as 5, 8, 12, 20, and 60. If humans had had, say, seven fingers, the number 3452 rewritten in the decimal system would assume the value:

$$3 \cdot 7^3 + 4 \cdot 7^2 + 5 \cdot 7^1 + 2 \cdot 7^0$$

What makes natural logarithms unique is to be found at the single point where all logarithms are zero, namely the logarithm of the number one. At that specific point the “slope” of the curve of the graph of the natural logarithm is also precisely one. Logarithms to a higher base than e , such as those to the base 10, exhibit a slope at that point less than one, while logarithms to a lower base than e , such as those to the base 2, exhibit a slope at that point greater than one. While the methods for computing the “value” of e are fascinating from various mathematical perspectives, they all can be thought of as resulting from the pursuit of this condition. Another way of conceptualizing this is to realize that, for any numeric value close to the number one, the natural logarithm can be computed by subtracting the number one from the numeric value. For example, the natural logarithm of 1.01 is 0.01 to an accuracy better than 5 parts per thousand. With similar accuracy one can assert that the natural logarithm of 0.99 is minus 0.01. The accuracy of this concept increases as one approaches the number one ever more closely, and reaches completeness of accuracy precisely there. To the same extent

⁵⁶ <http://dhspriority.org/thomas/QDdeVer.htm>

⁵⁷ Still, it must be noted that Thomas regards the number 10 as perfect (S.Th., II-IIae, q. 87, a. 1, c.). Probably, some general rule was adopted from which the priority might be deduced.

that the number one itself is a number *common* to all systems of counting, so also the natural logarithm is *independent* of all systems of counting. In the English language the term adopted to encapsulate this concept is the word “natural”.⁵⁸

A kind of anthropomorphism is to be found in Plato already. He assumed the existence of the so-called ten ideal numbers identified with the highest forms of natural things.

Another interesting feature of the number e is connected with the value of its derivative. There is no increase of the increase. The derivative equals the function itself:

$$\frac{d}{dx} e^t = e^t.$$

Accordingly, if the exponent of the function is real, the function is periodical; if the exponent is imaginary one, the process of the natural growth or demise is concerned.

In the classical equation of the harmonic oscillator, both sides of equation include respectively the second derivative of the function towards time or displacement:

$$\frac{\partial^2 \psi(x,t)}{\partial t^2} = \frac{T_0}{\rho} \frac{\partial^2 \psi(x,t)}{\partial x^2};$$

Where T_0 is the driving force; ρ is the linear density of the string.

To the contrary, in Schrödinger's equation the second derivative towards time and the first derivative towards displacement occur.

In the classical equation of the harmonic oscillator the equation (1) reduces to the form without imaginary number. Still, such like reduction is not admissible for the *real* harmonic oscillator. Accordingly, both time and displacement are measures, by not homogenous ones.

4. Mathematics and experiment

We have already mentioned the specificity of mathematics (its epistemological status) seized in the Aristotelian terms as well as its relation to material objects. Still, the question remains unsettled as to the nature of experimenting, viz. the problem of whether its sense

⁵⁸ Reeds Introductions: Physics Wave Concepts for Marine Engineering Applications

<https://books.google.pl/books?id=wa1CDgAAQBAJ&pg=PA180&lpg=PA180&dq=For+example,+the+natural+logarithm+of+1.01+is+0.01+to+an+accuracy+better+than+5+parts+per+thousand&source=bl&ots=goyxclZQ3z&sig=A-xoKf6WfgehYkgEOeHMz5H5qJ8&hl=pl&sa=X&ved=2ahUKEwjA35Cmif7dAhVLIswKHW9vBwsQ6AEwAHoECAkQAQ#v=onepage&q=For%20example%2C%20the%20natural%20logarithm%20of%201.01%20is%200.01%20to%20an%20accuracy%20better%20than%205%20parts%20per%20thousand&f=false>

proposed by the modern science theory is only possible, or if you like, whether it is as “modern” as commonly believed. If not, then the possibility will appear to build a new formalism and different from that commonly accepted; the one being inclusive of the natural objects as such, viz. seized not a not reductionist manner.

The following text of Thomas casts some light upon the problem concerned, which is that of the role of the abstraction in general:

(De Veritate, 2, 6 ad 1)

Ad primum igitur dicendum, quod duplex est materia a qua fit abstractio; scilicet materia intelligibilis et sensibilis, ut patet in VII Metaph.: et dico intelligibilem, ut quae consideratur in natura continui; sensibilem autem sicut est materia naturalis. Utraque autem dupliciter accipitur; scilicet ut signata, et ut non signata: et dico signatam secundum quod consideratur cum determinatione dimensionum, harum scilicet vel illarum; non signatam autem quae sine determinatione dimensionum consideratur. Secundum hoc igitur sciendum est, quod materia signata est individuationis principium, a qua abstrahit omnis intellectus, secundum quod dicitur abstrahere ab hic et nunc. Intellectus autem naturalis non abstrahit a materia sensibili non signata: considerat enim hominem et carnem et os, in cuius definitione cadit sensibilis materia non signata: sed a materia sensibili totaliter abstrahit intellectus mathematicus, non autem a materia intelligibili non signata. Unde patet quod abstractio, quae est communis omni intellectui, facit formam esse universalem.

There are two kinds of matter from which abstraction is made: intelligible matter and sensible matter—as is clear from the *Metaphysics*. I call that matter *intelligible* which is considered in the nature of a continuum, and *sensible*, that which is physical matter. Each, however, can be taken in two ways: as designated and as not designated. I call matter *designated* if it is considered together with the determination of its dimensions, that is, with these or those dimensions. I call it *not designated*, however, if it is considered without the determination of its dimensions. In this connection, it must be noted that designated matter is the principle of individuation, from which every intellect abstracts inasmuch as it is said to abstract from the here and now. The intellect of the natural Philosopher, however, does not abstract from non-designated sensible matter; for it considers man, flesh, and bone, in whose definitions non-designated sensible matter is included. The intellect of the mathematician, however, abstracts entirely from sensible matter, though not from non-designated intelligible matter. Hence, it is clear that abstraction, which is common to all intellects, makes a form universal (Robert W. Mulligan, S.J.).⁵⁹

Exact as it well might appear to be, the modern concept of nature (and objects which were the “matter” of experiments) was in fact fashioned after Avicenna’s opinion on how God got to know singular material things. His line of reasoning has been followed in the pattern of the cognition of the material objects by means of hypotheses formulated in the tongue of mathematics. Since a special status of mathematical objects was granted by Avicenna, the results of experimenting have been deemed probable only. The Avicennian God got to know particulars indirectly only (and His cognition was bereft of certitude). Perhaps, the lack of

⁵⁹ <http://dhspriority.org/thomas/QDdeVer.htm>

(absolute) certitude characterizes human moral acting indeed, but it is by no means obvious that God must act in the way humans do. Moreover, not even humans are to be defined as moral acting subjects. According to Aristotle, man's ultimate destiny is the contemplation of unshakeable truths whereas acting either follows or is a prerequisite to it. The same holds true as to scientific praxis: the contemplation (theoretical thinking) of nature forms basis for experimenting.

According to Thomas, Avicenna failed to distinguish between "unum quod convertitur cum ente" and "unum quod est principium numeri", thinking that the "one" convertible with being is the same as the "one" which is the principle of number.⁶⁰

Avicenna, as the story has it, read 40 times *Metaphysics* by Aristoteles, trying in vain to understand the purport of the book. Then, mathematical thinking appeared to him a hermeneutic key. He extrapolated the mathematical method onto the cognizance of the totality of beings. Similarly, the Kantian "transcendental" activity was that of the "weak" God witnessing the evolution of the world only. "God's" weakness issued from the ontological status of mathematical objects, which "exist" in a special manner. The nature of the Avicennian God had to assimilate to the "nature" of mathematical entities.

According to Avicenna, there were but signs (*signa manifesta* of the Latin medieval translation) of God's presence in the real world and no strict demonstration of the existence of God possible. Avicenna's stance is as anti-dogmatic as the statement of Karl Jaspers about symbols or ciphers (*Chiffre*) of transcendence present in the world only. The tongue of mathematics is that of symbols indeed, and symbols are but loosely connected with what they stand for; their relation to what they represent is the matter of convention only. The contrary is the case with intellectual concepts; they are undoubtedly abstracted from the sense data and thus related to them. The point is that the aforementioned formal abstraction (producing

⁶⁰ *Summa Theologiae* I, q. 11 a. 1 ad 1 (*The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920; Literally translated by Fathers of the English Dominican Province).

<http://www.newadvent.org/summa/>

Et quia numerus componitur ex unitatibus, crediderunt quod numeri essent substantiae omnium rerum. E contrario autem Avicenna, considerans quod unum quod est principium numeri, addit aliquam rem supra substantiam entis (alias numerus ex unitatibus compositus non esset species quantitatis), credidit quod unum quod convertitur cum ente, addat rem aliquam supra substantiam entis, sicut album supra hominem. Sed hoc manifeste falsum est, quia quaelibet res est una per suam substantiam.

Quodlibet X, q. 1 a. 1 co. Dicendum, quod unum quod est principium numeri, de necessitate aliquid positive dicit in eo cui attribuitur; quia, cum ex unitatibus numerus constituatur, nisi unitas res aliqua esset, numerus res esse non posset, et sic non posset poni in aliquo genere tamquam species. Si ergo unum quod convertitur cum ente, sit idem quod unum quod est principium numeri, oportet quod etiam unum quod convertitur cum ente, aliquid positive superaddat enti. Et hoc concedit Avicenna: unde vult, quod unum quod convertitur cum ente, addat supra ens aliquid quod ad genus mensurae pertineat.

mathematical objects) has been commonly called in question. In brief: the reasoning proposed by Thomas is certain; the argumentation to be found in Avicenna's *Metaphysics* is not demonstration properly speaking.

Mathematical entities are described by symbols indeed. Moreover, their formality might be imagined paradigmatic for entire human reasoning and the philosophy of symbolic forms may appear (Cassirer). Now, the problem of the relation of signs to the material world in general was relevant to the Arab philosophy, as was pointed out in PREFACE. Avicenna et sequaces eius (Avicenna and the sequacious) paved the way for modernity.

Alii dixerunt (Avicenna et sequaces eius, *Metaph.*, VIII c. 6, a med) quod Deus unumquodque singularium cognoscit quasi in universali, dum cognoscit omnes causas universales ex quibus singularia cognoscuntur, sicut si quis astrologus cognosceret omnes motus coeli et distantias coelestium corporum, cognosceret unaquamque eclipsim quae futura est usque ad centum annos; non tamen cognosceret eam inquantum est singulare quoddam, ut sciret eam nunc esse vel non esse Ex formis autem universalibus congregatis quotcumque fuerint, non cognoscitur aliquid singulare quia adhuc collectio illarum formarum potest intelligi in pluribus esse. (Thomas, *De Veritate*, 2, 5, c.).

Therefore, others, such as Avicenna and his followers, have said that God knows every singular, but universally, as it were, in knowing all the universal causes from which a singular is produced. An astronomer, for example, knowing all the motions of the heavens and the distances between the celestial bodies, would know every eclipse that will occur even for the next hundred years, yet he would not know any one eclipse as a distinct singular so as to have evidential knowledge that it actually exists or not—which a country bumpkin has when he sees an eclipse. It is in this manner, they say, that God knows singulars: He does not, as it were, see them in their singular nature but through knowledge of universal causes. But neither can this opinion stand; for from universal causes there follow only universal forms, unless something intervenes through which these forms are individuated. But from a number of universal forms gathered together—no matter how great this number may be—no singular can be constituted, because the collection of these forms can still be understood to be in many. Therefore, if one were to know an eclipse by means of universal causes in the manner described above, he would know, not a singular, but only a universal. For a universal cause has as proportionate to it a universal effect, and a particular cause, a particular effect. Hence, there would still remain the inadmissible consequence mentioned earlier, that God should be ignorant of singulars. (Robert W. Mulligan, S.J.).⁶¹

Now, in the words:

- 1) *dum cognoscit omnes causas universales* (“in knowing all the universal causes”) the exact creation of the boundary conditions of experiments is described; the one that proved to be infeasible after all;
- 2) *Ex formis autem universalibus congregatis quotcumque fuerint, non cognoscitur aliquid singulare quia adhuc collectio illarum formarum potest intelligi in pluribus esse* (“But from a number of universal forms gathered together—no matter how great

⁶¹ <http://dhsprory.org/thomas/QDdeVer.htm>

this number may be—no singular can be constituted, because the collection of these forms can still be understood to be in many”) the empirically checkable probability is addressed.

The limitations of the aforementioned method (the reductionist one) are touched upon in *De Veritate*, 2, 4, c:

Si sit aliqua causa universalis, cuius actio ad aliquem effectum non determinetur nisi mediante aliqua alia causa particulari – per cognitionem illius causae communis non habebitur propria cognitio effectus, sed sciatur in communi tantum.

Therefore, if there is some universal cause whose action is not determined to any effect except through the intermediate action of some particular cause, from the knowledge of such a common cause we will not have proper knowledge of the effect but merely a general knowledge of it. (Robert W. Mulligan, S.J.).⁶²

Thus, we might interpret:

- 1) *causa universalis* as a “cause” in the Kantian sense (a theorem; an object of mathematics);
- 2) *actio quae ad aliquem effectum determinatur* (“cause whose action is not determined to any effect except through the intermediate action of some particular cause”) as the experimental activity; the acting with an operator on a given material object;
- 3) *causa particularis* (some particular cause) as the “matter” of experiments;
- 4) the words *non habebitur propria cognitio effectus* (“we will not have proper knowledge of the effect”) as the lack of certitude, (achievable in the Aristotelian *scientia naturalis* nonetheless);
- 5) the words *sciatur in communi tantum* (a general knowledge of it) as referring to the physical hypothesis;
- 6) *materia signata* of mathematics as part of continuum potentially infinitely divisible. The continuum, in turn, is called *materia intelligibilis*. It is a common “substratum” of beings not possibly distinguishable in it.
- 7) *signum* as mathematical entity, connected with material objects indirectly only.

The philosophy of language assumes, analogically, a system of axioms, which were not so much true as rather probable (self-consistent). They form a “vision” potentially applicable to the cognizance of the material world. Now, Gödel proved the complete system of axioms given a priori impossible. Consequently, axioms (if ever) are only to be drawn from the abstractedly known physical beings and what was asserted by Aristotle proves true (*Anal. Post.*, II, c. 19).

Although the philosophy of nature abstracts from the concrete matter, the *subject matter* thereof is determined precisely enough. Moreover, if the moving and moved are related to each other, *the real nature subjected* to movement appears. Analogically, the real definitions of natural beings can be provided, as the formal side of things differentiates and

⁶² Ibid.

actuates the “common” matter (genus) taken abstractedly. The abstraction carried out by *scientia naturalis* differs, accordingly, to that of mathematics neatly enough. In both cases a substratum is concerned. However, the mathematical substratum – *materia intelligibilis* is but of the secondary importance if compared with the matter of things that undergo natural changes. Different demonstrations are carried out in Physics and different real definitions correspond to the different grades of the formality of beings (their “energy”); the “energy” of the material objects. Now, the rules of *correspondence* of the mathematical (theoretical) pattern to the natural objects are a problem of their own. Similarly, the nominal definitions are only achievable there, as including “more and less” (of entity) expressed in those signs. Consequently, they could be located at the same “ontological” level and possibly associated with what was called the “divine” intellect. Be that as it may, those signs corresponded to the real things with the same “is” of propositions and that is why they were deemed equally formal. *Veritas propositionis* replaced the reality of being. The fact that one thing exists is equal to that another one exists, obviously enough. But it is not tantamount to saying that *the principles* that actuate particular existences are equal. In fact, they are formally different, as things differ just in being more or less formal. “More” and “less” of mathematical objects do not elucidate the fact.

Now, mathematical entities could be deemed intentional being in a sense, for the latter term can be used as referring to the aforementioned *materia intelligibilis*. But if the only matter had been that envisaged by mathematics, the real matter of natural things would be lost sight of. If the matter were uniform (mind the oxymoron), things would be hardly distinguishable and “ontological” Ersatz of natural matter bound to appear, which, historically, led to monism (Spinoza). The undue extrapolation of mathematics must lead to seeing nature as amorphous material.

The relation of the unity of being to the unity of number can be demonstrated quite plainly. According to Thomas, the unity of being is known first. The cognition of the unity of number comes but later on.

Summa Theologiae I, q. 11 a. 2 ad 4. Unde oportet quod divisio sit prius unitate, non simpliciter, sed secundum rationem nostrae apprehensionis. Apprehendimus enim simplicia per composita, unde definimus punctum, cuius pars non est, vel principium lineae. Sed multitudo, etiam secundum rationem, consequenter se habet ad unum, quia divisa non intelligimus habere rationem multitudinis, nisi per hoc quod utrique divisorum attribuimus unitatem. Unde unum ponitur in definitione multitudinis, non autem multitudo in definitione unius. Sed divisio cadit in intellectu ex ipsa negatione entis. Ita quod primo cadit in intellectu ens; secundo, quod hoc ens non est illud ens, et sic secundo apprehendimus divisionem; tertio, unum; quarto, multitudinem.

“One” is opposed to “many” privatively, inasmuch as the idea of “many” involves division. Hence division must be prior to unity, not absolutely in itself, but according to our way of apprehension. For we apprehend simple things by compound things; and hence we define a point to be, “what has no part”, or “the beginning of a line”. “Multitude” also, in idea, follows on “one”; because we do not understand divided things to convey the idea of multitude except by the fact that we attribute unity to every part. Hence “one” is placed in the definition of “multitude”; but “multitude” is not placed in the definition of “one”. But division comes to be

understood from the very negation of being: so what first comes to mind is being; secondly, that this being is not that being, and thus we apprehend division as a consequence; thirdly, comes the notion of one; fourthly, the notion of multitude.⁶³

It is pivotal for the cognizance of the natural world to determine precisely what is known first. As has already been stated, it are relatives of physical facts (the co-relatives thereof) that are known originally. The cognizance of the objects called “simple” (point, line, surface) comes subsequently only. The fact might well go unnoticed, but it is the fact nonetheless that, say, a point is but a terminus of a segment, and the plane the terminus of a three-dimensional body. Consequently, the mathematical entities are rather “privations” than positive beings. According to Aristotle (Phys., I, c.1), the first datum of the natural experience is motion. Some “dimensions” thereof can be grasped, to be sure, but only at the expense of the real principle and end being dropped. In fact, neither the principle is the beginning first of all, nor the end is the terminus equally formal and “neutral” for any direction whatsoever.

Motion (a fact; an item of it) includes relatives indiscriminately, but distinguishable after all. Two approaches to the primitive data of experience are possible: that of mathematics, in which the distinguished are so according to the position only, and that of Physics in which the distinguished prove to be the moving and moved. A possible supplement is provided by metaphysics. The two relatives are described as the cause and effect.

In Thomas’s Commentary to Metaphysics by Aristotle we read:

Sententia Metaphysicae, lib. 5 l. 1 n. 3. Sciendum est autem, quod principium et causa licet sint idem subiecto, differunt tamen ratione. Nam hoc nomen principium ordinem quemdam importat; hoc vero nomen causa, importat influxum quemdam ad esse causati. Ordo autem prioris et posterioris invenitur in diversis; sed secundum id, quod primo est nobis notum, est ordo inventus in motu locali, eo quod ille motus est sensui manifestior. Sunt autem trium rerum ordines sese consequentes; scilicet magnitudinis, motus, et temporis. Nam secundum prius et posterius in magnitudine est prius et posterius in motu; et secundum prius et posterius in motu est prius et posterius in tempore, ut habetur quarto physicorum. Quia igitur principium dicitur quod in aliquo ordine, et ordo qui attenditur secundum prius et posterius in magnitudine, est prius nobis notus, secundum autem quod res sunt nobis notae secundum hoc a nobis nominantur, ideo hoc nomen principium secundum propriam sui inquisitionem significat id quod est primum in magnitudine, super quam transit motus. Et ideo dicit, quod principium dicitur illud unde aliquis rem primo moveat, idest aliqua pars magnitudinis, a qua incipit motus localis. Vel secundum aliam literam, unde aliquid rei primo movebitur, idest ex qua parte rei aliquid incipit primo moveri. Sicut in longitudine et in via quacumque, ex illa parte est principium, unde incipit motus. Ex parte vero opposita sive contraria, est diversum vel alterum, idest finis vel terminus. Sciendum est, quod ad hunc modum pertinet principium motus et principium temporis ratione iam dicta.

⁶³ *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920; Literally translated by Fathers of the English Dominican Province.

751. Now it should be noted that, although a principle and a cause are the same in subject, they nevertheless differ in meaning; for the term principle implies an order or sequence, whereas the term cause implies some influence on the being of the thing caused. Now an order of priority and posteriority is found in different things; but according to what is first known by us order is found in local motion, because that kind of motion is more evident to the senses. Further, order is found in three classes of things, one of which is naturally associated with the other, i.e., continuous quantity, motion and time. For insofar as there is priority and posteriority in continuous quantity, there is priority and posteriority in motion; and insofar as there is priority and posteriority in motion, there is priority and posteriority in time, as is stated in Book IV of the *Physics*. Therefore, because a principle is said to be what is first in any order, and the order which is considered according to priority and posteriority in continuous quantity is first known by us (and things are named by us insofar as they are known to us), for this reason the term principle, properly considered, designates what is first in a continuous quantity over which motion passes. Hence he says that a principle is said to be “that from which someone first moves something,” i.e., any part of a continuous quantity from which local motion begins. Or, according to another reading, “Some part of a thing from which motion will first begin”; i.e., some part of a thing from which it first begins to be moved; for example in the case of a line and in that of any kind of journey the principle is the point from which motion begins. But the opposite or contrary point is “something different or other,” i.e., the end or terminus. It should also be noted that a principle of motion and a principle of time belong to this class for the reason just given. (translated by John P. Rowan).⁶⁴

The danger of reductionism appears when it is attempted to seize the principle as what is prior spatially only (in time or space). Obviously, the sunrise is prior to the noon, but not a cause of it. It was believed that the only priority cognizable is the priority seized in the terms of the sequence. Still, two things must be compared in something they share in common. Does it *really* exist? In what sense? Is the specter of ether about to haunt science again? Is it ether or something of the sort that accounts for things to be possibly subsumed under a common denominator? Or, the common in question is but the mathematical substratum and no physical counterpart perceptible. But then, the ontological status of the mathematical substratum and the relation to material objects will remain something of a riddle. The existence of *tertium comparationis* (of a genus in whom some species can be compared, e.g. ether) is physically impossible. The only solution possible is that *two and only two things are compared to each other directly*. And they form the nature of the elementary datum of empirical cognition. Motion is a “common denominator”, but it is not to be severed from the moving and moved so as to form an enigmatical entity independent of the moving and moved.

There is no special kind of experience allotted to philosophy. There is natural experience that can be used more or less effectively, all depending on the method adopted. The primitive experience is the real foundation of any science about to come subsequently. It is the undeniable fact that the experience originates in time and space, and no “ideal world” of mathematics exists. The only problem is to show *how* it originates, i.e. how it provides the cognition that is *relatively* independent of the spatial-temporal being, both applicable to it and

⁶⁴ <https://dhspriority.org/thomas/Metaphysics.htm>

transcending it at the same time. We live in the constant flux of time and events. Now, the flux happens to be interrupted every time a theory is formed about to master the flux of events. The contemplation of the beauty of nature is such an interruption. (Sth, I, 44, 3 ad 3). In other words: the elementary cognitive situation is far from being a sheer recording of the sequence of events. The events are not arranged on a horizontal plane; they are *pairs of relatives*. A principle and end are essentially related to each other and without a proxy of, say, a three-dimensional space. The latter exists but secondarily.

The fact dawned upon the ancient Greeks more and more distinctly, and the evolution of the philosophical tongue before Aristotle bears the testimony thereto. The principle (ἀρχή) was taken literally first. Then, the abstract notion was elaborated. Now, man is civilized to the extent he/she can grasp the notions applicable to *various* spatial-temporal circumstances not restricted a priori. Civilization *expands* in such a way. New swathes of life are conquered by creating new realms of human liberty (expanding them). But it is only possible if a real relation of the ideas proposed to persons (individuals) is as plain as attracting. Otherwise, the only argument for the expansion would have been the projected uniformity of thinking; the eternal peace of symbolic forms; the unity at the expense of *the ordered diversity*. This type of unification undermines the very foundations of the *European* Civilization. God is neither “great” nor “weak”; He is what He really is, and it is as it should be. Humans need not “think out” any “idea” of God; they should only hearken diligently to what He really says. The prerequisite of the listening is the contemplation of the beauty of nature. Both listening and contemplation always defined the European identity.

CHAPTER IV. RELATIONS

1. Analogy: the order of relations

The essential value of all concepts claiming the right of being scientific is *ordering* objects seen or perceived in general. The simplest way to do this consists in taking into account the plainest aspect of material objects, i.e. their quantity. In this case, the simplest is tantamount to the plainest and the most exact at the same time. That is why the science that regards the quantity of things is deemed to be exact par excellence. Still, the notion of *order* need not be restricted to that aspect of the real world. In other words: the order of things might be considered by means of the notions more general than those used by (or rather practicable on the basis of) mathematics.

The threefold order of things (of their relations) is possible:

- a. The order of things mutually related;
- b. The order of things towards the totality of them; i.e. the order within the totality;
- c. The order of things towards their Outer Principle.

The notion of proportion in general is extensively discussed by Thomas (e.g. in STh., I, 21, 1, c). However, the problem of the analogy of being assumed a special character in classical philosophy and was especially evaluated as its proper method. As the method, it occupied the central position in the so-called existential Thomism. Thomas himself does not seem to ascribe such an importance to it and sets problem of analogy in a broader perspective. In other words: the problem of relations amongst things is to be elucidated in general terms and connected rather with the general methodology of science (and formal logic too). The problem of analogy is important just because of being the problem of the *general* methodology, which adds up to its wider applicability.

As regards the first aspect (a) of the problem, it might be stated that the quantity of things is easiest to compare. Still, the problem is how far the method might lead in the cognizance of the natural world. The question might be reworded in the following manner: (1) is the adequate (and complete possibly too (b)) cognizance of nature possible if assuming the mathematical method only; (2) is it possible that the very applying of the method might lead (paradoxically) to a border after all and the blank space behind it appear not possibly elucidated by the method.

The first (1) point need not be treated as that of the philosophy of nature or philosophy in general. If the scientific status of them both could be questioned, human being could not be so, because it is more than just an element of a set of objects; it is certain that at least the actions of men in the natural world must be ordered and the scope of the order proportionate to the intensity of their actions. “More” and “less” do not seem to define any of them adequately. The order might be *proportioned* either to a scientific field (defined by the professional competency) or proportioned to the aim of one’s life in general. For an action, being disproportioned (or unproportioned) must equal to being incidental and indefinite.

Consequently, the problem might be confronted from the point of view of acting in general (and morals too), and not only from the pragmatic point of view (if morals are about the *ultimate* aim of human life indeed); or, conversely, the very scientific activity might be regarded in such a perspective. It is only too obvious that the otherwise splendid scientific discoveries can turn against man like the mythical Golem. The most striking example is the military use of nuclear energy. Einstein himself saw the problem distinctly enough. According to his own words, “the box of Pandora was opened” and his personal engagement in the peace movement is widely known. The sentiment of genuine responsibility resounds in the words, albeit, Einstein’s personal responsibility might have been considerably less than assumed.

The question of responsibility in general is involved, i.e. the aforementioned ethical dimension of human activity. If mathematics had been *absolutely* universal (because of regarding the infinitely extensive), its universality would have consisted in – so to say – the (methodical) extension of the extension (faced in it). But the (former) extension is nothing save utility: mathematics was believed to be a perfect means to master nature. A problem arises of man’s mastering his own nature accordingly. It seems to be obvious that human activity cannot be reduced to being “generally” useful (and the ones being useful for the

others). The category of utility is not capacious enough and *essentially different* to the notion of good as such. The latter cannot be obtained by sheer extension of the utility. Unless the *qualitative* difference of both categories be seen, it will be impossible to ascertain as for the fact that some actions are simply good and spawn an order instead of the opposite.

Re-responsibility might be taken almost literally here. For certain effects correspond to some moments of our body (the outer bodies react to the movements of our bodies) and conversely: the majority of them (all but those reflexive ones) are to be regarded in terms of what they aim at. The effects are definable and it is up to a rational creature to assess them objectively. Thus, the effects overlap, to a certain extent, with the aims, and the responsibility consists in making out the scope they do so. Some effects might be foreseen and ought to be so. Some, on the other hand, are not so and not to be demanded to be believed to. They are simply deprived of the character of being in a *definite proportion to an individual*. But on the other hand, the margin of their indefinability cannot be arbitrarily shifted (widened or narrowed), because it would add up to destroying the very possibility of life (acting in the definite future). The ignorance can be a problem. It cannot be an excuse, for the excuse is childish indeed. Moreover, it can be culpable since possibly removable. The ignorance, in addition, can be deliberate as in those who turn a blind eye to what is subjectively inconvenient. The very ignorance can be aimed at. Thomas speaks of *ignorantia affectata* in this context. *Some* people do not want to recognize awkward facts: they want to ignore them. *All* ideologies marginalize some facts and the margin is as wide as those ideologized are narrow-minded.

In the real world, the moving remains in a definite relation to the moved and the relation sometimes must be known. The margin of contingency exists, no doubt. Physics speaks of the events whose cones of future do not overlap and the events are by the same token incidental *to each other*. Now the scope of personal responsibility can be understood in an analogical manner. There are “cones of future” of human activity and definable indeed. The “small steps” into the future must be measured as strictly as only possible, analogically as the step into the cone of future of an event is measured by the *definite* velocity of light. But on the other hand, it is both unjustifiable and needless to try and take responsibility for what is in fact incidental with *respect to an individual*. The bulk of information people are provided with nowadays is useless in this sense. Nay, the overflow of news renders the information *really* important less perceptible. It are ideologies too that try to persuade individuals as to the personal responsibility for what they cannot in fact change. For instance, one is *practically* unable to change *directly* the way his/her actions are assessed by the others. The actions should be good no doubt, and one is personally responsible for changing them if bad. But this does not amount to that they would be *automatically* assessed as good, because the assessment is that of the assessing and not of the one assessed. Similarly, the use of the term “behavior” instead of “action” is misleading, because it implies the notion of appearance instead of the essence of actions; the way they are *assessed* instead of the way they *exist*.

The second (2) aspect of the problem is simpler, nay, even imaginable. For the activity in question consists in adding (broadly speaking) the values observed and some of them have been proved to be just non-additive. The problem of the natural place of physical body emerged in physics itself. It can be provisionally seized in physical mathematical terms as the place where the second derivative of the envelope of a wave function equals zero (a body can

be seen as a standing wave). But in fact, the unmeasurable is stumbled upon. The real substance is met and endowed with the unity of its own, independent of the unity regarded in mathematics. Moreover, physics speaks of non-commuting values. Two real sides of the natural body are *indirectly* met, and the body itself is no longer to be believed to be just an “aggregate” of “material” particles.

That is why the problem of relations cannot be reduced to those of quantity only. Three approaches can be distinguished according to the points (a), (b), (c) listed above:

1. Scientia particularis faces an order of things. The scientific rigor demands accepting a determinate aspect of the inquiry, and being a science amounts to being restricted in a special way (albeit the nature of the special itself is to be determined too). The procedure (along with normal requirements of formal logic) guarantees the correctness of the conclusions;
2. Scientia naturalis does not put up with regarding just a part of totality but aims at the cognizance of the totality and the order within it;
3. Metaphysics considers the real relation of the totality to what constitutes it from without. It concludes the existence of the Cause of the universe, or, more properly, the fact that the universe can only co-exist with the Transcendent Principle.

The methods adopted must differ. Applying one universal (as devised by Descartes) method is, according to the doctrine of Second Analytics, a serious mistake and the extrapolation is bound to lead to unjustifiable conclusions. Instead of the extrapolation the analogy must be used. It is efficient even in one and the same science, whose parts might be related in the way until unknown. Thus, for instance, the law of inverse squares applies to the force of attraction of both masses and electric charges.

The general scheme of scientific activity can be seized in the terms of the analogy of proportionality:

$$A/B = C/D$$

In this case the commutation of elements would have rendered the analogy an ordinary equation. In mathematics, equations are plain, because just one element (a variable) can be placed on the left side of an equation so that the others are grouped on the right side of it. Scientia naturalis does not allow such like regrouping of its “variables”. But physics might face the same problem: some quantities are incomparable; for instance no law has yet been found as universal as to encompass both gravitation and electricity.

In modern physics, the fact that the so-called non-commuting values coexist is a restriction and the border mentioned above.

A philosophical “equation” might look like this:

The matter of the human organism is related to its form in the way analogous to that of a plant’s matter to its (vegetative) form.

In this case, it is impossible to settle *directly* the relation of the human form to that vegetative one, and (which, however, might seem to be less obvious) to determine *adequately* the relation of the human body (“matter”) to that vegetative one. The mediaeval thinker, writing

in Arabic, Avicenna, devised the so-called “form of corporeity”, which would have rendered such a comparison possible in philosophy. To be precise: not the existence of biotic matter is problematic, but seizing human body in those terms *exclusively*, which amounts to regarding it in a reductionist manner.

If the method proper to philosophy is adopted, *the identity of relations* will be seized and identity of objects not affected. This identity is not to be regarded as additive.

The analogy of attribution, in turn, might be seized thus:

$$A/C = B/C$$

Now, C is the outer side (an “environment”) and constituting the coexistence of any objects within a system taken as a whole. Eventually (in metaphysics): *relatio dependentiae* is regarded – the relation of the dependence of the whole and all its elements on the Transcendent Principle, viz. God.

Besides the analogy understood in such a way, there are but sheer proportions of quantities. In this case, the method proper (and re-stricted so) is *abstractio formalis*. In John Stewart Mill’s *Canons*, the commutation of elements occurs and elements are understood extensionally. To the contrary, for *scientia naturalis* the reciprocity of relatives is pivotal. An isolated object cannot be a cause. Neither can any *set* of them be so. Causes are complementary only.

Accordingly, for the adequate understanding of the natural body it is indispensable to grasp the complementarity of the coefficients (causes) that condition the existence of objects, which is in fact their coexistence in the natural world. This sense of analogy seems to chime in with what was stated by the very modern science.

In particular, the *subject matter* of a science is not just a *matter*, but what makes it relatively whole, e.g. elementary particles (forms). The coefficients present in the whole nature are manifested to us as matters and forms. But not only that. The aim and the first stimulus of a motion are related in the analogous way, i.e. proportioned to each other. The fact that the motion is directed in such a way and the finality exists in nature is perceptible to every unprejudiced eye. There are horse-blinds that make people narrow-minded. People who *believe in science* (since ideologized so), instead of being completely *aware* of what they face in it, put on such spectacles.

The so-called “openness of being” (Mascall) is nothing save the fact that all physical beings (“matters”) are perfected and perfectible in the way the very potentiality about to be perfected is “open” to the possible perfecting. Moreover, human understanding can be grasped in the terms of potentiality and actuality too. We get to know something after having got mere possibility of doing it. Science, according to Thomas is a relative – its being consists in being related to a category of objects. This category is called the subject matter of a science, because the formal in the objects categorized so makes them open to the human mind.

The nature of being relative in such a way can be grasped in quite precise terms as it is the case in philosophy. In particular, the primitive data of our experience can be grasped in these terms. The moving and the moved are to be seized first in terms of a subject getting a perfection from a certain point of departure, and, subsequently, in the terms of four causes as presented in *Physics* and *Metaphysics* (matter – form, the moving – the aim). In “*On the Soul*”, Aristotle adopts the analogous scheme to human understanding: there is a potentiality

in it and actuality too. There are principles thereof and called respectively: the agent and potential intellect. Moreover, senses make humans open to the outer world as they are altogether passive and receptive of the influence from without. Otherwise the cognition of the outer world would have been impossible, or at least mingled with some phantasies. In fact, the Greek philosophy originated from the conviction that all variety of the world could be subsumed under a relatively plain scheme. From the very beginnings, the Greek philosophers had believed that

2. The principles of things are contrary (*principia contraria sunt*)

Aristotle mentions the sentiment as that having been commonly accepted before him. The fact is quite plain in Pythagoreans. Aristotle himself assumes the existence of contrary qualities and constituting the existence of elementary bodies. All the more, the contraries are perceptible in the so-called corpora mixta (minerals, tissues), where an equilibrium is required to raise a more sophisticated structure. The feature is still more striking in living beings and in animals. Those whose bodies (their structure) are counterbalanced (and require a greater equilibrium) are obviously more perfect. Their intelligence bears the testimony to the fact. The receptivity of the sense of touch is particularly significant, and the perfection of the sense in humans is a token of their intelligence. To the contrary, “being callous” is, as it were, tantamount to being unhuman. Thomas ascribes the so-called optima complexio to human body.

The equilibrium is to be found in the whole nature. The third law of the Newtonian Mechanics is an idealized form thereof. The equilibrium of electric charges is present practically in all macroscopic bodies and seems to be just a prerequisite for another kind of force – the gravitational one – to occur. Moreover, the equilibrium between the potential and kinetic energy is observable in all perfect systems. Scientia naturalis is just more precise in stating the way the equilibrium in question is conditioned in the real world.

The problem, thus, is that of the scope of symmetry existing in nature. Seizing the problem in philosophical terms, we might state that an equilibrium on a lower stage of perfection of the universe makes it possible that another one occurs on a higher level. Still, the symmetry is not absolute. The relations are not reciprocal and unconditionally reversible. The action equals reaction in the *idealized objects*, but no such objects exist in the real world. The symmetry (and the unity of things consequently too) are conditioned by the outer principle; the one called in philosophy the transcendent one. To anticipate the ultimate conclusion: the energy of the whole universe is maintained, and its equilibrium too, by the Transcendent Principle that conditions it from without. The conclusion will be proved. But first another problem must be addressed, and connected directly with the very possibility of grasping the constants of the changing universe, namely

3. The problem of relativism

Edmund Husserl tackled the problem of the alienation of humans in the world created by them. The conclusions need not be uncritically accepted, still, the very problem was made out distinctly enough. “The lack of the proper place in the universe” is not a sheer mode of speaking. The question might be seized in its naked wording. Moreover, it might be tantamount to the sentiment of the lack of a firm basis (footing) for personal existence. Albeit the so-called spontaneity in expressing oneself has been widely appreciated and the views called personal marked the authenticity of humanity, the fact remains that the firm (and objective) basis is indispensable for uttering *all sentiments* whatsoever. For *a person* to exist the laws of his/her nature are to be respected. Two extremes are to be avoided; “hell is other people” (Sartre) and “hell is in me”. In fact, human existence might only unfold within the perceptible continuity of human nature, i.e. along with the sentiment that the human nature is *unreservedly shared by anybody*. The aforementioned continuity, however, is marked by the discontinuity to what is foreign to it.

The fact that things are related to each other is to be neatly distinguished from them being (allegedly) relative, i.e. being indefinite and in a constant flux. “Relativity” might well be an icon of the theory; relativism, to the contrary, is bound to spawn but disorder and wreak destruction. We might speak about a motion which leads to degradation and a motion which leads to perfection, because it perfects both nature and human mind. First, we ought to tackle the problem of

3. 1. Cognoscibility and relativity of nature

The problem overlaps, to a degree, with that of being indivisible, because being definite (cognoscible) implies a certain privation of division (i.e. decomposition). No matter how general an object and continuable to the others, it must, at least provisionally, be accepted as indivisible in some respect. The idea underpins mathematics clearly enough. Still, the same idea, albeit taken analogically, is adopted in the philosophy of nature.

In the Middle Ages, geometry and arithmetic were deemed separate sciences. As known, the Cartesian idea of *mathesis universalis* originated from joining those two sciences. An algebraic equation can be illustrated as a plot, and conversely, a “reasonably simple” curve might be described algebraically.

Still, a certain reason had existed for separating those two sciences. For geometry faces continuum, whereas arithmetic – unity. Every equation might be expressed so that the right side of it equals some constant (which is *a* unity). Some constants (no matter how understood) are to be accepted after all. Now, the constant is far from being the immediate datum of our sensual experience, as the datum in question is affected by the continuity of changes.

Aristotle addresses in “Physics” the problem of continuity profusely. Motion, the primitive datum of the experience, is potentially divisible, and the continuity is its feature. The same is, consequently, the case with time. For according to Aristotle, it is the number of motion. Numbering, in turn, is connected with finding some constants in the flux of time and

ultimately the constants of intelligible nature – those scientific ones. Some point of reference must be accepted for understanding the very motion affected, as it is, by continuity.

Aristotle is both cautious and precise in formulating the definition of time. “The number of motion according to «before» and «after»”. It is just “before and after” that accounts for the cognoscibility of motion on the primitive stage of experience. Paradoxes of Zenon of Elea issued from the miscarried idea of time made up of the infinite number of moments, i.e. discrete elements, which, when confronted with the continuum of a material object resulted in motion being “unreal”. And it was just the “unreality” that Zenon of Elea tried to prove; for he attempted to defend an extreme guise of invariability espoused by Parmenides (his cherished master). Now, Aristotle rather tries to explain the phenomenon of motion than to deny its existence. “Before and after” is considerably less than a set of discrete elements – “points” of time. However, it cannot be doubted that motion is numbered by time.

Expressing the thought in more up-to-date terms (as suggested in S. Thomas, *In Phys.*, VI, lect. 2, 3) we might state that both time and motion consist not so much of “points” or discrete elements as rather of differential elements. The situation seems to be clear: it is impossible to describe motion (in physical terms) without using calculi. The separate problem is that of the ontological status of the differential elements. Moreover, the problem is not that of material objects solely, for Leibniz deemed immaterial souls to be monads too. The Leibnizian idea of the indivisible is connected with that of the infinitesimal. The indivisible is that which has no parts. Although souls and monads were supposed to lack parts, and were not infinitesimal, both categories have in common the feature of being unextended. The philosophical problem was how, or whether, a continuum can be built from indivisible elements. Thus, the question returns of the relation between the mathematical and physical objects on the one side and those purely natural ones on the other (the physical should be distinguished from the crude state of nature; human soul is a nature). So, it is the problem of the relation of mathematical objects to those real ones in general (to the human mind too).

Moreover, the problem might well be as general as to encompass not only motion in the Aristotelian sense but rest too. True, it seems *prima facie* difficult to find a natural counterpart of a motion and opposed to it (rest must be so), since (physically speaking) no material object can be at absolute rest. Consequently, rest (*quies naturalis*) is to be understood not that much as the lack of energy (matter is associated with energy after all) as rather another kind of it. As for humans (subject to a special motion of mind), it seems that interiorization of a science consists in finding a rest of mind after reasoning (a laborious process which leads to the perfection of mind). A child – most probably – interiorizes in such a way science he/she has been learning. Before finding a rest, a crude mind of a disciple confronts a problem. Instead of putting up with a simplistic idea of the absolute privation of energy, two kinds of it should be distinguished: the extrinsic (kinetic) and the intrinsic one (potential). Thus, we may speak of a potential of mind. Rest is not that much a total privation of motion as rather an “inner motion” of a body (or a mind) within the natural barriers of its oscillations. The equilibrium of those kinds of energy occurs in the simple harmonic oscillator (SHO). Thus, continuity would be a derivative of them both and would be rather *a* continuity (viz. that of an object) than continuity as such. The latter cannot, in fact, exist in nature, as it is a mathematical abstract only. The barriers (of oscillations) are, in turn, to be identified with the natural place of a body.

Thus, the continuity of a body and the continuity of a motion are relative to each other. According to Aristotle, the fact that a body occupies a place is a derivative of its interaction with the environment. “Place is the immobile boundary of that which contains first” (Thomas, In Phys., IV, lect.6, no 470; Pierre H. Conway, O.P.⁶⁵) A certain (“ideal”) rest of a body would have resulted from the barriers being totally impermeable; the fact nowadays (after discovering of quantum tunneling) proved to be impossible. Some part of oscillations issues from them. The place from which the energy of a body flows into the environment and vice versa is permeable and called by Scholastics *potentia* – a *specific* source of motion.

A string clamped on rigid barriers performs the simple harmonic motion (SHM). Still, it is necessary for an impulse to rebound that barriers should be elastic to a degree. It is convenient to assume that barriers are both rigid and elastic. However, that ideal is impossible to exist in nature. The barriers are endowed with some continuity and not to be regarded as lines or surfaces, for a barrier accomplishes a motion accelerated in the direction perpendicular to that of the propagation of a wave. This acceleration can be described in terms of the Classical Newtonian Mechanics with the *approximation* proper to ideal objects. A simple harmonic oscillator can be constructed, since setting down barriers of oscillations is possible in objects called “big” ones. The object and environment can be distinguished arbitrarily as it is the matter of convention and convenience only. Still, no *natural* oscillators can be constructed in that way. Natural oscillators have barriers determined and “constructed” by nature (the environment) itself. These barriers constitute the natural place of a body.

If speaking of the natural place and what acts in it, a certain point of reference is implied. But in fact, an individual substance is similar to a point or to a moment according to the mode of our apprehension only. An individual can be *imagined* as a geometric figure, but the problem of what it *really is* seems to be unavoidable.

The problem might be encountered from another point of view, viz., that of how *general* the physical description of a body might be, since, perhaps, if general enough, it just approaches the real body instead of putting up with the imaginable one, even if the image of an object be exact and scientific). Now, the most general equation of motion is that of SHM, and the equation itself is the Linear Differential Equation. Here we stumble upon the *natural* boundaries of both bodies and applicability of calculi. SHO might be described with some approximation in the terms of Newtonian Mechanics. However, the adequate description is but suggested and to be obtained in analogical terms only.

The continuity of the place occupied by a body and of the movement too can be seized in the Aristotelian category of τὸ πρὸς τι (relative). The relativity is instilled in the very nature of motion. So that motion might be understood at all (in any degree whatsoever), it is indispensable to distinguish (i.e. to seize a relation) between the moving and the moved. In other words: the source of motion and the object it affects. As has been said, distinguishing an object and the environment might be – to some extent at least – the matter of convenience only. The approach *might be* justifiable to some degree or in some respect. In reality, it is

⁶⁵ <https://dhspriority.org/thomas/Physics.htm>

justifiable provisionally only. For the very restrictions imposed by the approach must be eventually trespassed and a more general method adopted, which is to say: the one allowing grasping the moving and the moved more distinctly. Moreover, so that the very relativity of motion be described *adequately*, it is necessary to identify objects, which is to say: grant their identity. Each thing is identical with itself. If the moving and the moved are seized adequately, they must be grasped as *definite objects* i.e. the relation between them must be founded *in reality* on the fact of the extremes being definite, i.e. identical with themselves. That the relation might exist, it is normally required, that extremes should exist first. However, the matter of *the ontological* priority does not overlap with the matter of *the cognitive* priority. The identity of things is not that of things being empirically given as identical. The primitive datum of the experience is just affected by the lack of the perceived border between the moving and the moved. The distinction comes but later on, which can be checked by any act of introspection.

The extremes must be seized in some manner as the primitive datum of experience must be elucidated so as to be what it is supposed to be – the datum, and not just a blind impulse. Otherwise no cognition of the real world would be possible. Moreover, some “points of reference”, i.e. relatively identical extremes of the instance of motion must be grasped too. A firm footing for a change makes it both possible and understandable. Footing is – philosophically speaking – a substance. Hypostasis might be translated also as “pledge”. Charles Annandale’s Dictionary defines the latter as: “the thing pawned as security for a repayment of money borrowed or for the performance of some agreement or obligation”. Now striking out that “for the sake”; making change an entity independent of a subject; failing to distinguish between *something* that affects *someone* (as e.g. evil can affect a person) must lead

3. 2. Towards relativism

The supposition that things are in a constant flux was ascribed in antiquity to Heraclitus, and was (wrongly) believed to be an element of the Ionic Philosophy of nature. According to many, things vary incessantly to the effect of grasping constant features of the real world being impossible. Hegel, in his own words, accepted without restrictions all statements of Heraclitus. That might sound quaint, as only fragments and testimonies survived and those that did not, need not confirm the romantic vision of Heraclitanism. In fact, Aristotle’s testimony is rather cautious here. Be that as it may, the rejecting of physical constants in general added up to the rejection of non-contradiction principle and Heraclitus is mentioned by Aristotle in this context. Needless to say, the rejection was incomparably more attractive for Hegel.

According to both Thomas and Aristotle, the fundamental role of the non-contradiction principle consists in distinguishing between objects that are related in any way at all. At the same time, things distinguishable to each other appear indistinguishable in themselves, which is expressed in the aforementioned identity principle. But the importance of the latter principle was overestimated to the detriment of the principle absolutely first: the non-contradiction principle. Kant believed in the priority of identity principle and many followed suit. In fact, the principle is valid secondarily only and in the background of that

absolutely first. Even in metaphysics an object is seized as identical with itself only in so far as it appears *confronted with what cannot be identical with it*. But generally, all cognition consists in distinguishing. Otherwise life would have been similar to blundering in the fog. To be precise: no objects are distinguishable, as it were, automatically, i.e. directly. The priority of identity principle is bogus. Any act of introspection can prove the fact: seeing a new object we try to discern it against its background.

According to Aristotle, without distinguishing objects “it is impossible to say anything either to others or to himself”. Obviously, Hegel was not willing to accept the consequence of his philosophical imponderables and resign magnanimously from the possibility of communicating the sentiments that destroy the very possibility of communication. Without a certain point of reference no sentence can have a definite meaning. Hegel, in fact, assumed something of the sort. It was in the light of the Absolute Spirit that entire historical development of thought could be definitely assessed. Still, seeing that perspective was by no means tantamount to communicating it in the normal sense of the word. Consequently, the idea of Absolute Spirit was labeled as fundamentalist, and a vulgar relativism issued. But it was only due to the end of history (substantiated supposedly by Hegel’s Absolute Philosophy) that contradictions (of history) had waned. Now once the end was removed nothing but contradictions (of the human history) have remained. Normally, communicating amongst people implies constants they agree upon (e.g. the rules of the grammar of a language they speak). But Hegel assumed that it was only the Absolute Spirit humans could communicate within (and their alienation removed). His followers rejected the idea of the end of history understandably enough: there was a spell of time they lived in and subsequent upon the alleged consummation of times. Consequently, it were just contradictions supposed to elucidate the “complex” human history.

Hegel deemed acknowledgment (*Anerkennung*) to be the food for human spirit. Someone’s knowledge was nothing unless acknowledged by others. But, as was mentioned in Preface, it are rather *words* spoken out openly and responsibly (with *parrhesia*) that our intellect feeds on. Apart from ordinary nutrients, there are words of truth and fidelity without which human existence undergoes atrophy. Lost in the wilderness of contradictions human existence approaches and anticipates death. It is only intellect which liberates then. Heidegger understood the fact in his own way: rejecting the rational from the definition of man was a prerequisite for “genuine” forefeeling of death. Practically, communication (of those uninitiated) loses then its intellectual character and becomes sheer twaddle (*Gerede*, *Sein und Sein*, § 34).

The problem of communication was not new; for the mediaeval Latin Averroists grappled with the problem of how the science could depart from one (immaterial) object (the human mind had been previously thought to be just immaterial) and reach another one via a *material medium* between them. The solution was as radical as simple: “it does not «depart» and «reach»”; for the human intellect was one and the same for all individuals. Only the common psyche existed, whereas the particular (and the personal consequently too) in humans was identified with the animal in them. The transcendental psyche is *a* principle and a special one; for its activity cannot be reflected upon in the way a personal activity was believed to. A personal activity can be changed (and sometimes is expected to be so if wrong), whereas the transcendental one cannot be so. The principle could be (as Kant and

Husserl assumed) retraced, which, however, is not tantamount to being reflected upon in the normal sense of the word.

Practically, some different states of consciousness were granted (each of them) a status of independent entity and not changeable at least in the sense of words used by them being not interchangeable (Postmodernism). Philosophical languages that expressed them were deemed untranslatable. The consciousness was described quite arbitrarily. It evolved along with nature approaching (perchance) an ideal constant (dreamt of), but without any hope to reach it. Thus, a certain drawback of “scientific” languages appeared. For the natural ones are obviously translatable. Otherwise e.g. a Pole could not read Shakespeare unless perfectly acquainted with the language of the original. But being acquainted with e.g. the tongue of Hegel was deemed rather an obstacle to understand e.g. Aristotle. A Polish translation of Hamlet might be (indeed) imperfect, but it is hardly believable that it distorts, as a rule, the original rather than approaches it.

The conclusion of relativism might have been avoided; for Thomas described science as *a relative* of its own. There was a relation between a teacher and disciple. Science was not about “informing” disciples so as to mold their minds according to the transcendental ideal. After departing from a teacher’s mind, a statement is *directed* in the material medium *accurately* to a disciple’s mind. The accuracy makes for the possibility of *begetting a habit* of knowledge in the disciple, and analogical to that existing in the mind of the master before. Otherwise, no prospect of communication and mutual respect for *the spiritual dignity* of participants looms. Moreover, people would become isolated from each other just because no definite and constant direction of what was expected to be communicated was spotted.

The world imagined as radically relative, without constants in it at all, might well look alluring to some, or at least convenient. A change, as soon as perceived would have engaged us to the effect of the existence being similar rather to being carried out by the flux of events than to a rock the flow of time and motion rebounds against. The being-in-the-world would have appeared as being immersed in the constant flux of time and accepting an unengaged point of view – forbidden. The distance towards the (real or imagined only) variability might be assessed as undesirable and – what is perhaps true to some extent – impossible to discount materially. Be that as it may, an atrophy of existence must follow as a consequence of rejecting a broader (which is to say: theoretical and unengaged) perspective for the sake of the possible “discounting” the effects of human actions.

Every statement pretending to be universally valid must be, by the same token, not relatively valid. The same holds true as to the relativism itself. It is a dogmatism of its own. Its strength must be drawn from somewhere. If the footing is giving way, it will be congruous to step on the necks of those who struggle to maintain it unyielding after all. The very fact of doing so must be ignored so as to profit as long as only possible. In this way, relativism tries to profit from human thirst of truth (to parasitize on it).

Relativism is a certain vision of reality and its advocates are not that much philosophers as rather visionaries. A special attitude towards the world was assumed and contrary to that which laid foundations of the Western Civilization. For the ancient Greeks were no visionaries. No statements were dogmatically accepted without having been carefully discussed and seized in the terms as general as only possible. The attitude was both rational and founded on the cognizance of the ordinary facts. That is why being rational did not add up

to being rationalists who disdain the ordinary experience. For the Western Civilization, to be what it has been it is indispensable to accept this bequest of the antiquity. Especially, the attitude towards the imagined is important (as the flux of time is the original datum of our senses). Myths are apparently so – they are images but loosely connected with facts. The ancient Greeks treated them with a serene skepticism, contrary to the modern advocates of mythologism (Gadamer). Mythical characters might resemble some modern pictures (e.g. those by Braque). The imagination played a decisive role in creating the image of, say, a siren. Horace was not a devoted worshiper; he addresses the “creature” ironically as a “semi-beautiful woman” (*mulier formosa superne*). Perhaps without that fishlike tail *she* would be beautiful after all. But in fact, *it* was but a monster and a sexless one.

Albeit the imagination is necessary for cognition, the attitude towards the imagined, and the seen consequently too, is pivotal. The attitude can be that of a judge. Not facts, however, (as Kant believed) are to be judged or even despised and the defiant: “the worse for the facts” (Hegel) be the mark of humanity, but rather images themselves.

The perception of the movement is intrinsically connected with the sensible part of human nature. Traditionally, the motion was deemed to be the object of the common sense (*sensus communis*). No animal can be deprived of it, as the inability to register changes occurring in the world would have resulted in being thrown (*geworfen* as Heidegger has it) into the world and being-towards-death. The casual impact of the outer coefficients would result in the subsequent death of the animal.

The possibility of assimilating nourishment and avoiding the objects that can possibly harm an animal’s body is at stake. The latter might be regarded as a system and what maintains its existence – as an environment. That a system (SHO) might work, a driving force is necessary that pumps in the energy into it. The force must be at least approximately in accordance with the phase and frequency of the oscillations proper to the system. The work is, in this case, the same as the animal’s life, and the interaction with the environment is responsible for sustaining the individual existence. The same, *mutatis mutandis*, must hold true as for humans. Perhaps the difference consists in humans being more acutely aware of the character of the driving force of their existence. Naturally, if the personal character thereof is taken into account, the other humans can be regarded as an environment of the personal existence. The environment need not be that of the crude nature only. Moreover, the “social” environment is – paradoxically – *created* rather by persons than *existing* on its own. Man is a social creature “vanquishing the world” instead of yielding to its influence. In this context Thomas adduces the words of Jeremiah (In Rom. c. 12. lect. 3, nr 1015 in calce) Ier. XV, 19: *ipsi convertentur ad te, et tu non converteris ad eos*.

In the first part of “Being and Time” Heidegger provides a precise description of the worldliness (*Weltlichkeit*). It is precise (and to the point) just because being formulated in the background of the contested Christian tradition. Heidegger comments on it in his own way: he attacks the rational in man. All this adds up to setting down the ontological priority of persons versus society or vice versa. Are we rational because being social or the other way round? It seems that the social in question must be described in terms of the aforementioned parrhesia: openness of mind and thirst for truth. The given is more than just a phenomenon of the philosophy of subject: for truth to be given, the one who gives it (with openness of mind) must exist first.

The problem is, however, that of the philosophy of nature first of all: individuals are naturally adjusted to the environment as far as they act rationally, i.e. according to their nature. An animal's existence is not "immersed" in the changing world to the extent e.g. plants are (not to speak of inert bodies which, when moving, are simply "thrown" (geworfen) instead of originating their vital motion). Contrary to them, animals have the ability to discern what is likely to boost their existence (from without) from what is bound to destroy it. In other words: an animal is able to discern the "frequency" of the driving force i.e. that maintaining oscillations of its own organism. The oscillations are the life. The lack of discernment would have automatically resulted in the existence being destitute and threatened by the destructive influence of the outer world. *Good* and *evil* have a *definite meaning* even in the animal existence. For life and what boosts it is, generally speaking, good, and the opposite – bad.

Still, the common sense is not the most perfect animal cognitive power. The common sense is connected with the narrow "here and now", and living in "here and now" is the least perfect guise of existence. The animal existence might be fostered and its scope broadened if an animal is endowed with imagination, because the imagined can be remembered and, consequently, the existence transported into other spatial temporal circumstances. The imagination is used for finding a "better" or, generally, the proper place in the environment. On the other hand, the common sense is normally believed to vouch for being aware of "here and now". It was especially appreciated by some philosophers (Reid), or (as Kant has it) "overestimated" by them. For the importance of the imagination called by Kant "creative" was supposedly overlooked. Both stances are extreme and, consequently, to be avoided or accepted conditionally only. For the unbridled imagination and contrary to the data of the common sense is bound to undermine one's very existence in the real world. But on the other hand, the imagination as such (its use) is unavoidable should not the human existence be tethered to "here and now". It is about the imagination being used not that much arbitrarily as rather in the way it vouches for the objectively checkable possibilities of life. The animal imagination serves for searching nourishment *farther* and for the anticipation of what can possibly endanger the existence. The abuse of the imagination and focusing on the apprehension of death can assume even paranoiac forms, but, obviously, death is to be avoided. It goes without saying that the morbid fascination with death (and everything connected with it) is nowadays the fact. It is about the imagination not being what it must be: disciplined.

Consequently, not even in animals an absolute relativism of good and evil is possible. Nature punishes without mercy every foiled attempts and errors in assessing what is *in fact* "good" (profitable) and evil (nocuous) for an animal. There is good and evil at least in the sense of a certain *distance* towards the changing reality being indispensable for the animal existence. In this sense, things are good and bad just by being opposed in such a way to the animal existence. Without this opposition the life is not possible.

Humans try to seize the aforementioned opposition in more general terms. An animal differentiates between being satiated and hungry; cold and warm, etc. The animal existence as such is opposed to the environment, in which the opposites are to be distinguished. Now, it is proper to humans to seize them more abstractedly than animals do. According to Aristotle, the opposites may be called privation and form (στέρησις - εἶδος).

The creed of relativism can be summarized in the conviction that human existence is immersed in the continuum of evanescent events and distinguishing the constants cannot be peremptory (or: must not be so). It was believed that accepting those constants is but a matter of convenience, utility or the like. We might call it a desire for auto-creation. The animal is obviously incapable thereof. Nature eliminates an individual that does not respect the universal validity (and immutability) of its laws. Relativists imagine that humans could be more indulgent and tolerant and the blunt “either-or” be replaced with a humane “may-be”. The perfection of human existence would have consisted, accordingly, in shunning the “brutal” demands of nature. The problem is whether it can be done indeed. It is imaginable, no doubt; but are humans able to enchant the reality just because of speaking unison about the possibility? The words do not cease to be imagined just because being spoken out aloud. Most probably, human language cannot beguile the real word after all.

Human existence can be imagined as humane, or perhaps “humanitarian”, but cannot be understood (and abide) as such. Living in the world dreamt of might appear enticing. Such an existence can be – to use Horace’s words – *formosa superne* – apparently fine. However, no matter how vehemently hankered after, the existence is bound to be (“brutally”) interrupted and nature bound to vindicate its rights. It is only the matter of time, when the image yearned for – to use Husserl’s expression – “explodes”. For that existence is impossible in a long run. The bill is to be settled.

Living a child’s life without reckoning with the consequences of actions (children are permitted to shun reasoning as far as they conform to, and trust in, the rules) might be tempting. However, we are expected to mature sooner or later and to use the intellect and stringent reasoning instead of images and dreams. It is about the possibility of the adult life to appear. Without the use of reason the possibility is destroyed. Indirectly, humans are destroyed too.

It cannot be doubted that a certain margin of uncertainty exists in nature. However, it is preposterous to try and build the hopes upon it, as trespassing the margin must eventually lead to death.

Naturalism is justified in claiming that death is natural to animals. The demise of vital forces would have rendered the individual existence unbearable. Such an end is desirable after all. Accordingly, helping a wounded animal would have been a refined form of cruelty, were it not sheer infantilism. Usually, humans regard a restricted realm of the natural world only, but then *the* nature (the specified one) is to be reckoned with. A realm of nature must be restricted for a responsible activity. Nature is not a monolith. Particular desires compete in nature as it are particular natures that exist first of all. But they do not compete only. Different species form ecosystems and boost mutually their existence. That is why the universe is a totality. Normally, we put up with a restricted part of it, but eventually, we might be interested in the science that regards the Totality. Nature is intrinsically structured and the structure itself can be known in the philosophy of nature. The whole (the totality) is a harmonized structure. A whole (an animal) is a part of it and that is why it is able to find its own place in it. Killing a healthy animal just out of pleasure or cruelty is inhumane, no doubt. Or – in other words – it is not natural. It can be justified only in the perspective of a more perfect guise of life about to appear. Hunting (killing for pleasure) would be justified as long as a certain

ability in humans resulted of *eliminating* any obstacles faced in the everyday life. For *some* of them *must* be so indeed. In other words: the perfection in question is that of acting effectively.

However, humans do not put up with the fact of their death being unavoidable. It is specific for human existence not to be restricted to any particular form of existence (or any place) but to trespass them all. Still, as was noted above, the direction in which the *particular* borders should be trespassed is to be known precisely first of all. Humans aim at good as such departing from perceiving some regularities in nature.

Animals do so in a restricted aspect only. A certain kind of perfection is to be known and desired by an animal so as to trigger the action aimed at obtaining it. Apparently, a certain guise of form (εἶδος - μορφή) is perceived.

The starting point of the change is considerably more difficult to grasp. Human language is that of perfections first of all. The “tongue” of beasts bears a certain resemblance thereto, but the sentiments of anger, anxiety and the like seem to prevail in it. Apparently, a difference of quality takes place. Be that as it may, the perception of, say, hunger is the adequate stimulus to spawn the action aimed at obtaining the contrary. Albeit difficult to assess in positive terms, the starting point might be nonetheless described simply as privation. Evil is some kind of it. If the end is defined, the starting point must be so and *relatively*; i.e. in the perspective of the end about to be obtained.

The animal “relativism” (should the very word be used) would consist in that good and evil are valid *in relation to the animal existence*. In that sense only, good is relative as being related and justified “subjectively”, i.e. with respect to a subject (substratum) receptive of, and perfectible by, the good. Naturally, the subject can be described in *objective* terms first of all.

This subject is perishable obviously enough. Still, the very possibility of its existence (for some time at least) makes the extent of the possibility objectively definable. The fact of death does not equal to the fact of the *absolute* non-existence. The fact that an animal had existed before it died is *absolutely* unchangeable. A movement might be terminated by death. Still, any movement is that of a substratum and the different substrata possibly found in nature differ as for their durability (as to how their existence is terminated). Generally, substratum is called by Aristotle ὑποκείμενον. Good and evil must differ according to the durability (and the perfectibility) of substrata. Consequently, the subjectivity (that natural one) is, as it were, split into diverse subjects. In that sense only, good and evil might be subjectively defined. Still, the definition of a substratum must come first.

The problem is, thus, that of the durability (and the natural confinement) of the animal subjects. However, granted the priority of a definable substratum, the elements of it (elementary bodies) must be regarded as existing secondarily only. They might well have existed *before* an animal accepted them from the environment, and *after* it ceased to exist at all. However, as long as the animal was existing, they were forming the inner structure of its body. The difference between the inner and the outer side is pivotal. The elements exist *within* a structure as parts of a teleologically organized structure. The existence of finality is visible in the whole nature. Parts cannot exist so as to make up an “aggregate” or a “machine”. The similarity of living organisms to the artifacts is problematic, to say the least of it. The “aggregates” are imaginable as geometrical figures are, but none is really believed in the existence of, say, triangles in nature. The “shape” of the animal body is not at all definable in

geometrical terms. It is definable but in those teleological ones. The same holds true, *mutatis mutandis*, as for human body. The finality of its structure is salient enough.

The problem of the inner and outer side, and the problem of the totality of parts is connected with the aforementioned problem of natural indivisibility. According to Thomas, every animal defends the integrity of its body inasmuch as it defends its own existence. If the existence of the elements; “atoms” within that body; had been independent of the body, the animal body would have been built like any other artifacts, e.g. engines. Perhaps some have such a notion of nature, but it is nonsensical nonetheless.

The advocates of the so-called atomism relish in quoting Democritus as the father of the theory. But Democritus claimed that atoms differ as to their quality (Aristoteles, *Metaph.*, I c. 4, 985b 15 – 19). The conviction, on the other hand, that the world is woven out of simple atoms of space and time stems not from the ancient Greeks but from the medieval Arab Asharites. The finality of the cosmos was pivotal for Greeks.

The image of an object can be similar to that of an object of a computer game and supposedly constructed out of pixels (“atoms”). The game can evolve in the direction chosen by a participant or devised by the author, just because it is, indeed, put up out of simple elements. But it is not the case with nature. The course of natural events cannot be directed *ad libitum*. The elements of the universe have a certain nature and the dynamics of the changes that issue is anticipated in the elements. In other words: the elementary structure leaves open the possibility and the real one of some more perfect guises of existence (called life) to occur.

A computer game is likely to produce a state of mind similar to those psychedelic ones. A participant is totally immersed in the sequence of images. And the very games are advertised as being able to do so. The fact that humans can afford living that kind of life is worth deeper consideration. Apparently, no animal can live so. Humans differ essentially from animals; either in plus or in minus. Human nature can sustain the ideas that bear but a slight resemblance of being rational. The biblical “Legion” was harbored in the mind of just one individual, but a herd of swine was unable to sustain its existence. Bertrand Russell deplored the fate of the swine haunted by the Legion. Still, its/his/her wretchedness appeared (and contrary to what the Legion wished) in the very moment it was confronted with the “crude” nature of the beasts. What is, then, more deplorable? Is it the fact that demons *must* cease to exist in “crude” animals and along with them, or rather the fact that they *can* exist in humans whose death is not as abrupt as that of swine but rather postponed, imminent and *prolonged* all the time? Humans can be haunted by simulacra too, albeit their destructive influence upon the “crude” nature has not yet been explored. Probably it will be so in the future. Anyway, a morbid fascination with evil (no matter how understood) is a striking feature of modern times. And it goes hand in hand with “humanitarianism” towards animals.

Let us address the problem of the animal existence once more. A sheer observation of the animal actions testifies to that not an individual existence is aimed at first and foremost. An animal is willing to sacrifice its own life for the sake of the herd, offspring or the mere possibility of having it. What is, then, the aim of the action? One’s own progeny might be so, but need not. Baboons defend all the cubs of the herd indiscriminately. The very fact of gathering into herds is significant. Birds gather into flocks so as to use the gathered perceptions of all their members. Apparently, the perception is then more perfect if resulting from individual (particular) ones, and the herd instinct fosters the perception. The specificness

of motion is perceived within the borders of a singular species, and action that issue aim at its maintenance. A specific identity and connected with a given species is to be maintained. In this sense conservationism in the animal world is the fact. The category of “better” and “worse” are *relative to a species* maintained and maintainable in the nature.

The categories of “better” and “worse” can be *imagined* to be more capacious than those of unchangeable species and constants existing in nature. Thus, the idea of progress, development or the like would have been more general. Moreover, the very idea of constants would have been deemed “superfluous” and to be disposed of. However, the problem of priority is that of what is originally *cognoscible* rather than *imaginable*. For the idea of species being meliorated is not conceivable, or at least not to be taken literally. The action of the intellect consists, to the contrary, in seizing constants only without blurring the outlines, for blurring is proper to the spontaneous play of imagination. The basis for human existence is differentiating and discriminating as neatly as only possible and the lack of discernment must lead to death. Unwillingly, Freud, the evolutionist, admitted the fact. At the ultimate stage of the development of his thought he assumed the existence of the so-called “death instinct”.

It cannot be doubted that images gather in our intellect. Still, the way they do, makes for the quality of our life, for they can gather either at random and casually as in psychedelic states of mind, or at purpose, and determined conclusions be *gathered* from principles.

Particular images are similar to animal individuals and those gathering in herds. The finality of actions is considerably more visible in herds than in individuals. In a flock of flying pigeons, an admirable harmony of movements is perceptible; their precision is almost incredible. There is, in natural motion, without doubt, a certain form of perfection (εἶδος - μορφή) perceptible. Albeit taking place in the physical continuum, the motion (its essence and finality too) depends on the borders existing in this continuum. The durability of a species, and an individual within in it first of all, depends on the distance (its degree) assumed towards the objects observed. Sometimes (as was mentioned above) a mere possibility of assuming such a distance suffices to justify the most hazardous and otherwise deemed unreasonable actions.

It is certain that the human environment differs essentially from the animal one. Humans are incomparably more susceptible of e.g. air pollution, albeit – paradoxically – equally inventive in denying the fact. If the human species is “endangered”, it is in a special way so. The very fact can be “interpreted” or – as psychologists say – rationalized, which is by no means tantamount to being understood adequately. The world of ideas seems to some to make up the human environment first of all, and the supposed priority makes it clear why that natural one can be almost totally disregarded. If humans happen to be “endangered” and the fact admitted after all, it could be quaintly so, e.g. as expressed in the Heideggerian idea of Angst. Be that as it may, the human adaptation to the environment requires the use of a faculty essentially different to that animal one; for animals are incapable of Angst, or anything defining their existence in this manner. The human faculty enables to transcend the spatial temporal to the degree no animal possibly can. For the time being, it might be stated that human imagination is incomparably more “creative” than that animal one. The fact was both made out and taken literally by Avicenna and Kant, who believed that the human imagination was active. In fact, if it happens to be so, it is only because of the intellect (the individualized one; not to be identified with collective consciousness). The imagination as such is passive,

albeit it *happens accidentally* to be the opposite (active) just because of the participation of the intellect. All human senses and emotions are passive too. It distinguishes man as a species that one faculty is totally active (the intellect), whereas the other can only participate.

Consequently, it is just because of the intellect (not because of the imagination) that the human environment is specific and inclusive par excellence – in the way unachievable to animals. For if what is good-for-me is apprehended, it is because of the intellect that the “me” can be replaced by any human subject whatsoever. The subject for the sake of whom an action is undertaken is universal absolutely speaking. The categories of “better” and “worse” as applied to humans are, consequently, so too; or, practically, they can be so to the degree of being adequately understood.

It is hardly believable that humans be unable to seize the physical constants at least on the level proper to animals, for thus they would have been debauched animals. At least *potentially*, humans are able to grasp these categories (of being broadly understood) more perfectly than beasts do. *Actually*, they must differ from them either in plus or in minus.

The animal instinctive actions mentioned above, are “altruistic” at least in the sense of aiming at the good proper to a species rather than to an individual (The fact was spotted by Plotinus already). They are so as the principle they flow from is more general and inclusive of many forms of life, not necessarily that individual one. A stork throws away from its nest an ill squealer not because of applying the principles of eugenics in the Darwinian style, but because the squealer is for the adult stork undistinguishable from an unanimated and lifeless object and is perceived to be out-of-place. The stork simply perceives the fact of the squealer not being animated so perfectly that it might be an “ordinary” squealer. Every action must flow from a determined principle and the perfection of a principle is proportionate to that of an action possibly spawn by it.

The fact that human actions are variegated to the degree totally imperceptible in animals testifies to that the principle of the actions must be *essentially* different too, and the discrimination of objects more perfect. A swallow builds the nest in one determined manner, whereas humans are organically unable to reiterate the same actions mechanically. They are determined, no doubt, but they are so by the very individuals. If forced to act mechanically, humans commit banal errors. Consequently, the principle of actions must be more perfect than the crude animal one; paradoxically, it is just responsible for breaking with hackneyed actions. Moreover, the very error committed, if reflected upon consequently, becomes a source of innovative thinking and has a certain heuristic value. The reflection might be called humility and no animals can be “humble” as safeguarding the proper place in the world is tantamount to being assertive.

The most striking feature of humans seems to be the ability to build the material culture. The principle thereof must be a kind of cognizance of the outer world totally unknown to animals and the attitude to the world in humans be *relative* in a special way. According to Aristotle, science is such a *relative* (τὸ πρὸς τι) and known as such. Consequently, the categories of εἶδος - μορφή and στήρησις, which mark the starting point and the end of motion, are *used* in animals only, but never reflected upon, whereas in humans they are so and seized in objective terms.

The action that follows might (and should) be morally good, but in fact it could be the opposite. The principle is neutral and capable of triggering actions both good and evil.

Moreover, the latter are more perceptible, as they affect negatively the very possibility of life, whereas the former might be taken for granted. Animals cannot be cruel or wretched and to regard nature in such a way is infantile. To the contrary, human actions and those bad ones especially might meet with indignation as *subjectively inconvenient* and harmful. In fact, they ought to be judged only – nothing else. Nature can be ruthless or uncompassionate but never perverse or debauched. Animals are unable to raise systems *pretending* to be “humane” and “scientific” (as was the case with Nazism and Communism). Animals are unable to murder millions for the sake of the ideal of humanity the individuals do not live up to. The idealistic Weltanschauung could decide that it was “better” for some individuals not to exist. Moreover, the very perversity consists in that the fact itself is denied the proper name. E.g. those to be “eliminated” were “not humans”, as being humans could *be but positively; i.e. institutionally* decided. In the case of ideologies, the categories of “better” and “worse” (normally related to a determined substratum only) were extended beyond their natural borders (constants). In particular, the categories of “better” and “worse” were extended beyond the *human* substratum. It was *pretended* that they could encompass actions called *humane* towards e.g. animals,⁶⁶ but *in fact were exclusive* of these substrata that are *really* capable of sustaining the humanity; i.e. be or become humans at least potentially (e.g. the unborn). There is in humans the ability to recognize humanity wherever it happens to occur *in the natural world* and to do it *adequately*, not just because of boasting the humanity of who deigns to recognize it. The abstract notion of human nature is applicable to all physical substrata that chime in with it; i.e. are capable of the physical existence as humans. The fact cannot be decided; it must be simply acknowledged. However, in the “human” world, humans happen to be unwilling to recognize *the necessary relation* of humanity to all its physical substrata. It might be due to the culpable ignorance, and the relation disregarded, or perhaps not sought painstakingly enough. An Ersatz, an ideal of humanity (the institutional one) can appear. But the real human persons are always a challenge and a reproach perhaps too. The humanity of the unborn, terminally ill or the like – excluded in manifold ways – is a challenge indeed.

Humans – contrary to animals – are able to grasp the constants universally valid and, by the same token, absolutely inclusive. Good if accomplished by humans must have absolute character; so universal that even human evil happens to bear a suggestive (and importune perhaps too) resemblance to the universal character of good. Human actions are not inclusive in the sense of individuals deserving sheer tolerance or condescension. Humans deserve incomparably more. They deserve being treated according to what they really are, and capable of the unconditioned and absolute liberty, viz. the ability to obtain good as such. If they are not so; if actions are *objectively bad*; the exclusion turns first of all against the excluding. A simple experiment can prove the fact. Let us imagine an individual unwilling to recognize humanity in objective terms and an isolated one. To *tolerate* him/herself is in that case almost infeasible and the loneliness – unbearable. Evil turns in this case *directly* towards the evil-doer. If experiencing the *physical isolation*, one is *objectively ascertained* as to the validity of his/her action-categories. That is why the desert was a trial for eremites. Generally speaking, there is no reason that the humanity *in you* differ in any way from the humanity *in me*.

⁶⁶ Is “humane” more than “human” really?

Obviously, those physically nigh (and perpetrators themselves first of all) are targeted first, which however is but incidental. In fact, anyone can be targeted.

The trial of desert, however, might be hankered after too. The desert of modern times (nature untouched by human deceit) might be e.g. a virgin mountain. The trial reveals bluntly the truth about who experiences it. And the truth is then appreciated more than life.

The attitude of animals towards the outer world is characteristically uniform. The contrary is visible in humans and the ability to produce artifacts is a token. Animals are able to use instruments, but are unable *to reflect* upon the fact of their being used and, thus, to multiply their application ad infinitum. Consequently, no structures of instruments are workable save by humans.

One matter deserves a closer attention. Not only purely material objects can be structured but structure itself can be put in the first place with the material used, existing in the background only. Humans are able to use signs and to build language. In this case, the material in them is of secondary importance only. The language is an artifact, but a special one.

Animals communicate certain signs, which, however, are related to a restricted realm of existence only. The “animal truth” is concrete and cannot become universal. Humans, to the contrary, are able to distort and disregard the concrete truth deliberately. The fact would have been not-understandable, if the dynamics of evil and falsehood did not draw its vital forces from a sheer resemblance of good. Such a dynamism exists in fact and the fact is both interesting and worth reflecting upon. Not because evil as such were interesting (such an interest in evil is morbid), but because it can be really proved to be *ultimately* doomed to non-existence (as evil is nonexistent in the sense of being the privation). This dynamism would have been unconceivable, if human language was not directed principally to truth and the ultimate destiny of man too. On the other hand, every false statement draws its alluring force from a sheer resemblance to the truth. The more complex and structured a thought-system, the more enticing the falsity possibly existing within; the verity happens to be mingled with falsity this way. Evil as such and falsity too is simply auto-destructive end abhorrent. The fact was stated by Augustine and Thomas.⁶⁷ The case of the Legion and the swine is instructive enough.

⁶⁷ Summa Theologiae I, q. 49 a. 3 c. Respondeo dicendum quod ex praedictis patet non esse unum primum principium malorum, sicut est unum primum principium bonorum. Primo quidem, quia primum principium bonorum est per essentiam bonum, ut supra ostensum est. Nihil autem potest esse per suam essentiam malum, ostensum est enim quod omne ens, inquantum est ens, bonum est; et quod malum non est nisi in bono ut in subiecto. Secundo, quia primum bonorum principium est summum et perfectum bonum, quod praehabet in se omnem bonitatem, ut supra ostensum est. Summum autem malum esse non potest, quia, sicut ostensum est, etsi malum semper diminuat bonum, nunquam tamen illud potest totaliter consumere; et sic, semper remanente bono, non potest esse aliquid integre et perfecte malum. Propter quod philosophus dicit, in IV Ethic (c. 11, 1126a 12-13), quod *si malum integrum sit, seipsum destruet*, quia destructo omni bono (quod requiritur ad integritatem mali), subtrahitur etiam ipsum malum, cuius subiectum est bonum. Tertio, quia ratio mali repugnat rationi primi principii. Tum quia omne malum causatur ex bono, ut supra ostensum est. Tum quia malum non potest esse causa nisi per accidens, et sic non potest esse prima causa, quia causa per accidens est posterior ea quae est per se, ut patet in II Physic. Qui autem posuerunt duo prima principia, unum

The scientific language is directed to truth in general. A special attitude towards the flux of events is assumed and a distance towards it too. The allegedly evolving continuum is distanced here. The distance; disengagement; a special cognitive attitude of men towards the world as such and the human one in particular can render the existence of man on the earth better, which is to say, more stable and firm. Moreover, *another* engagement is needed in the sense mentioned in CHAPTER III. 3. For the perspectives of human existence are not to be restricted to the earth. Archimedes is famous for having said: “Give me a lever long enough and a fulcrum on which to place it, and I shall move the world”. Now, both “lever” and “fulcrum” need not be taken literally. In this sense, the tongue of science is the tongue of a “translation”, and both terms adduced above might have a universal and abstract meaning. Still, the only way to “interpret” events so as to deprive them of their uncertainty is to abstract the intelligible purport from them and to form signs universally valid. The more universal a science is, the more stable human existence too. The subject matter of science is, according to Aristotle, universal.

Death and life intertwine in the human environment clearly enough. Perhaps, it might be supposed that an animal “gets to know” the durability of its specific existence at the expense of its own death – possibly suffered for the sake of the herd or the offspring. In animals, death seems to be natural and an end of it (its aim) seems to be expectable too. Still, it would be convenient to try and define what *the human* being-to-death consists in. The idea that human life is constant dying is as old as Seneca’s times. If the very specificness (i.e. being a species) of an animal is being “liberated”, as it were, from its particularity at the expense of an animal’s death, it would be reasonable, as it seems, to try and determine the foundations of human existence in – analogically – mortifying the animal in it. The theme of dying, seized in philosophical terms is a leitmotiv of the Platonian Phedo. Plato, following Socrates, made out the complexity of human nature. What is especially interesting here, is man’s being complex of the imagination and what surpasses it after all. Consequently, the problem is that of a specific attitude towards the imagination. The images (and imaginations) seem to be but a matter of, and subservient to, human understanding. In fact, the imagined is understandable to the degree it is deprived of its purely animal character and participates of

bonum et alterum malum, ex eadem radice in hunc errorem inciderunt, ex qua et aliae extraneae positiones antiquorum ortum habuerunt, quia scilicet non consideraverunt causam universalem totius entis, sed particulares tantum causas particularium effectuum. Propter hoc enim, si aliquid invenerunt esse nocivum alicui rei per virtutem suae naturae, aestimaverunt naturam illius rei esse malam, puta si quis dicat naturam ignis esse malam, quia combussit domum alicuius pauperis. Iudicium autem de bonitate alicuius rei non est accipiendum secundum ordinem ad aliquid particulare; sed secundum seipsum, et secundum ordinem ad totum universum, in quo quaelibet res suum locum ordinatissime tenet, ut ex dictis patet. Similiter etiam, quia invenerunt duorum particularium effectuum contrariorum duas causas particulares contrarias, nesciverunt reducere causas particulares contrarias in causam universalem communem. Et ideo usque ad prima principia contrarietatem in causis esse iudicaverunt. Sed cum omnia contraria convenient in uno communi, necesse est in eis, supra causas contrarias proprias, inveniri unam causam communem, sicut supra qualitates contrarias elementorum invenitur virtus corporis caelestis. Et similiter supra omnia quae quocumque modo sunt, invenitur unum primum principium essendi, ut supra ostensum est.

the intellect. Should any positive meaning be ascribed to the Heideggerian *Nichtung* and proper to human dignity, it must add up to the abstraction of the universal purport from the imagined. If the intelligible is to be gained (and a similitude of a thing born in the soul), the animal (the imagined) must be “annihilated”. The abstraction is active *par excellence*. All senses, on the other hand, are passive. It are humans alone that are able to live fully (actively) and to mortify the animal in them (to annihilate it). Thus, the sense of being is discovered and appears to be manifold, according to various guises of being to be found in the world. For everything is knowable to the extent it is being (Thomas). In the human intellect, the species of things can exist in the way proper to man. The specificness of human existence consists just in the fact. This implies a special attitude towards the world; a relation to it. In the history of the civilization, such a principle (a principium) of the human presence in the world can be traced back.

Still, the historical data are but a sign, not the sense of the human existence. It might have appeared in any circumstances, albeit it appeared in *some* indeed. The history is stamped with the mark of human rationality. However, the very mark is not a proof. It can be “interpreted” and perhaps arbitrarily. The same holds true as to the human language. It can be both used and manipulated.

It is obvious that a word written on a sheet of paper has a certain shape and is material besides. The same is the case with the words spoken of, for their “shape” can be e.g. recorded on the magnetic tape. Even in the case of the cognizance deemed fully formal (the mathematics is believed to be this), such a material carrier of the purely formal purport is indispensable. It is impossible to accomplish any theoretic activity without seizing the material counterpart of the formal.

On the other hand, the very being formal generally speaking, was for a long time assessed as a token of science, and mathematics as an *ikon*. Mathematics is formal indeed, and the subject matter thereof was regarded in the Middle Ages as resulting from *abstractio formalis*. No doubt, a firm basis of cognizance is obtained when seizing mathematical objects. And the mediaeval conviction as to the genesis of the science is far from aiming at undermining its absolute validity. Scholasticism was not a psychologism. Mathematics truths are not “approximately” or “empirically” valid. This is not the sense of *abstractio formalis*. Similarly, the attempts to assimilate philosophy to mathematics and to make it more “scientific” and “exact” are miscarried and must remain so. The material side of signs is indispensable after all, and no formalism achievable unless judgment (proper to metaphysics) be deemed formal because of addressing some matters of particular sciences. The value of philosophy consists not in being assimilated to a science supposed to be paradigmatic, but in answering the questions the other sciences (and mathematics) are unable to answer. In particular, the problem of the real relation of mathematical objects to the material world cannot be elucidated save in philosophy, which, naturally, does not amount to philosophizing in mathematics. Both disciplines are different as to their subjects and methods.

Thus, the problem is more general than just the problem of signs as such. It is the problem of the relation of the formal in the human cognition to the material world. Moreover, it is the problem of the relation of the animal in man (which is in fact the material) to the act of the intellect, which can only grasp the formal. The problem how, and to which extent, the formal in the human cognition is related and referable to the material world is grave.

The attempts to debate the problem undertaken in the Middle Ages were disregarded as soon as the medieval paradigm of science (and the Aristotelian too) had been rejected, because it had been believed that the sciences called nowadays exact had not been given due appreciation and possibilities to develop within it.

The relation (although not clear enough) seems to be at least effective (pragmatically valid). Hypotheses (theorems) are formulated on the basis of the observable facts and verified subsequently. The restrictions or amendments, in turn, are formulated when having carried out experiments which allow formulating more general hypotheses – closer to ideal mathematic objects. Be that as it may, nothing will guarantee that the algorithm is *absolutely reproducible*.

Still, it seems to be only natural to assume that not only hypotheses (“approximations”) are formulated in the contact with the physical world but mathematical objects are formed too (in *abstractio formalis*), which stem from the same natural source. It was claimed so by scholastics indeed. In this case, however, the name of theory resumed its primitive meaning as presented in *Metaphysics VI*. It was the absolutely valid knowledge. The theory called by Aristotle *μαθηματική* stems from the experience and the method adopted in it was the formal abstraction. The formal in things is grasped, or to be precise: a formality; the formality of their quantum, for quantity is a formality indeed albeit the poorest one. We grasp the quantity and drop everything else (“*abstrahimus*” includes the meaning of those both verbs), which might be otherwise possibly important. Thomas adds that we grasp the formal as the imagined one. Thus, mathematics appears to be at the border between the sensual and intellectual in man. The imagination is modeled, in a sense, with the objective of seizing the formal aspect of things adequately. The possibility of seizing other aspects of things adequately in another manner remains open. The fact is readily checkable by sheer introspection. For an intuition occurs; the imagined is looked upon as if the material object would have been. In fact, it happens so if e.g. a plot is drawn, i.e. depicted literally speaking.

A special importance was attached to the intuition (called *Anschauung*) by Kant. It was, as it were, a screen on which objects are seen either literally (*empirische Anschauung*) or mentally (*reine Anschauung*). Understandably enough, mathematical objects are “seen”, albeit physically absent. It is, at the same time, proper to mathematics to grasp the imagined with the rigor of its own and the imagined is as exact as normally impossible to animals.⁶⁸

By participation, the objects of experiments are exact too. To be precise: they are so secondarily only as the mathematical objects only are exact *par excellence*. They differed that much (were so stringent) from what was normally experienced that Kant believed in that temporal sequence of the objects was characteristic of “intuition”, and rejected the causal relations in nature. Consequently, the idea of experiment was sharply contrasted with natural cognition (characteristic of both the ordinary and the Aristotelian experience). Kant puts the problem paradoxically: the reason did not discover the laws of nature; it dictated them to it.

⁶⁸ At the border of the natural and the ideal mathematics generally speaks of, the principle of number (– 1). It might be called – as was observed above – the imaginary number not because being imaginable, but because being effective principle of strict (exact) imagining accomplished in mathematics (Cf Chapter III, introduction).

Experimenting was supposed to be carried out by means of an instrument called *Verstand* – the reason.

The statement might sound strange, and some justification was to be sought. It seems that in the imagination a dictate occurs indeed. Do we not command them at whim? That some fail to do so might be the proof of their immaturity. Really, as humans (and ripe ones) we are expected to command them. Similarly, the material objects might be supposed to be “constructed” in pretty much the same way as the imagined is. No one denies the fact that imaginations can be modeled. Now, Kant believed that the border between the imagination and the material thing *when imagined* vanished. On the other hand, if the discontinuity (a relation) of two objects (the real and the natural had been believed to be really related and different) waned, the object of science would be totally absorbed by what was called consciousness. All that remained was but an insignificant residuum (*Ding an sich*). It had no relation to the reason. The irrational appeared under the surface of phenomena knowable in science. It was given various names by those who were going to complete the system of Kantianism in the years to come.

Kant believed in the unity of physics and mathematics and founded it on the so-called transcendental unity of consciousness. Now, assuming the priority of mathematics and trying to model all other cognition after the fashion, the analogical “modeling” of nature was only to be expected. Thomas says that if we try to understand anything at all, we form an image about to represent the thing. The problem remains open of the representation (the real relation to the world) of what is imagined. If the relation is bogus (or not cognoscible), we live in the world thought out and Hegelianism must follow. Hegel put a special stress on the history and understandably enough. It is but the matter of the historical development of the civilization that some “objects” could be modeled (as the instruments of experiments are meliorated). Moreover, nothing save history would have remained if the real relation of the human concepts to the real word was rejected. The Hegelian man would have become “an absolute master” of reality, but the problem is that the “reality” ceased what it had been before.

The mastering of reality might appear to be either nonsensical or an unsavory joke. The problem of mastering one’s own destiny (one’s own life) is as important as no other can be, but the shape it assumed in Hegel, and was bequeathed to posterity (to us also), is uncanny indeed. Obviously, a certain tampering with words occurred: “man” was “absolutely” free; but an individual was denied the possibility of e.g. braking away with a bad habit. Man was supposed to be as weak as not in a position to master his/her own body. The free act of the will was replaced by some medicines, and a “receipt” for easy life provided. “Man” was believed to be able to dictate the laws of nature, but unable to master the simplest affairs of the ordinary life. All this adds up to trampling the *individual* human dignity, when extolling, at the same time, an *ideal* of humanity. Originally, transcendentalism was focused on this ideal of humanity. But the Post-Hegelian man became enthralled to the *Zeitgeist* and unable to dominate over his/her sensuality (to “possess his soul in patience”⁶⁹).

What is apparently common to the objects of physics and mathematics is the continuum of the objects imagined. Either that of the experienced empirically, or that

⁶⁹ In patientia vestra possidebitis animas vestras (Luc 21. 19)
(ἐν τῇ ὑπομονῇ ὑμῶν κτήσασθε τὰς ψυχὰς ὑμῶν).

imagined in the absence of them. Generally however, the imaginations could be modeled in way of, say, a lump of clay could. Apparently, not all material objects can be so, e.g. a stone is not as yielding as clay is. Similarly, the imaginations happen to be more or less yielding, all depending on the intellectual maturity and the dominion of the intellect over them. Anyway, they can be modeled to some extent. On the other hand, a residuum completely unyielding might be supposed to exist. Kant called it *Ding an sich*: a margin of the human creativity. But in reality, a residuum of the formal abstraction is shown to exist in the Aristotelian paradigm, and cognoscible by means of another type of abstraction (nor “exact” one).

The matter of Marxists bears a certain resemblance to the *Ding an sich*. But, according to them, our being humans amounts to the ability to model material things. Following Hegel, they assumed that man was predestined to become eventually the absolute master of reality. Historically again, *some men* were so. Some pretending to having mastered nature felt free to subjugate those supposed to not having so, which was the case with totalitarianisms inspired by Marxism.

Nowadays, nature proved to be unyielding to the creativity of the imagination convincingly enough. Moreover, the destruction wreaked upon it can turn against man himself. The fact that nature is unyielding in the way Kant desired it to be, has been empirically proved. Nature does not brook being tyrannized; it vindicates its own “rights” (i.e. demonstrates that *laws* of nature exist just like natural objects do) despite all attempts to disregard them.

But the reaction to the Kantianism formalism has been excessive. Nature has been in fact absolutized (and deified), or, at least, unified. The admirable unity in diversity, Dionysius spoke of, has vanished. Not even has been the soul of the world defied as in Varro. It was Earth understood as the irrational governing everything including humans. Nietzsche appeals:

Remain faithful to the earth, my brothers, with the power of your virtue. Let your gift-giving love and your knowledge serve the meaning of the earth. Thus I beg and beseech you. Do not let them fly away from earthly things and beat with their wings against eternal walls. Alas, there has always been so much virtue that has flown away. Lead back to the earth the virtue that flew away, as I do—back to the body, back to life, that it may give the earth a meaning, a human meaning.⁷⁰

“Being faithful to earth” is, nowadays, understood as being enthralled to libido, envy, greed – evicting that can substantiate the mysterious Kantian *Ding an sich*. The Kantian forms appear but on the surface of the irrational; they are evanescent and weak. Relativism assumes a quaint guise: human destiny has been subjugated to the irrational; to the anti-, or pre-formal. Man became tethered to the “Earth”.

The applicability of mathematics to the cognizance of the material world is restricted to the extent mathematical analysis is applicable thereto. The problem is whether the experienced continuum might be divided *ad libitum*, i.e. terminable *a priori*. Eventually, some

⁷⁰ Thus Spoke Zarathustra, I. 3.

indivisible objects were discovered. Etymologically, in-divisible is the same as the Greek *atomos*. The nature of “atoms”, however, is the problem of its own. If they are indivisible indeed, they will be so not in the sense in which e.g. points are. They are endowed with their own integrity and specificity. The integrity is a property of the substance. Atoms, electrons and all elementary particles are substances in the Aristotelian sense, but not only they. All more complex objects are substances too.

The border of the applicability of the mathematical analysis was met when rescaling macroscopic magnitudes onto no matter how small particles proved impossible. The elementary particles proved to be dissimilar to macroscopic objects and to the infinitesimal parts of it too. To put it otherwise: the physical continuum is not identical with that idealized and fashioned after the paradigm of the mathematical one. The rescaling of magnitudes in the latter is workable without restrictions. It is not the case in the former. Physical objects are not terminable arbitrarily; they proved to be endowed their own substantiality or subsistence. All this adds up to that nature “rejected the dictates” Kant believed to be possibly forced upon it.

The statement that the human intellect faced the border of applicability of the paradigm that had been adopted is not tantamount to finding a basis firm and stable enough to support the edifice of science. A stone we stumble upon need not be a cornerstone. In fact, it might be the opposite. The conviction as to the absolute impossibility of the verification of scientific theories might lead to undermining the very perspectives of the intellectual development. If someone happens to be incapable of an action and the possibility of acting in another way is precluded, then, the impossibility of acting in general could issue. It was the case indeed. The very possibility of verifying hypotheses was rejected and replaced with the idea of their falsification (Popper). Still, the falsification is a privation, and Dionysius observed that privation as such is indefinable. No positive conclusion can be drawn from negative premises only. Consequently, it is impossible to ascertain as to the fact whether we advance in the right direction or advance at all instead of moving about. The regress is possible too, and the possibility both to be avoided and anticipated. The notion of progress (getting better) implies a point of reference, viz. what is good and stable as such. Without the point of reference, it is impossible to say anything about the direction of the motion and actions too.

The very notion of progress implies the notion of a continuum it takes place in. The medieval author of *Reportata Parisiensia* (the work traditionally attributed to Scotus) and Kant some time later on, claimed that, over centuries, constant accumulation of knowledge had been occurring. A *constant* was accepted after all (for constants in knowledge are unavoidable), but arbitrarily. For hypotheses at least are discontinuous of the material world, and make up, as it were, the world of their own. The idea of their being radically opposed to (severed from) the material world (in its crude state) underpins the notion of experimental method adopted in modernity. However, that constant and monotonic accumulation of knowledge has proved to be impossible. At least some “crude” facts are discontinued to each other and not cognoscible experimentally. The accumulation, if ever, must be gradual, and some stages of it (the species of objects known abstractedly and defined so) must be opposed, i.e. related to each other in non-quantitative terms.

The mathematical continuum proved to be opposed as such to the empirical one and the measure of them both not homogeneous, as Kant believed. Kant was trying to deprive

nature of its own entity. In fact, it appeared in the 20th century that the *natural* discontinuity of the experiencing and the experienced exists, whereas a continuity must be associated with (and related to) a given material thing and be proper to it. It must be a continuity and resulting from a thing's internal structure. Nature proved resilient and not tolerant of the attempts to subjugate it, i.e., deprive of its entity. Had the inner time of mind existed at all (as that in the Kantian mathematics), it must be conformable to the physical time and the assimilation both observable and checkable. Natural objects appear in time and in the background of the continuum of motion too. At the same time, however, the natural discontinuity of objects appears too if observed diligently enough. The unity of things is not dependent upon them being subsumed under categories accepted a priori; it is not *functional*; it is a derivative of their internal structure, which shows up when confronted with their natural environment.

The natural discontinuity of objects was discovered at the beginning of the 20th century. It was so when examining the wave properties of objects and those elementary in particular. The discontinuity is not at all similar to that of e.g. resulting from the lines intersecting at some point. Moreover, the natural objects (those naturally discontinuous) have no dimensions save the effective ones or resulting from their wave properties (natural bodies can be regarded as standing waves).

The notion of progress implies, normally, the notion of a magnitude about to be achieved. This magnitude might be called natural. Hegel's history of civilization is "naturalistic" in that sense, as the proper magnitude of the "Spirit" was allegedly achieved in the moment Hegel had written the last words of "Phenomenology of Spirit". However, neither nature nor history did feel obliged to comply, and history unfolded after all. In fact, a new direction was chosen only and totally unforeseen by Hegel. In that sense only, history had ended. Perhaps, all the prophets of its end are short-sighted in the similar way.

The history after Hegel proved to be unpredictable as no Hegelian could have predicted that relativism would issue from Hegel's "absolutism". The notion of growth was replaced by the notion of supply and the scientific progress fashioned after the model of the economic growth. Some ideas were supplied to the free market of thought and met with the demand for them, which could only "verify" their validity. It might be only hoped that ideas were assessed adequately and valued too according to their worth. However, nothing can guarantee *objectively* the hope. Consumers are laymen obviously enough. Everything seems to depend on the coincidence of events. The coincidence must be grasped stochastically, whereas the natural necessity (which can only guarantee the objective values) was rejected.

The problem of the necessity and possibility of being was addressed in the Third Way of Thomas. The two modalities of being make up the tissue of the universe, and rejecting either of them must lead to absurd consequences. A necessity of natural objects must exist and the necessity of their relations too. Aristotle calls it the conditional necessity i.e. that connected with the finality of nature. Had all things been possible only, the totality of them might, at some time, be not-existent too. Nature, figuratively speaking, would have blundered into a dead end path with no way out. The trap of non-existence will be unavoidable should things as such be possible only. Existence seized in statistical terms (as expressed in an existential quantifier: " $\exists x$ " or " $\exists(x)$ ") would have been but an accessory of the set of possibilities. The latter, after Scotus, were claimed to be knowable first and a priori, which naturally cannot be proved. On the other hand, for both Heidegger and Wittgenstein existence

was something of an enigma: not related to *what* exists, for the what-ness (quiddity) is a constant of nature.

Taking into consideration the actual state of matters (the history of Civilization), the validity of the statement uttered in Reportata Parisiensia (and by Kant) must be granted. Science was born in the ancient Greece and the factor effective for its development must have been present since the beginnings. But the reason of actual progress must be accounted for. Aristotle provides the reason; Kant postulates it only. The aforementioned conditional necessity of nature makes the end of the progress being real. The separate problem is how distinctly the factor, the principle enabling the development, is seen. According to Aristotle Metaph., I, c. 3, 984b 10-11; Protr., frg. 10, 16, 17) it was nature that guided the philosophers in the pursuit of truth. The ancient φύσις bears no resemblance to the Kantian Ding an sich nor the transcendental idea of totality. It was (in Aristotle) nature endowed with the subsistence of its own. The nature was re-discovered in the 20th century when non-phenomenological objects (as Wichmann puts it) were discovered after having been buried for some centuries under the ashes of phenomenalism. The way out of the blind alley was found. Nature itself was rediscovered and reevaluated.

Man is part of it and the human spirit is not that radically opposed to it as to make the opposition irreconcilable and the return unachievable. Perhaps, it must be only stated that the return should be aimed rather at the Principle of nature than nature itself. Man is a micro-cosmos and a special relation to the natural objects consists in being able to focus all concepts (“ideas”); all similitudes of things in the mind, i.e. to “possess” things in the way proper to the rational creature. Consequently, the factor mentioned above was a special and conscious attitude assumed towards the material world. The attitude was, in a sense, unique, as no philosophy, in the sense normally accepted, existed save in Greece or the places the Greek heritage got to. However, some three centuries after Aristotle’s death the factor (its efficacy) seemed to have debilitated after all. And the regeneration of the human rational nature that occurred just then constituted the second and the more important cornerstone of the Western Civilization.

Christianity was no theoria in the aforementioned sense. A theoretical insight into the revealed by it was attempted in the Middle Ages nonetheless. At the same time, since the insight was as general as no other before (facing being as such; facing the Principle of nature besides nature itself), all guises of theoretical thinking that had occurred before were in fact evaluated and reevaluated in its light. Not an interpretation is meant. Christian monks copied laboriously the works of pagans and did not reject them for being just pagan. The seeds of truth were diligently gathered. The effects were not going to come soon, but were bound to, nevertheless. Moreover, even if actually rejected for a considerable spell of time, they would crop up some centuries later. But on the other hand, the effectiveness of this factor would be impaired too. Scientism had impugned it successfully till the end of the 19th century.

But a “bottom” of the universe was (re-)discovered in the 20th century. The aforementioned Aristotelian notion of ὑποκείμενον – substratum might be called so. Moreover, the (the least indistinct) notion of ὑποκείμενον – substratum must have effectively sustained the development; although the fact need not be grasped thematically. The presence accounts for the fact that science did not advance into the uncertain but got a certain fulcrum

for the future development. The laws of nature had been effectively present in the minds of those who contributed to the progress of science.

Marxists believed in the possibility of “subjugating” of what they called material world, which smacks nowadays of both grotesque and macabre. Everyone who tried to domesticate an animal is aware that domestication is not similar to subjugation at all. The specific animal nature must needs be reckoned with, and an animal, if treated brutally or even without patience, is bound to react vehemently. Nowadays, the awareness of what is perhaps excessively called the rights of nature is growing and mirrored in the activities of the ecological movement. The conviction that animals have some *rights* might sound childish, but the notion that the *laws* of nature exist is sound enough. Man is no measure (as Nietzsche supposed) of the laws of nature. But on the other hand, he/she is not enthralled to nature. His/her nature is distinguished by its rationality.

The specificity of human nature is to be respected: its being a nature more perfect than other natures. Humans happen to be regarded in a reductionist manner out of ideological reasons and treated accordingly. E.g. human nature happened to be identified with sexuality (Freud) and this “science”, in fact, degraded to the status of ideology. There was no right to question the prophet’s words; psychoanalysts were deemed absolutely infallible (which no genuine scientist pretends to be). Human nature happens every now and then to be put on the Procrustean bed of an intuition supposedly basic for a “theory”. The integrity of any particular nature might be disrespected, but the integrity of human nature is usually attacked more vehemently, with the effect detrimental both to science and humans. The disciple of Freud, Karen Horney, pointed out to how arbitrary the Master’s assumptions were. Horney underscored the necessity of the integral development of patients, albeit the notion of psychological integration might be controversial after all.

3.3. Homo mensura

The epoch of the renaissance, in which the foundations of modern empirical science are believed to have been laid, was a period of an affirmation of humanity too. The notion of humanism was associated with it, albeit it differed considerably from the Ciceronian one. Human nature had begun to be treated as a gauge; the gauge of beauty first of all. Especially, the harmony of human body was appreciated. In fact, a certain guise of the human εἶδος - μορφή was accepted; far from being as precise as the philosophic definition of man proposed by Aristotle, but suggestive enough. Characteristically, the artistic depiction of human εἶδος - μορφή was not matched with a theoretical one. The lack was about to be more and more neatly perceptible in the years to come.

The word θεοπεῖν stems first of all from θεάομαι; a special kind of intuition. Human body too, can be looked upon from different aspects. The ancient sculptures approached the mathematical (and thus theoretical too) model of harmony much more than those of the renaissance. A special kind of intuition is visible in the latter, and connected rather with a qualitative approach to beauty. Although the notion of beauty cannot be reduced to the harmony of proportions and expressed in numbers solely, the quantitative proportion of

sculptures was, in the ancient Greece, a prerequisite of beauty, no matter how ingenuously expressed subsequently. Most probably, the ancient philosophers discussed in the shadows of ancient sculptures and the beauty of nature (and that of the human nature in particular) depicted in them was a fulcrum for their thought. An equilibrium between science and art existed. It existed in the renaissance to some extent too, but in times about to come was going to be disturbed. It occurred in, to be sure, in Bach's works, deemed by many "mathematical", but Bach's music was, for many decades after his death, regarded as "too difficult". But it is not about mathematical theory as such: science in general should harmonize with what we know about human nature and claim to be human.

The humanity in the renaissance was appreciated indeed. Albeit seized unilaterally, it proved to be effective in triggering multiform human activity, that scientific included. But the problem remained open of defining the humanity in objective terms.

Edmund Husserl tried to define humanity availing himself of the concept of subjectivity. The "Crisis of Humanity" and, consequently, the crisis of science too, resulted allegedly from an essential truth being, allegedly, lost sight of. The truth essential for humanity. The lack of equilibrium was spotted distinctly enough, but defining man in the terms of subjectivity was far from being as stringent (the term "strenge" was used by Husserl) as it might have been expected. Husserl claimed that Galileo intuitively saw the connection between concepts pivotal for modern science. The "intuition" was "modern" indeed, for the *ancient* theoria was far from being an intuitionism. The ancient Greeks were neither intuitionists nor subjectivists. The Greek philosophy of nature had the human εἶδος - μορφή before eyes, but the nature was not known intuitively by the same token. It was depicted in fine arts and some of them exist *materially* till now. It is the case with the renaissance so too, although the theoretical considerations on human nature did not live up to the mastery of the fine arts. There was a room left open for vague ideas that followed. Consequently, there was both a germ of growth and disease in it and the period was critical indeed.

The crisis consisted in the lack of equilibrium between the theoretical (and scientific) engagement and humanities. Humanities were in fact affected by the lack of stringency proper to science. The so-called Geisteswissenschaften discovered by Neo-Kantians were devised to fill the gap. The progress of the Civilization would be possible if the integral vision of humanity was adopted. The idea is mirrored in the fact that Nobel Prizes are awarded both in science and literature (humanities). The fact might jar upon those who regard the disproportion between the discipline and stringent intellectual work done by a scientist and a free activity of a writer. Still, the idea as such is sound. Humanities need not be a cry of despair, and all the less philosophy so, as in Sartre, deemed both a philosopher and a writer. It might be (and should be) a factor effective in triggering the unhampered human development in all fields of human activity. In this case, however, the adequate definition of human nature is at least implied.

When considering the lack of equilibrium between the two sides of human activity, the very idea of humanity as presented by modern humanities might be assessed as responsible. In fact, humanities happen to beguile humans with a murky phantom of the human calling and destiny, condemning, at the same time as philistine, all attempts to propose a positive image of the end of human life. The depth of the ideal presented e.g. in literature would be measured by the depth of despair and horror. A book might seem as profound as gloomy and demonical

the image of human nature in it. And that would have been the only alternative for the idiotic optimism of Socialist Realism or the “art” of e.g. Nazi Germany. Modern art deterred the very possibility of being labeled as philistine. The anticipated accusations are a scarecrow for every attempt to contribute to the integral development of humanity. Nay, the very disintegration seemed to be more “profound” than fostering hopes as to the future.

If speaking about the crisis of humanity, the fact is to be pointed out that subjectivity itself, because of replacing the definite notion of humanity, might be culpable of the crisis. For neither Geisteswissenschaften nor modern fine art is able to sustain the integral human development. They do not serve as a firm basis for human existence. Neither, besides, do they pretend to do. In fact, they boast the opposite. Human nature is, in fact, tacitly supposed to be sustainable enough all by itself. The role of “culture”, on the other hand, consisted in humanizing the natural in man (as the culture had emerged from the depths of bestial existence some thousands years ago). The natural and animal in man was contrasted to the culture assessed, in fact, as “supernatural” by a sheer postulate of being super-individual.

The shift from the stance of the renaissance is visible. The beauty of the works by e.g. Michelangelo, or Rafael was visible and appreciated by ordinary individual consumers of the art of the period. Similarly, Mozart’s operas were a “pop culture” of their times. People were, at the same time, judges and demanding ones. The judgement was not reserved for “specialists” only or a narrow elite capable of it (and representative of the common psyche). A “consumer” was a judge by the very fact of the art being addressed to him/her. The value of art was gauged and the gauge supposed to exist in humans. The fact was yet visible at the beginning of the 20th century. “The Rite of Spring” by Strawinski or the “The Wonderful Mandarin” by Bartok was pooh-poohed by the audience – something unthinkable nowadays. It is not the problem of the worth of these two works. It is the problem of them being possibly assessed as such. Indirectly, the existence of the objective gauge was assumed and the “consumers” of art were supposed to be in a position to use it. Not the demand for the art works is meant, nonetheless. Mozart’s works are totally incomparable to other goods, and no demand for them ever existed or will ever exist too. They were *too much* for being demanded. They are gifts rather and the situation seems to be paradigmatic for every artifact whatsoever. They are offered first of all, instead of being “supplied”.

Over centuries, the human existence had been in fact harbored and sheltered by the objects that constituted the human environment (broader than that purely natural one). The objects of art were meant to respond to the desire for beauty. The art (and possibly all artifacts as such) are gifts first of all, possibly even disinterested. Children are judges in this sense. They differentiate unerringly (as Karen Horney observed) between genuine love (and a disinterested gift) and every appearance of it. They are not, to be sure, in a position to “punish” their parents in the normal sense of the word. Moreover, they are not about to be so in the future too, as the social care tries to shift the responsibility for the errors from parents and liberate the elderly from the traditionally existing dependence on their children. However, the responsibility cannot be avoided after all. The fact that an Ersatz instead of a true love was given is bound to dawn upon the culprits sooner or later. The objective measure exists indeed, because real life and real existence is such a measure. For the existence unfolds freely in the human environment only (and integral one), and is crippled in the circumstances unfit for its thriving. The fact cannot be denied, as the existence of life is a fact. The harmony of the

objects that make up the environment is responsible for the human activity possibly to unfold. In turn, chaos, noise and disorder are bound to spawn but horror and despair and cripple human activity. The life can only thrive in the world in whom the natural outlines of the objects are visible and the relations amongst them too. Human existence is a judge indeed, and human subjects (persons) too. But subjectivism is not. For the notion (the vague notion of subjectivity) cannot guarantee the possibly of the real subjects (ὑποκείμενα) to exist.

Should the gauge of humanity be the Protagorean *homo mensura*, then a distinction must be made. Man is a measure in the sense of his/her activity being spawn by the reception of e.g. works of art, and all artifacts perhaps too. He/she is a gauge when consuming the energy provided to the system of their lives from without (the environment). Life dynamism and liberty should issue and the integral development ought to take place. The real life is a judge; for the decrepit condemn the art and artifacts as justly as senility does condemn the squandered stamina of life. They are justified in doing so. The facts cannot be denied. A testimony is borne to the fact every time some opportunities are shown to have been lost.

Still, sometimes not a handicapped individual is a witness, because he/she might be unconscious of the fact. A situation might be assessed not adequately for the simple reason of the assessment being restricted to some narrow spell of time and those assessing *personally engaged* (or materially *interested*). The opposite (of the fact) might be witnessed, i.e. be “advertised”, which is to say: the existence of the opportunities denied. Now *the fact* of privation is independent of how it is assessed. The very life (or the fact of its demise) is a judge indeed. The *subjective assessment* is fallible. The existence of *a subject* is infallible. One’s existence in the future is, obviously, incidental. But his/her existence having taken place in the past is necessary, similarly as the fact that some opportunities have been squandered.

“More” and “less” if applied to the intensity of human existence is such a measure in an analogical sense only. For life cannot be measured in inches or grades. Perhaps it can be so in years to some extent. However, the life happens to be lived through more or less intensely too. Human understanding is measuring in a special sense and the intensity of life is to be gauged by it. Relations to the outer world are measured and not only those quantitative ones. The environment can boost or paralyze human existence. Again: the intensity cannot be measured by e.g. how many people are known or how many countries visited. There is something *within* a man and not possibly to be extended in the normal sense of the word. Emotions are believed to be so. However, the *satisfaction* of a consumer is measured in numbers too, for the material profit is such a measure. Should people be measured as more or less emotional, the authenticity of their existence becomes problematic, for consumers happen to be manipulated obviously enough. The authentic in humans must be independent of the emotional. It is the spiritual, i.e. volitional and intellectual that matters.

The very term of experience is affected by an equivocation. Sheer introspection testifies to that esthetic experience is different to measuring objects in an experiment. Accordingly, a man is a measure if experiencing things in any manner, not in an experiment only. The latter is believed to be carried out after defining things but operationally, whereas the esthetic experience, to the contrary, consists in regarding them as unique and unrelated practically to the others. The uniqueness constitutes the very essence of esthetic objects, and the practical aspects of them must be dropped. An artist is, by definition, someone who sees

things in an unpractical manner. The everyday objects are always practically connected with each other whereas those of art are not so. If Duchamp's urinal pretended to be a work of art, it was just because it was believed to be isolated from its ordinary context of use; the author apparently challenged the ordinary definition of the urinal and regarded it as an object that did not need be used, but simply existed – nothing else.

The renaissance put up with a depiction of human nature. The existence was immersed in the constant flux of events, but a repose was to be found in art. But the current of events was becoming, over the centuries, more and more rapid, whereas the basis and fulcrum of human existence less and less stable. To the contrary, the Greek idea of humanity was the theoretical one first of all, and consequently firmer and more stable than the imaginable. The humanity in it was not only displayed or looked upon literally; it was regarded intellectually, albeit it was not that much an “intellectual intuition”, but rather contemplation replacing every intuition properly so called. The theory was rather intellectual and more than sheer looking (Aristoteles, Protr., frg. 20). That is why equilibrium between the two sides of human activity existed then.

Aristotle divides the genus of *theoria* into three species (Metaph., VI, c. 1, 1026a 18 ss.). There were three kinds of *theoria*. Besides mathematics, Physics and metaphysics are such “theories” too. Thus, a solution of the problem posed above (of the relation of mathematical objects to the physical ones) looms. Science, according to Thomas, consists in dematerializing the sensual data; in other words: in dropping the material in them. So, the science deemed formal par excellence, mathematics, would have been paradigmatic if the formal were to be found in it only. Everything depends in this case on the meaning attached to the formal. Is it the mathematical ideatum and isolated from nature? Is it autonomous? In what sense? Now, definitions correspond to the classes of things indeed. There are no ideal objects in nature, but nature has the entity of its own and this is regarded in Physics; the grade of *entity* is mirrored in definitions, whereas sheer gradation of *magnitudes* disposes of what normally sustains them (a natural subject).

The lack of the counterpart of that mathematical ideatum is visible. Something must counterbalance the weight of mathematical concepts and proportionally to the degree of their importance. If mathematics is about numbers in general, then, perhaps *another* number exists in nature and different to that which can be added and subtracted. For normally, two substances cannot be so. Two objects do not make up a totality and no matter how numerous a set, it does not so either.

Comte's subjective synthesis was devised to bridge the gap. Human subjectivity was a point of reference. But, at the same time, it had to be deprived of what subjectivity normally is associated with: contingency. In fact, it was not that much deprived rather deified as Le Grand Être. The idea was flawed just for the reason that mathematics was supposed to be most general. If it happens to *be used* thus, it is only because of its applicability. But, if applicable and applied, it must so to *a thing*, and the things as such (categories of being) will be universal instead. A blank spot left by modern reductionism appeared, and a “modern” idea of utility has occupied it. Indeed, the Protagorean *homo mensura* had made such an event possible.

The ontological status of mathematical objects was analyzed by Aristotle. In other words: Aristotle accounted for the fact of applicability of mathematical objects; i.e. their

universal use. Universal, properly speaking, can be but definitions and classes of things described by them. The definitions, in turn, are provided by *scientia naturalis* – Physics. The method adopted is different from the mathematical one, which accounts for the specificness of the experimental algorithm used in modernity. There is a certain rhythm of scientific (intellectual) work, similar to the natural rhythm of nature. A rest interrupts an activity, but does not hamper it provided it is a *natural one*. The variety of activities accounts for human freedom. Should one possibility of acting be precluded (thwarted and brought to a halt), another one (after some reflection) must remain open. That an activity might be dynamic, a natural rest (contemplation of ideas) must boost it. So, definitions must be accepted, but the real ones (not operational only), the – so to say – pre-operational. A totality (a species) is defined. An εἶδος - μορφή is grasped. Mathematics must apply to the classes of things. The totality is grasped either thematically or, at least, indirectly (as was the case with human nature). Otherwise, no equilibrium between nature and science would exist. Theory provides such an equilibrium.

Contrary to what has been commonly assumed, Aristotle knew the place proper to physics in the modern sense of the word. It is, to use the term of Thomas' Commentary to Physics, *scientia media* – a science that unfolds between the theoretical analysis of nature (in *scientia naturalis* – Physics) and the mathematical ideatum. Now, being situated between two extremes is apparently being kept in balance. Utilitarianism cannot appear in the Aristotelian paradigm of science, but an equilibrium must so.

Moreover, there are several “middle sciences” and as many as the disciplines of chemistry, biology and the like are manifold and severed from the most general research on nature accomplished by physics. The multitude of them corresponds to discrete levels of formality adopted in researching the physical world, which is the guiding methodological principle mentioned above. The condition of the applicability of mathematical objects to nature is that the objects should be applicable to the *classes* of natural objects, i.e. their immutable species. Unless both the cognoscibility and firmness of them be granted and the notions abstracted from the physical data obtained, the whole applicability will be in fact questionable.

The type of abstraction involved in defining is proper to Physics in the Aristotelian sense. Still, according to Thomas, it is, at the same time, a type of cognizance almost natural to man; not exclusively to specialists, but to laymen too. The conclusions of *scientia naturalis*, mentioned above, are, consequently, founded on the everyday cognition, and the cognizance of God: natural and common, as the intellect is a faculty common to all man. But first of all, there is the adaptation to changing conditions and circumstances of material objects needed and the notion of application and adaptation can be juxtaposed. If the classes of material objects are not grasped in general terms and transcending the particularity and variability of material objects, projecting human existence into the future will be impossible. Naturally, the survival and adaptation is only possible if an individual makes his/her existence possible in all circumstances, no matter how variable variegated and manifold. An individual's nature must be unchangeable (and grasped so), and the nature of the objects that make up its environment too. There is an equilibrium between the energy the flows from, and is pumped into, the system. Now, the equality would not exist if the extremes had not been definite. True, individuals are not definable and not cognoscible save indirectly and for practical (moral)

ends only. But, the theory that deals with universals must come first nonetheless, because the starting point of the reflection is indispensable. The abstract notion of human nature is applicable to individuals too. Obviously, mathematical objects are firm enough and immaterial too. But the abstract notions of natures must be all the more so. No quantity can exist on its own; the quantity is just that of a substratum, and substrata are to be known first. To-be-more, i.e. to live authentically, is to master what otherwise might have appeared but incidental in one's life.

The abstract notion of nature (and the human nature first of all) might be clad with the sensible, and signs (a language) might originate. A language is a natural means to express the abstract notions. But generally, means are as manifold as manifold are the circumstances that constitute the human environment. The *artificial* objects thereof are of secondary importance; they *are used* only. They are so more or less effectively, and the efficacy *evolves* indeed. Humans happen to be more or less apt to transcend the spatial temporal and e.g. huge cities sprawl and evolve indeed. Humans annex the places yet unexplored. It is proper to humans only to transcend the nature in such a way and to use nature to the *degree* it serves them.

However, if something is done for the sake of somebody, the "somebody" must exist before, so that the action might be addressed properly. The notion of human nature, present at least effectively in science proved to be indispensable. It is intrinsically connected with the Greek mode of thinking. The modern idea of "human subjectivity" is not likely to replace it effectively enough. In fact, the human subjectivity evolved along with the modern use of science. Traditionally, in the ancient Greece, man was called micro-cosmos – the minor mundus,⁷¹ and a relation between the system (man) and the environment (the world) was made out. The relation consists, first of all, in the ability to interiorize intellectually the species that make up the world and interiorize bodily the energy associated with them; and, consequently, to imprint the mark of humanity on the world when producing artifacts.

The progress of science was triumphantly heralded by the advocates of the Post-Enlightenment epoch. The explanation how it had occurred in the history of the West was tried to be undertaken by Hegel. Hegel endeavored to elucidate the phenomenon in scientific terms. The notions of return and exit were used, which seems to be reasonable. For a pint of water spills over a surface, whereas a drop of water if hung to a leaf oscillates; it both expands and pulls together. Most obviously, vivid organisms are rather similar to drops than to a glass of water for the measure of pint is not as natural as the "measure" of a drop is. Consequently, the rhythm of exit and entrance, if applicable to the whole nature, would be most clearly visible in the most perfect organisms (or at least in those tiny enough not to be assembled at

⁷¹ Sancti Thomae de Aquino, De motu cordis

Item animal perfectum, quod est movens seipsum, maxime accedit ad similitudinem totius universi: unde et homo qui est perfectissimum animalium, dicitur a quibusdam minor mundus. In universo autem primus motus est motus localis, qui est causa alterationis et aliorum motuum. Unde et in animali magis videtur motus localis esse alterationis principium, quam e converso. Unde et Aristoteles in octavo Physic., hanc similitudinem sequens, dicit quod motus est ut vita quaedam natura existentibus omnibus.

whim). Especially, human activity implies a bodily expansion; but an action is human as such only if the vital energy is not dissipated (not squandered). Thomas distinguishes between the actions of a man (*actiones hominis*) and human actions (*actiones humani*). Actions are human to the extent the vital energy is preserved and accumulated. Similarly, as it seems, humans must recollect both their energy and the images needed to preserve it. Hegel coined a special term of *Erinnerung* for interiorizing both concepts and energy. Man is what he/she is just because of memory – broadly speaking.

The idea of *reditio* was not new. It stems from the medieval *Liber de causis*. Thomas accepts the idea *mutatis mutandis*. It is about explaining of what man is indeed; of what is human properly speaking, which adds up to defining his/her position in the changing world. The relations to objects are meant.

According to Thomas, man is a distinguished part of the universe and this just because of his/her unchanging nature (due to the intellect his/her nature is more stable than any other one). If taking into consideration two principles that, according to Aristotle, constitute all physical objects (no matter how complex), viz. matter and form, the degree of perfection of a given species will be proportionate to how a form dominates over its matter. In those material and unanimated, the form is, as it were, immersed in the matter. For this reason, these bodies are called elementary. Plants, in turn, are more perfect as organizing the matter in the way proper to them and according to their proper formal principle. Animals, in turn, can grasp the formal cognitively in addition, which enables them (which is the case at least in those more perfect ones) to transcend the material circumstances (to move themselves). However, the very transcending is relative only, for it is *related* to a specific form. Now, in humans, the specific forms are focused in all their variety and without restrictions; they are grasped intellectually and immaterially. The forms are focused in the human mind and the order of the whole universe (the totality of the relations constituting it) might be present in it immaterially.

If the rhythm was *imagined* only (as in Hegel), it would so to the detriment of *understanding* it adequately. Going and coming, moving to and fro, leaving and returning are all but *signs* of the properly human activity, which is what it is just because of the human form not being “dissipated” but “focused” on the human body, just as the human creative activities are. Had the human form been equal to material forms (those less perfect ones), the human activity would have consisted in, literally, expanding and pulling up after being abandoned in the material world. The problem of alienation was connected with the image. The Heideggerian idea of being-in-the-world is just that of human existence being *given* in pretty the same way the phenomena were traditionally believed by phenomenologists to be given to the consciousness. Phenomenologists are predominantly idealists. Heidegger is not. Still, the price for that “realism” was considerably high. Granted the very possibility of being given in such a way, the possibility must prove to be a *real* threat (we *realize* better what affects our senses so). Human existence (and deign of the name of being human as such) must consist in the opposite of being given, viz. in being focused on itself. The theme of the focusing was extensively explored in Plato’s *Phaedo*; “thought is best when the mind is gathered into herself” (αὐτὴ καθ’ αὐτὴν γίγνεται) (65 C; transl. B. Jowett). Gathering seem to be an adequate notion, as human existence both unfolds in the material world and is focused and formalized in a specific manner. In fact, abstract notions are focused in the human mind and unshakably so. If what accrues is such, the substratum it accrues to must be

all the more so. If the “ideas” are unperishable in *a* human mind, the man must be unperishable too, and might be, if it pleased (after Aristotle), called after what is most noble in him/her – the intellect. Humans are “given” to the material world only in the sense of our cognizance originating in the material organs of senses. The contact with the material world is not possible without being in such a way. Still, the very sensual data are elaborated upon so that the outcome proves to be absolutely stable and not possibly “given” again. Human ideas might be so only in the sense of the artifacts (fashioned after the model of abstract concepts) being given to the others. In fact, they are gifts rather than given tout court. For the very idea of gift implies the firmness of the principle it originates from.

This firmness is another name of the aforementioned scientific certitude. If some are blamed for being dry theorists, it is because the name “theory” has lost its original meaning. Traditionally, the theoretical was identified with the certain. Nowadays, theorists happen to shun any firm principles. Overflown by the torrent of information, people do not attach importance to things words should correspond to. That is why – because of the lack of firmness and definite meaning – thinking (sheer multiplying of words) can paralyze the will to act. Indeed, dynamical acting can only be triggered by a firm and unshakable principle of what we expect to realize in the natural world we live in.

The opposite of this theoriticism (the inclusive thinking) is fundamentalism. But opposites attract each other. *Some* people for *some* time can afford to live in the virtual world of ideas. But a society requires a balance. A theorist is not likely to become *a* fundamentalist. But that theorists might exist in *a real* society, fundamentalists must exist therein too.

Both stances share in common the same miscarried principle: a deep distrust for the natural faculty of *intellect*. A theorist does not believe in that reasoning can lead to definite conclusions (to intellection); a fundamentalist does not believe in that reasoning is of any use at all, because his/her personal stance is *definite* before questioning anything at all (without reasoning). That is why they coexist in societies; they are the children of the same mother.

The coexistence is, however, rather a truce than and a peace. There is no dialogue possible between the one who cherishes an “idea” of God, but the idea too flimsy for directing his/her life according to it, and the one who is “absolutely certain” of what he/she believes in, regarding, at the same time, the others as “class enemies”, “unfaithful” etc., etc. ... without entering into a dialogue with them in the climate of the aforementioned parrhesia. The “faithful” might well believe in a tribal (or private) god, in the deified humanity, or any other simulacrum. No possibility of communication with others looms. To the contrary, parrhesia creates a realm for the most important conclusion science can gather at all: the existence of the real God.

There are almost innumerable cultures existing now on the Earth, but there is *one* rational (and intellectual) *nature all people share*. A natural desire for good and truth is definitive of this nature. The proof of the existence of God is based on this universal desire.

There is, according to Aristotle, a science opposed to mathematics in a sense. The science in which various guises of natural forms are considered, the human one included. Aristotle was a founder of psychology too; albeit it differs considerably from what is commonly associated with the name nowadays. For both sociology and psychology emancipated from philosophy in the second part of the 19th century testifying probably to the

lack of the empirical foundations of the then existing philosophy. Aristotle's psychology, to the contrary, is a purely philosophical one. The science on nature deals with all kinds of life, and consequently, cannot omit the most perfect one – the intellectual life. As suggested in the first words of "On the Soul", the science is most precious amongst those physical ones, but it is physical nonetheless; its excellence does not consist in its being separated from nature altogether as was the case with the vague notion of human subjectivity accepted in modernity.

The very human nature can be idealized, which is to say "depicted" in such a way so as to satisfy the desire for the intuitive cognition (whatever the sense of the word). In fact, it was *imagined* rather in the renaissance than understood. However, it can be idealized in the way not so innocuous; it can become an idol, a "deity", which was the case in Hegel and Comte. The cause of the deification is to be searched for. The Father Founder was straightforward about it. Kant tried to explain the relation of human mind to the world in the most general terms. Normally, one assumes notions to be as general as the experience involved entitles them to be. Not Kant so. The generality was subjectively founded. There was something that determined the human attitude to the world a priori. The so-called transcendental ideas supposedly regulated human understanding and metaphysics was but an ideal in that scheme. Consequently, the existence of God was postulated instead of being proved, and the idea of God replaced the real God in many human minds. Kant, similarly as Descartes before him, *used* God for – so to say – "human" objectives, i.e. those connected with the projected domination over nature. So, it cannot come as a surprise that metaphysics appeared to Kant as a domain of "practical reason". Thus, the problem of the practical reason arises.

It goes without saying that, in the practical reason, a judgement over what must be done is passed. The judgment is that of *what should be* and contrasted with *what is actually*. The judgment, in Kant, was allotted to the formal in man, responsible allegedly for regulating all human activities a priori. The Kantian notorious formalism is blamed for failing to determine *the nature* of the formal regulating principle. In fact, it is as formal as barren and vague. The categorical imperative is unable to regulate human activities in the real world. Perchance, there was some reason for it to show up impracticable. Humans, contrary to what Kant assumed, are organically unable to set down the ultimate principle in themselves only (in their reason separated from nature). If they try to, nonetheless, the principle must appear hazy. People are able to define principles, which is the opposite of postulating them only. The principles and the unshakable ones are to be accepted. But all attempts to associate them with the so-called intentional being (the pure possibility of being) proved to be a failure. It is impossible to describe a system without a reference frame (a principle is this). It is indispensable to contrast the system with the environment, and both must be (deemed) natures anyhow. Now, depending on how vast the environment and the experience involved too, the description is objectively valid too. Ultimately, the radically transcendent principle appears to condition of the existence of the whole system of the universe. Human existence is part of it although a privileged one. Its form can only depend on the Transcendent Principle.

The objective justification of human existence and activity was provided by Aristotle. The justification is accomplished by metaphysics, albeit its "regulative" character is far from being similar to the Kantian one. Metaphysics was juxtaposed beside Physics and mathematics. There is, to be sure, something special in it, and resembling remotely the

regulative function as devised by Kant. For it is proper to metaphysics to judge instead of putting up with the mere abstraction. For various forms and degrees of being are abstracted when various species are known. Now, it is proper to metaphysics to consider not that much this or that being as rather being itself and commonly participated of by whatever exists at all. Due to this attitude to abstraction, metaphysics would have been (similar to) the general methodology of science, and its practical character visible at least in this aspect. However, even in that case it would be more than just regulative of other acts of reason, because it accounts for the very applicability of mathematical objects to the cognizance of the material world, which is not apparently the case with the Kantian transcendental “ideal”. Moreover, the judgment involved is far from being pragmatic only. The judgment is theoretical to the effect of determining the real position of man in the material world, amongst no matter how many and variable material objects. Thus, the position of man in the world is peremptorily determined, and, as the relation of the universe to its transcendent principle is determined too, so the relation of man to God is determined also.

The problem of the practical reason might be tackled from the (forbidden by Kant) coign of vantage of the desired human beatitude. The latter, sadly, happens to be regarded in purely subjective terms. The fact is mirrored in the oxymoronic “feeling happy”, widely accepted. Children believe that animals could “feel happy” in pretty the same way. Now, if humans had been animals and the authenticity of their existence gauged by the intensity of their emotions, they would be, nonetheless, quaint animals indeed, because they can anticipate the loss of this “beatitude”. Humans, if uncertain of the durability of what was deemed most precious, cannot be (or “feel”) happy, unless perchance the very ability of anticipating the loss be (previously) crushed in them. Many try to do professionally the job. Thus, not that much children are expected to grow up as rather adults to become as naive as thoughtless. Although *some* humans might be decoyed into that state of mind for *some* time; nature as such can be neither deceived nor enchanted. The problem is bound to crop up anyhow. It is better to put the question pointblank instead of infantilizing the problem. It is the problem of the real cause of human happiness. Metaphysics discovers the absolute dependence of the whole world upon its Transcendent Principle. People are no exception, albeit their nature is exceptional (i.e. rational), and exceptional is the way *they depend on it*, for they can adhere to the Transcendent Principle voluntarily and consciously. No matter whither turned to, man is bound to face the Ultimate. Everything depends on whether the fact is willed or shunned; whether the way to the Ultimate is straight or winding; whether the others are trampled or helped in the pilgrimage. In this sense man is a metaphysical animal as Gilson puts it, for it are only humans that can be both perspicuous and willing enough to see the Ultimate. And the principle is always present in no matter how perplexed existence. The principle is the only way out of no matter how intricate circumstances (“ways”) of life. The ways of life of those who preceded us (e.g. in the Middle Ages) prove to be worth being tried out.

Metaphysic is most general (Aristoteles, *Metaph.*, I, c 2, 982a 21 ss.), in the sense of regarding the most formal in things – their existence (Thomas). Ultimately, it regards the Pure Being, the common cause of whatever exists in whatever way.

Summa Theologiae I, q. 7 a. 1 co. Forma autem non perficitur per materiam, sed magis per eam eius amplitudo contrahitur, unde infinitum secundum quod se tenet ex parte formae non

determinatae per materiam, habet rationem perfecti. Illud autem quod est maxime formale omnium, est ipsum esse, ut ex superioribus patet. Cum igitur esse divinum non sit esse receptum in aliquo, sed ipse sit suum esse subsistens, ut supra ostensum est; manifestum est quod ipse Deus sit infinitus et perfectus.

... form is not made perfect by matter, but rather is contracted by matter; and hence the infinite, regarded on the part of the form not determined by matter, has the nature of something perfect. Now being is the most formal of all things, as appears from what is shown above (I:4:1 Objection 3). Since therefore the divine being is not a being received in anything, but He is His own subsistent being as was shown above (I:3:4), it is clear that God Himself is infinite and perfect.⁷²

Theoria understood in such a way was called by Aristotle theologies (θεολογική). The root of the word is clear (θεός – God) and the science is divine in two senses. Its objective is to know God, and on the other hand, God is the only adequate subject of the absolute knowledge. (Aristoteles, Metaph., I, c 2, 983a 4 ss.). Only God can know Himself fully, albeit He can share His knowledge gratuitously with humans also.

Etymology of the word theoria is connected (as mentioned above) with the verb of θεάομαι – to regard intuitively. Karl Albert, however, points out to an equally justifiable etymology. There was the word GOD (theos) included in it and the human existence compared to a pilgrimage; a pathway leading to God. The ancient Greeks were, as Karl Albert puts it, wayfarers. The main hero of the Homeric Odyssey was an icon of the return to the home country. The odyssey was perplexed, winding and painful. Still, any abode save that of homeland was rejected. Odysseus (the cleverest and most unfortunate Greek ever) tempted by the enchanting Calypso yearned after his rocky home-island and for his ageing wife, the espoused of his youth.

The pilgrimage; the way home is an icon of human existence; it is directed to what is known as “intuitively” as forebodings are. The objective is known partially only, but the very presentiment of the most precious is – as Aristotle puts it – more valuable than the otherwise distinctly known and the joy that issues is vehement.

Contra Gentiles, lib. 1 cap. 5 n. 5. Cum enim Simonides quidam homini praetermittendam divinam cognitionem persuaderet et humanis rebus ingenium applicandum, oportere inquires humana sapere hominem et mortalia mortalem; contra eum philosophus dicit quod homo debet se ad immortalia et divina trahere quantum potest. Unde in XI de Animal. dicit, quod, quamvis parum sit quod de substantiis superioribus percipimus, tamen illud modicum est magis amatum et desideratum omni cognitione quam de substantiis inferioribus habemus. Dicit etiam in II Cael. et Mund. quod cum de corporibus caelestibus quaestiones possint solvi parva et topica solutione, contingit auditori ut vehemens sit gaudium eius. Ex quibus omnibus apparet

⁷² *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920; Literally translated by Fathers of the English Dominican Province

quod de rebus nobilissimis quantumcumque imperfecta cognitio maximam perfectionem animae confert.

[5] There was a certain Simonides who exhorted people to put aside the knowledge of divine things and to apply their talents to human occupations. He said that “he who is a man should know human things, and he who is mortal, things that are mortal.” Against Simonides Aristotle says that “man should draw himself towards what is immortal and divine as much as he can.” And so he says in the *De animalibus* [I, 5] that, although what we know of the higher substances is very little, yet that little is loved and desired more than all the knowledge that we have about less noble substances. He also says in the *De caelo et mundo* [II, 12] that when questions about the heavenly bodies can be given even a modest and merely plausible solution, he who hears this experiences intense joy. From all these considerations it is clear that even the most imperfect knowledge about the most noble realities brings the greatest perfection to the soul.

Therefore, although the human reason cannot grasp fully the truths that are above it, yet, if it somehow holds these truths at least by faith, it acquires great perfection for itself. (translated by Anton C. Pegis).⁷³

Albeit feared for being possibly lost, the Ultimate is – paradoxically – more stable a basis for human existence than anything else. Humans proceed toward God in such a way. However, the pilgrimage and the progress as well as its objective might be despaired to be achieved. The fear had been justified for some time. According to Thomas, in the works of the heathen authors, an anxiety is visible. Their existence was torn apart between the fear and hope. And, as Thomas observes, the cause of anxiety has been removed. For not only humans can proceed towards the Ultimate. The Ultimate might proceeded towards them also.

Contra Gentiles, lib. 3 cap. 48 n. 16. In quo satis apparet quantam angustiam patiebantur hinc inde eorum praeclara ingenia. A quibus angustiis liberabimur si ponamus, secundum probationes praemissas, hominem ad veram felicitatem post hanc vitam pervenire posse, anima hominis immortalis existente in quo statu anima intelliget per modum quo intelligunt substantiae separate [...]

[15] On this point there is abundant evidence of how even the brilliant minds of these men suffered from the narrowness of their viewpoint. From which narrow attitudes we shall be freed if we grant in accord with the foregoing proofs that man can reach true felicity after this life, when man’s soul is existing immortally; in which state the soul will understand in the way that separate substances understand ... (translated by Vernon J. Bourke).⁷⁴

The end might be intended and the intention fulfilled. But – paradoxically – the End itself might intend to meet the human desire for beatitude at some point of the time and history. The position (where the two lives meet) might be determined from the other side too, and perhaps more thoroughly so.

⁷³ <https://dhspriority.org/thomas/ContraGentiles.htm>

⁷⁴ Ibid.

There was, in Aristotle, no other *theoria* that would describe how the Transcendent Principle might proceed towards man. Aristotle was, most probably, so disenchanted by the vulgar anthropomorphism of the Greek deities that such a possibility was discarded. Still, Paul the Apostle found amongst the simulacra of those deities an altar devoted to “the unknown God”. On the Athenian Agora, he spoke of the hidden God; of God who proceeded towards man and said of Himself: *Ego ex Deo processi et veni* (*Summa Theologiae* I, q. 27 a. 1 s.c.; *Ioan. cap. VIII, 42*). The science that described this procession is not just theologiké; it is rather *theologia*.

The both most striking and thought-provoking fact in the history of the Western Civilization is that the scientific and technological progress occurred in no other countries than in those that remained under the immediate influence of Christianity. Progress, in general, can be both subjectively and objectively fostered, and beatitude has these two sides also. It is, apparently, a state of mind (a subject), but the object of beatitude can be called beatitude also. Over centuries, since the words quoted above were spoken of, the divine procession towards man has been occurring. The vital forces of the Western Civilization have been drawn from it. The state of senility, to the contrary, as described by Spengler and Eduard von Hartmann, occurred when the presence of the Principle began to be disregarded.

The fact of the presence of the Principle in the history of the Western Civilization and in the history of man consequently too, is connected with His assuming the human flesh and soul. Thus, the human nature was nobilitated and the firm basis found in it. This Man was a measure indeed.

The dynamics that issued was both incredible and unpredictable. First, the mere fact of the procession that took place some 20 centuries ago was acknowledged. As the time went on – paradoxically – the very fact was sinking more and more into oblivion, but the effects of its having occurred more and more effectively discounted. The scientific and technological progress that issued was but an accessory and a by-product of the divine procession that occurred and changed irrevocably the human history.

Let us translate the latter phrase into Latin. Latin distinguishes between *res gesta* (we are speaking of here) and *historia* in a narrow sense of the word. Etymologically, *historia* stems from the Greek *historein*, which means: *to narrate*. The distinction is to be underscored here, because we not speaking of a “narration”, but of a *fact*, which could (and should for that matter too) be narrated adequately. It is by no means easy, as the events of one’s life are barely ever precisely understood by this person him/herself. Facts are experienced, but this does not beget wisdom automatically. Understanding them is laborious; it is only wisdom which regards the events for a broader perspective, and, possibly, *sub specie aeternitatis* also. In this context, let us underscore that the literal sense of the Writ encompass history, etiology and analogy alike. Etiology does not put up with a narration of facts, but demonstrates their causes too. Analogy, on the other hand, demonstrates the coherence of the narration (shows that various places of the Writ do not contradict each other).⁷⁵

⁷⁵ *Summa Theologiae*, I q. 1, a. 10 ad 2.

These remarks are drawn from Thomas' Summa. In the Middle Ages, a science existed that regarded the fact in question as consciously and diligently as only possible. The science was called theology. It happened to be blamed for hampering the progress, but in fact it only demanded (as in Galileo's affair) the strict justification of the theses proposed. In this sense the judgment on every human activity was triggering the progress.

It might seem convenient and possible both to profit from a capital and to squander it. It might be tempting to blame those who point to *the fact* for obscurantism. The Source was effectively present in the human history and the fact was to be acknowledged. The fact must be explained as honestly as only possible, because honesty demands acknowledging the human weakness and obliges to gratitude for its healing. Theology is not a humanistic discipline. In fact, it might be called the opposite. For it is only natural to man – as Neo-Platonists justly observed – to forget about oneself and try to focus entirely on what is above him/her. The firm basis for human existence is not to be found man, unless *the Man* is meant and historically known. There is an evolution (and devolution also) of human activities which are related (rightly or wrongly) to the Ultimate. There is a stance devised to justify *any* relation and called relativism. The stance proved to be *thoroughly* unhuman just because of *pretending* to be *absolutely* human.

4. The starting point of science

Science is, according to Aristotle, not just any set of statements; it is a *system ordered* by what is aimed at in it: its certitude. Scientific statements are necessary not, to be sure, in the sense of them being necessitated onto scientists, but in the sense of their conditional (final) necessity. *So as to* obtain a definite conclusion, some scientific discipline must be preserved (is necessary). *If* a science is about to gather important conclusions, they must be gathered according to a discipline of reasoning. Thus, the starting point of a science is – paradoxically – definable by its opposite: the end of the science.

Our existence and all our activities too, are, obviously, incidental. But we are not hopelessly destitute in a world alien to us. Nature – as Aristotle has it – hints solutions for possible discoveries. The worth of a discovery, on the other hand, is assessed according to the certainty of its conclusions. Thus, human activity is stamped with the mark of both contingency and finality. We commence to live in some (material and cultural circumstances), but we hope to transcend them nonetheless. People happen to be *subjectively* certain as to what they believe in, because the cultural context their existence has commenced in might make them indolent to try and search *truth as such* beyond some "*truths*" subjectively (psychologically) certain. The difference between the psychological and intellectual certitude becomes clear. The intellectual certitude is definable by the end to be obtained in a science. Contrary to that psychological one, the intellectual certitude is absolutely unshakable.

Let us resort to an example. Some objects might leave the Earth provided their kinetic energy is bigger than the potential energy of the system they form with the Earth (the speed required equals 11.2 kilometers per second). Analogically: some concepts are hardly removable from our minds, but some amount of energy used for falsifying them might suffice

for eradicating them from the “potential” of our memory. This is the case with the psychological certitude: one day we might believe in the opposite of what we have been subjectively certain, although normally the situation is barely imaginable. But it is not the case with the intellectual certitude. Our intellect is a “black hole”: no objects within its potential are able to leave it. Our body (and senses too) can *hamper* the use of the unshakable notions, but nothing can affect their *presence* in our intellects. There is no possibility to remove them from the intellect (the energy of the sensual does not suffice to destroy the energy of the immaterial). People with Alzheimer’s disease *seem* to lose the ability for thinking, but perhaps some time, the disease will be curable, and then the knowledge they have gathered in their youth will come to light after being obscured.

Summa Theologiae” (STh., I, 19, 3, c.) discusses the problem of the necessity of being:

Necessarium dicitur aliquid dupliciter, scilicet absolute, et ex suppositione. Necessarium absolute iudicatur aliquid ex habitudine terminorum, utpote quia praedicatum est in definitione subiecti, sicut necessarium est hominem esse animal; vel quia subiectum est de ratione praedicati, sicut hoc est necessarium, numerum esse parem vel imparem. Sic autem non est necessarium Socratem sedere. Unde non est necessarium absolute, sed potest dici necessarium ex suppositione, supposito enim quod sedeat, necesse est eum sedere dum sedet.

There are two ways in which a thing is said to be necessary, namely, absolutely, and by supposition. We judge a thing to be absolutely necessary from the relation of the terms, as when the predicate forms part of the definition of the subject: thus it is absolutely necessary that man is an animal. It is the same when the subject forms part of the notion of the predicate; thus it is absolutely necessary that a number must be odd or even. In this way it is not necessary that Socrates sits: wherefore it is not necessary absolutely, though it may be so by supposition; for granted that he is sitting, he must necessarily sit, as long as he is sitting.⁷⁶

Inconspicuous as it might look, the most general principle was laid down (and reworded) here: the non-contradiction principle. This most general principle of science contains two most important notions: of being and non being. In the quotation, “being” is replaced with “sitting” and “the impossible” with “the necessary”, so that the principle is shown to work in concerto. This relation of “being” and “non being” might seem trivial or bereft of the possible application as the principle of science. However, it is the most important one, because showing the problem of whence our *understanding* of the world begins and *whither* it advances. Some (e.g. Kant) rejected the primacy of the principle, but characteristically, they rejected, at the same time, the possibility to get to know being hidden under phenomena and the validity of the proof of existence of God. The whither of our human existence (the contemplation of Being with the capital “B”) begins from drawing a borderline between being

⁷⁶ *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920; Literally translated by Fathers of the English Dominican Province

and non-being. The Thomasian Way (of the intellect) advances along this line. Let us quote once more *Gaudium et spes* (Ch. 57) in this context:

Indeed today's progress in science and technology can foster a certain exclusive emphasis on observable data, and an agnosticism about everything else. For the methods of investigation which these sciences use can be *wrongly considered as the supreme rule of seeking the whole truth*. By virtue of their methods *these sciences cannot penetrate to the intimate notion of things*. Indeed the danger is present that man, *confiding too much in the discoveries of today*, may think that he is sufficient unto himself and *no longer seek the higher (altiora) things*.

Now, the Latin “altus” means both “deep” and “high”. The phenomenon of e.g. “sitting” if reflected on diligently enough, shows a substance beneath. Sitting, walking, listening all might appear to be banal human activities, but, in fact, the only banal affecting human life is that of human relation to these “common” phenomena. The deeper understanding of these phenomena, the higher human spirit flies.

The principle must be formulated in such general terms if meant to be that of the most general science – metaphysics: the philosophy of being. On the other hand, the principle if redressed and reworded in the terms of an inferior science, is not likely to be affected by this alleged vagueness. The principle can be seized in less abstract terms in the philosophy of nature, and its purport can be the same, albeit the applicability – restricted. Then the principle would read: *necesse est eum non moveri dum quiescit*. The natural opposition to motion is rest. Both terms are apparently as concrete as applicable to what can be seen and imagined.

In mathematics, identity relations are called trivial. On the other hand, the real accumulation of knowledge results from that both sides of an equation are not formally equal. The same holds true *mutatis mutandis* for metaphysics. The non-contradiction principle cannot – for all what Kant says on the matter – be reduced to the trivial $A \equiv A$. The “identity principle” is not the first one.

The problem of philosophy is that of the universality of statements (stipulated by Aristotle) being matched with the real progress possibly achievable; i.e. the checkable validity of its statements. The notion of being was, according to Hegel, the vaguest one, and, consequently affected by the aforementioned flaw. Hegel followed here Wolf, Scotus and Avicenna, and his stance was a natural consequence of the subject matter of the most general science having been supposed both most formal and most general. The medieval *ens inquantum ens* was taken specificative (being was “specified” so). Another specification of being occurred in Hegel: the concrete meaning of being was believed to be found only in what was considered concrete as such – more than anything else – in history. The phenomena of being were, thus, illustrated in Hegel by their historical guises. Still, and contrary to what might appear, the theme of history was but a consequence of the idea of the progress of science assumed previously. History was – according to Hegel – the history of scientific progress. The latter, however, was in Kant (Hegel's immediate predecessor) intrinsically connected with the mode the real accumulation of knowledge occurred. Time was, according to Kant, pivotal for understanding the concrete sense of science. It was responsible for the accumulation of knowledge. The very sequence of the acts of experience accounted for the progress and thus (in Hegel) for the sense of being consequently too.

Accordingly, the progress was measured by the accumulation of the primitive data, and the nature of the data (their determination) was pivotal for the validity of the purely philosophical statements, no matter how generally understood (or possibly questioned). Still, granting the truth of the Kantian statement that human cognizance consisted in seizing the elementary data and elaborating them subsequently, it seems to be pivotal, nonetheless, to determine the sense of the primitive data of experience; to determine what is concrete properly speaking. In other words: centering of phenomena need not be a token of phenomenalism. In Aristotle, appearances are called phenomena (the term is Greek) not because they *appear before* “the tribunal of our mind” (as in Kant), but because substances *appear beneath* them. The following remarks must be formulated:

- 1) It is essential for science to settle what is elementary in the human cognition. For the Kantian statement that the human mind did not face anything complex in nature is problematic. Perhaps, elements are just minutely complex, and their complexity not easily perceptible. The elaboration of the primitive data that follows might be therefore different from that proposed by Kant, viz. its direction hinted, as it were, by the very structure of the elements rashly supposed indivisible;
- 2) The very fact that human cognizance consists in seizing the formal of things must be elucidated. In other words: the nature of the formal aspect of objects is to be determined. Kant himself acknowledged the fact in a sense, for he wrote that what he called the transcendental deduction of categories was the most difficult task of philosophy. Now the problem is whether “deduction” could be “transcendental” really. *Some* truths can be deduced, no doubt. But natural objects could only induce us to primitive (source) cognizance. Seizing the problem in the terms of classical philosophy, we must state that deduction (apagoge) must be preceded by what makes it valid for the cognizance of the real objects, and not those merely thought of. Epagoge (induction) must come first. The formal is to be sought beyond the mind.

Ad 1) The data of quantum mechanics prove that the elementary particles are not as simple and additive as real numbers are. The macroscopic objects are “additive” at least in the sense they are observable according to the probability of finding them in a certain place. The objects observed are similar to those “constructed” in the Kantian mind indeed. Still, the very probability thereof is given only by the complex conjugate, i.e. but *indirectly*. It equals:

$$P(x, t) = \Psi^*(x, t) \Psi(x, t).$$

The wave function $\Psi(x, t)$ includes the imaginary number (i) so that it is impossible to ascribe a “dimension” to the natural objects intuitively known, and the idea of intuition (Anschauung) might appear inadequate here. A paradox appears: the equations including $i = \sqrt{-1}$, correspond to the real state of matters and cannot be known “intuitively”; for they are but indirectly observable. On the other hand, the very observation (the experiment in the Kantian sense) is connected with the sheer probability of an object occurring in the given set of spatial temporal (x, y, z, t) circumstances. When observing “big” objects, the probability of

their presence approaching $P \rightarrow 1$, might be *supposed* to be the unity of an object and the elementary particles that constitute it additive without restrictions.

The idea of experiment is connected with predictions as to the future state of matters. In fact, a probability of them is given only. A certain set of circumstances produces some statistically knowable state of matters. In fact, the experience in the Kantian sense is nothing else than the observation. The problem is *what* is really observable. Now, passing from the objects called “big” to those “small” ones we stumble upon the objects that are not observable in the way Kant imagined them to be. Science faced in the 20th century the impossibility to determine the future state of matters departing from experimental border conditions, i.e. generated by an experimenter. Nature is not an experimenter. The problem of the border conditions was given a mathematical description by Markov. Still, the *natural* human cognition (epagoge) seems to consist in grasping “particles” just “small” enough to make up the real unity of objects, and not that intuitively known only. The experience (epagoge) in the Aristotelian sense is not the same as the experiment in the modern sense of the word.

The experiment as understood commonly nowadays, is not concerned with the primitive data possibly achievable, or at least, with what is really primitive in nature. Nature proved to be disobedient, evasive and unyielding to the lofty commands and “dictates of reason” devised by Kant. Determinism in the Leibnizian sense (and admitted as possible by Kant) proved to be bogus. Science, however, need not be so. For according to Aristotle, there is a determinism in nature, but so to say, an inverse one. The future is not determined by the present or the past, but to the contrary and paradoxically: the present state of matters is what it is in *the perspective* of what it is about to be (of the end). Nature does work in such a way. It is not an experimenter. It is not to be understood anthropomorphically. There is, according to Aristotle, an inverse (conditional and teleological) determinism in nature. The “philosophical” (teleological) future “determines” the past and the present. It is a necessity, and the one called by Aristotle conditional one, or the necessity of the end. This accounts for the absolute validity of scientific statements. The validity is based upon the fact that it is but *accidental* for science to unfold in time (and space). If the human understanding had been temporal (as Heidegger imagined), the absurd consequence of Aristotle’s statement would have been: the future knowledge determines the state of the present one. There was a reason in Hegel writing: “The owl of Minerva spreads its wings only with the falling of the dusk” (the end of history). But the end was understood temporally only (as suggested by Kant). Humans came to understand history developing like logic. Hegel’s history is another guise of the transcendental deduction.

In fact, the temporal consequence of the cognitive acts is not essential for science. Moreover, the *logic of discovery* so highly appreciated by Heidegger himself (albeit incompatible with temporality of knowledge indeed) consists not in the mechanical ordering of premises and conclusions but – to the contrary – in setting a conclusion provisionally and searching its premises *in time* subsequently. There is “a past” in the human understanding, in a sense. It is the past of the real objects the human mind turns back to so as to ascertain for the present state of knowledge.

All this adds up to rejecting the naive assumption that knowledge mirrored the reality (Scotus), or at least ought to, and a parallelism existed here in the sense Hume and Leibniz

imagined. In fact, the absolute necessity of scientific statements requires but conditional necessity of the state of matters.

In this context, the Aristotelian distinction of two kinds of actions might be adduced: actions might be either natural and elementary, or rational and free – aimed at a purpose. The former are accomplished uniformly and follow upon each other in way that it is impossible to predict definitely the future state of matters departing from the present one. For the mechanical composition of elements makes up the whole only in the perspective of an end, and the latter happens to be separated from non-cognoscent (especially from irrational) beings. The whole, on the other hand, is (if ever) teleologically determined; i.e. determined by the end about to come. Now, if experimenting consisted in arraying the materials only and the end should be *practical only*, the definite *natural* and *intended* outcome would not issue. The animal organisms could be believed to exist as an outcome of some set of material circumstances if nature were such a *pragmatic* experimenter and the experiments carried out with a *pragmatic* objective in mind only, i.e. the objective of exploring all the possibilities. For some possibilities are used by artificers (and experimenters) indeed. Nature, however, might have been endowed with the considerably wider gamut of possibilities to try out. In reality however, not even human experimenting can dispense of the idea of an end and seized in conceptual terms, i.e. theoretically (The problem will be addressed in the following Chapters). Now the problem is that it has been believed that the imagination could replace the intellect and the conceptual knowledge be but an accessory of exploring the possibilities. In the real world, however, the rational must dominate over the mechanical. The fact was expressed in The Latin: *opus naturae est opus intelligentiae*. No mechanism can exist without the one who knows its working principle.

The so-called Eddington's Monkey comes to mind, able to type a poem when set against a keyboard. (And any book e.g. the Newtonian Principia Mathematica for that matter too). Obviously, it cannot write or recite it, for writing and speaking implies constant focusing on the end about to be accomplished; still, if uttering the words be replaced by typing which is mechanical, a possibility is not to be discarded that a certain arrangement of mechanical circumstances could produce an effect quite similar to that apparently intended, viz. by the ordinary writers. That a monkey be able to write Homer's Iliad, is highly improbable but is not impossible after all. It is "theoretically" possible (imaginable). Its probability approaches $P \rightarrow 0$, but does not equal it. Consequently, the very Iliad by Homer was nothing save the possibly incidental and bereft of intrinsic value. If reiterated long enough any action consisting in sheer arraying of elements could yield the effect identical to those that otherwise seemed intentional and rational. So, there was no essential value normally attributed to the things elaborated on purpose. The second type of agents listed by Aristotle might have seemed but an ideal and not existing in the natural world.

The paradox requires a solution. According to Aristotle, there is both the material and intentional (βούλημα) to be found in nature. In some restricted realm they might be separated indeed (and the distinction mentioned above valid), but eventually, they must correspond to each other after all. There is no possibility save the possibility of something about to attain the fulfillment intended first.

Normally, we accept that human actions should be determined and responsible. They are so indeed if the intention conceived in the human mind as to what is about to be

determines the use of means (“matters”), which exist before the end is achieved. But on the other hand, the existence of a matter separated from the end (the material separated from the spiritual and intended) is incidental. Human actions are not at all similar to the experimenting (by trial and error) with pragmatic objective in mind. They must be more than that.

Eddington’s Monkey is a quaint object indeed. Its existence poses a special threat to the world in which responsibility is required and, on the other hand, the existence of absurd actions should be excluded. Now, if the totality of being had been infinite (this or that way), the monkey-poems would crop up sooner or later. According to Aristotle such a possibility is discarded. For there is a real and natural “container of possibilities”, which is different from that of the infinite possibilities of being. Aristotle calls it prime matter. The elementary in nature is to be matched eventually with the specific form that organizes it. Potentiality as such, on the other hand, is capable of sustaining infinite species. Now, sustaining them is quite similar to uttering words bereft of meaning; for those meaningful ones normally express the specific natures of things only. In nature, such a container of pure possibilities is impossible, otherwise the tongue of nature would be gibberish. The *natural* possibility is that of a form about to come and complementary to the matter, quite similar to the verb that comes at the end of the Latin sentence (or the subordinate German clause), after some *elements* that prepare it. The universe is a totality in which there is no place for monkey-poems and no absurd ideas at all.

Science consists in showing what can occur in nature. Some difficulties arose connected with the fact that a particle could be statistically present in two different places. Moreover, the special theory of relativity would have been violated if the communicating of two parts called entangled ones had exceeded the velocity of light. Both difficulties result from the preconceived idea of the space – the infinite container of places as a background of what is primarily and empirically given. In fact, both place and momentum are but two complementary parts of the elementary datum of experience. The difficulty results from regarding them abstractedly, if abstraction consisted in separating them. Nonetheless, an abstract mathematical model can be helpful after all. The corpuscles can be described in terms of the wave-particle duality (real phenomena are affected by such a duality). A wave describes an object a-locally, i.e. without reference to a form of locality given a priori. Science itself seems to overcome the difficulty connected with the idea of the background continuum sustaining the physical objects. There is no continuum as such; there are *diverse* continua connected with particular objects, and a body is discontinued just because set against its closest environment. The sinus function (used in the wave equation) is described by the position of the phasor. So, Aristotle’s conviction as to the priority of circular motion seems to be justified. On the contrary, the uniform and non-accelerated motion in the infinite continuum is imaginable only and impossible to exist in nature.

In the case of elementary particles that undergo motion, a coupling occurs indeed. According to Aristotle, experience (to be neatly distinguished from experimenting) consists in seizing the natural counterparts as relatives, i.e. related essentially. There is a certain natural direction of actions and hinted in the primitive data of experience. Natural objects act in a predictable way, just because their unity is that of their nature and determines the way they act. Electron, proton and other elementary particles are endowed with natural unity (even if they might prove to be composite someday after all). That is why they are completely

different from the material used for experimenting and considered as part of a uniform substance modeled arbitrarily. This substance has additive unity only, and the object produced is one and real statistically only. The unity of elementary particles, on the other hand, is natural. They are endowed with natural borders, just because the wave function that describes them, ceases to be at some points periodical, and the second derivative does not equal the basic function there. The sinus/cosinus functions describe them partially only.

Ad 2) The experimenter must put up with stating *the fact of* aforementioned coupling, which, however, does not amount to the impossibility of settling its *nature* in another way. Perhaps, it is just experimental method that is unable to do the job. Perhaps, the elementary composition and its nature can be known after all, albeit not experimentally. The experience cannot be reduced to experimenting. Now, that which is *naturally coupled* are the relatives, and related to each other essentially and in the primitive sense of being relative. The simplest example is that of a father being related to his son. The fact is experienced, albeit it does not seem to satisfy the requirements of the exact science. Normally, we assume that there is something *between* a father and his son. The simplest way to describe the human nature is, thus, to regard it as *what is between* a parent and his/her children. For, apparently, they are related to each other and essentially so. The fact is plain as for the natural generation. The so-called “outer causes” are concerned – the efficient and what is aimed at (*efficiens et finis*). Still, the same *mutatis mutandis* must hold true as for things already existing. There must be in them inner principles related essentially, i.e., constituent of their existence. Accordingly, the formal principle (the inner one) must be present in all things and the correlative – the matter – too. The unity of a thing is constituted along with its essence. Avicenna assumed that the unity came from the transcendental principle and the stance was advocated by Kant some centuries later. According to Avicenna, unity is an accident of a substance and its existence too. The problem of the existence was, as known, not settled by Aristotle peremptorily. This opened the possibility of the interpretations similar to that proposed by Avicenna. Thomas is precise in stating that existence is an inner principle, nay, the “most inner” one (*intimum*); it is the most formal component of things. Sadly, its importance was overlooked by Aristotle although the four cases were listed adequately.

The formal datum of experience (e.g. the humanity) is *discovered* through the elaboration of the primitive data of experience; but obviously, is not *constructed* in the mind. If man had imposed the formal element to the continuum of sensible data, and had schematized them (as Kant imagined), no real progress of science would occur. The science would be barren and devoid of innovative thinking. On the other hand, real objects hint – as Aristotle puts it – the right direction of discovery. If they are coupled and entangled they are able to do this. They exist in determined way (i.e. determined by the conditional necessity of being) and are discoverable as such.

The interpretation of quantum mechanics in the terms proposed above might appear questionable as quantum mechanics applies to “small” objects only. The aforementioned humanity does not seem to be “small enough” as to be treated analytically. Albeit we assume that human nature might be experienced, we assume (at least tacitly) that the everyday experience does not meet the requirements of what is properly called science.

But paradoxically, science itself has hinted the solution. The very mechanism of seeing (and of experience consequently too) is to be thought over once again in the light of the

latest scientific discoveries. Recently, quantum entanglement has been proved to exist in the smell perception. Moreover, the same quantum entanglement has been discovered to work in the perception of migrating birds. They realize their position using the quantum magnetic needle. Moreover, the human ear drum registers the displacements of ca 1 Angstrom (the diameter of an atom), which is incredibly precise and sets the sound perception on the same elementary level. Nature apparently uses the displacements traditionally called “small” in the sensual perception.

Philosophers, in turn, might have been dimly aware of the same. Although in the Husserlian *Lebenswelt*, the objects must be phenomenal and, consequently, “big” ones, Husserl at least suggests that the objects are “paired”, which seem to preclude the possibility to isolate them in the way the objects of experimenting must be.

Nevertheless, the world we live in was believed by many as an output of the creativity of nature (experimenting on a cosmic scale), which resulted in constructing (the term used by Kant) objects. If e.g. lenses are constructed in optics, their dimensions must be considerably bigger than the length of the light wave, otherwise interference and diffraction distorts the image of an object. In the Kantian *Anschauung*, the objects should be “delineated” without distorting their outlines. The primitive datum of *Anschauung*, in turn, matched with (or: “multiplied by”) the fundamental principle “Ich denke” (I think) yields *Weltanschauung*, but is incapable of getting to know the *Welt-schöpfer* (the Creator). Kant discussed the problem profusely. The word “creativity” underwent a significant shift of meaning.

Consequently, it must be observed:

- 1) Although quantum entanglement occurs (and is proved so) on the elementary level first of all, the latest discoveries mentioned above as well as those concerning the transfer of energy within the living organism prove that living objects are “small” in the sense of quantum entanglement being applicable to them. In other words: they are not objects possibly producible with experimental devices. They are similar to microscopic objects discovered at the beginning of the 20th century. The effects of modern researches, if interpreted philosophically, prove that regarding living organisms as “machines” (which Descartes did) is naive and results from an unjustified assumption that natural objects could be put up in the way experimental objects or the objects produced on a large scale were.
- 2) The elementary components of experience had been completely overlooked by Kant and the miscarried idea of what was originally experienced was going to prevail. The supposedly adequate presentation of an object (stipulated by Husserl) cannot be adequate because of a parallelism between reality and consciousness (which is impossible to be proved anyhow). Re-presentation of objects, in turn, is based on a judgment concerning the elementary composition, but follows a judgment *sensu largo* – the abstraction of the essence of things from the elementary purport of the sense data.
- 3) The abstraction and its virtual content might well go unnoticed, albeit it is *effectively* present in all human activities; of those normally called intellectually disparaged and handicapped included. They do not *exhibit* the ability of judging things, but possess, nonetheless, the basic faculty for doing this. Whether the

ability could be realized and under which circumstances, is another question. Generally, human mind is *naturally guided by the intellectual principle* either borne in mind or born in it only, for – according to Thomas – the similitudes of things are generated (born) in our mind when abstracted. The principle is no less effective just because being unheeded.

- 4) The adequate judgment is to be expected of the science; not a sheer approximation. It is workable in relatively small boundaries of the experience. Obviously, no judgments can be adequate if concerning mere existence or a sheer coincidence of objects. Neither can language be so and mirror reality. A *judgment* can be so as long as relatively narrow boundaries of a science are observed and the propositions objectively verifiable. But if so, they are objectively valid. The judgments of science are necessary just because founded upon the necessity of nature; not an absolute one (as Leibniz believed) but conditional and connected with the finality of nature.

5. Facts and being-naturally-related. The language of being-naturally-related

The English FACT stems from the Latin FIERI (to become). In classical philosophy, two notions of BEING and BECOMING are sharply contrasted. According to Plato, it is being only that can be the proper subject matter of philosophy. Not even the proper sense of becoming can be seized unless the sense of being is known first. Things which come to existence are sensed first, but not understood nonetheless.

In his *Summa Theologiae* (I, 25, 4, c.), Thomas addresses the problem of the necessity of the past events. They are, if taken *separately*, contingent. The nature of the *past events* (and of all events for that matter too) is to be neatly distinguished from the nature of the *past as such*. The latter (if seized intellectually) constitutes a special aspect of temporality. Time (connected with the factuality of the world) is both a feature of motion and its measure. But the most general way things can be measured consists in grasping them as diverse using the first intellectual principle: the principle of non-contradiction (it is impossible *to be* and *not to be* at the same time). The proper principle of distinction involves the notion of measuring in a broader sense.

The necessity of scientific statements consists in – figuratively speaking – “turning to the past”, according to the famous Hegelian formula: *Wesen ist was gewesen ist*. (“Essence is what has been”); the essence is what has appeared to be when reflected upon. Two Aristotelian notions fuse together so as to form the notion of the essence of things (the subject matter of science): that of τὸ εἶναι and that of τὸ τί ἐστίν. The essence of things – τὸ τί ᾗν εἶναι – includes the intriguing praeteritum of the verb “to be” (εἶναι): ᾗν (it was). The term τὸ τί ᾗν εἶναι is almost impossible to translate literally. The essence of a thing (its nature) is constituted by both its being (εἶναι) and the concept (τί) normally expressed in words.

Accordingly, both reflection and abstraction can be pictured as “harking back” to the past, or, in other words: in seizing the principles of a given thing in such a way that a concept *re-presents* a thing in the sense of its presence in mind being accounted for and *retraced*. Every statement (no matter how trivial) includes, thus, some guise and trace of necessity (*praeteritum sub ratione praeteriti habet necessitatem*).⁷⁷ E.g.: *necesse est Socratem sedere dum sedet*. (He must necessarily sit, as long as he is sitting). The fact is connected with that things are not named arbitrarily, but according to what has been assumed and granted. The consequence in using names, however, is of a particular importance for science (*Metaphysics*, IV). The past, if seized intellectually, is endowed with the necessity of its own.

Contrary to animals, which live in the present moment, and whose existence is, consequently, evanescent, man is able – due to his/her intellect – to grasp the essential correlation of the primitive data of the experienced. The essence of things grasped in such a way might encompass individuals distant in time and space (e.g. humans that passed away, or are about to exist), quite similarly as two entangled objects (modern physics speaks of) might be correlated no matter how distant from each other. In general: man is able to grasp two sides of an object simultaneously, and this enables him/her to build the language, because the words written down several centuries ago are equally present to our mind as those just spoken out. The language is always *our* language, and the “we” is as inclusive as open to all who try be outspoken about what they try to understand. This constitutes the human being-in-the world.

Although some objects might seem contingent, they become the objects of the human world in the moment we turn to the past and see our “now” with the eyes of those who preceded. Turned to the works of the masters of the past, we can understand our now and project our existence into the future too, mastering themselves the future this way.

It is impossible to weave one’s existence into the tissue of the universe without grasping the elementary composition of its elements first. If the existing things were isolated, the human existence in the world would be so also, and the life-activity would advance at random. But, there are nuclei of the necessary relations in the universe on the elementary level and known empirically, which enable humans to create their being-in-the-world and the language, which is a special mark thereof. Both everyday language and the scientific one are important here. The language, if elaborated carefully and responsibly, enables man to trace back the threads of the elementary relations of the universe, and to encroach into the fabric of the causal relations of the real world.

First of all, the necessary correlation of the elementary parts of the universe is empirically given. It might seem that it is proper to man to look into the future and the human world is that of what is expected and hoped for. Were it the case, still, the future is far from being a sheer sequence of events, and the perspectives of the human existence are far from being subjectively founded too. The very equivocation included in the word *END* is

⁷⁷ *STh.*, I, 25, 4, ad 1.: Although it is impossible accidentally for the past not to have been, if one considers the past thing itself, as, for instance, the running of Socrates; nevertheless, if the past thing is considered as past, that it should not have been is impossible, not only in itself, but absolutely since it implies a contradiction. Thus, it is more impossible than the raising of the dead; in which there is nothing contradictory, because this is reckoned impossible in reference to some power, that is to say, some natural power; for such impossible things do come beneath the scope of divine power.

meaningful. The end is not a sheer terminus of motion. There is a finality in motion, and a finality in human actions too (if they are really human). Humans intend some objectives, and hopes are but consequent upon what is rationally founded. Similarly, the Ultimate Object of the human beatitude is not only hoped for; He (the Object) is understood and the cognizance of Him intended first. The actions that are normally connected with the everyday life are subservient to the ultimate as far as they are human and rational. The means is proportioned to the end (*finis proportionatur rebus propter finem factis*), and conversely: the end is related to the objects otherwise possibly deemed incidental. If related indeed, they are necessarily so. Things might be incidental, but need not to; for they should be part of the human world and definitely related to the end of human existence and understood as such. Them being incidental is deplorable; whereas them being ordered is desirable.

Res propter finem facta is a thing done for the sake of the end; viz. the one whose being is defined in the terms of the relation to the ultimate. The only problem is whether, and to which extent, things are defined are definable. Various sciences describe things more or less definitely. For if we described a thing in terms of the definite relation (natural tension) to its end, the nature of the object would be defined peremptorily. According to Aristotle, the substantial form is introduced by the generating agent according to the end intended by it. The possibility remains open as for defining things so, and providing the real definitions of things. The genus (the environment) and what marks out “the outlines” of an object set against its “background” is given in the real definition of an object (*differentia specifica* issues from applying the first principle of distinguishing things). More generally: a specific formality of being is known, and connected with a given species. Naturally, the species are as immutable as the human cognition is. And conversely: no define statement is possible (that of the absolute variability of things included) unless a certain point of reference in the world is stated to exist. Now, species are so. They *originate* in our mind only when abstracted from particulars. The process (the origin) unfolds in time, but *incidentally* only, as the human understanding is connected with using senses and sense organs, but *transcends* the spatial temporal just because of what it really is: cognitive of being as such. Grasping the sense of being consists in seizing a formality of being and peremptorily so. Intellectual rest follows and might be called a scientific certitude.

On the other hand: were the boundaries of objects believed to be set down arbitrarily, and according to convention only, no definite explanation of things would issue. Moreover, the scientific bequest of the past generations would be gradually squandered. The future is open in a sense: there is no guarantee that progress instead of a senile decay of the civilization as described e.g. by Spengler would issue. Hopes are, paradoxically – connected rather with the past possibly regenerating in, and entering, our present time.

The aforementioned boundaries of bodies can be seized either literally, and the problem of the locality of physical objects put in the first place; or broadly, and the boundaries can be those of objects that are really and radically different and diverse (and known so due to the non-contradiction principle). Everything deepens on to which extent the first principle of knowledge is being used. According to Aristotle, metaphysics tackles it thematically. Things might be situated in different places; but the problem of the radical diversity is far from being just the problem of their locality; it is the metaphysical question of unity and diversity.

So, the problem of determining of what things really are appears pivotal. It is the problem of the nature of events, i.e. their being intrinsically correlated; their being in a special way; their being necessary in the sense mentioned above.

Two possibilities are open: it might be assumed, after Aristotle, that the elementary are correlated to each other; or the opposite: it might be assumed that the primarily given is either an isolated object or a set of incidental properties. Husserl and the advocates of the existential Thomism assume that existent individuals are known first, following Scotus's statement that the contingent existent particulars were known indistinctly first. The consequent science unfolded without the essential correlation to objects (which is contrary to Aristotle, who claims that the very essence of knowledge consists in being related to objects). Wittgenstein, in turn, advocates the second stance. There was a bundle of properties known first (and disconnected). Both stances agree in assuming that objects are contingent – whatever the sense of the word: they are either facts or existent individuals. No conditional necessity of objects was assumed. Both stances are detrimental to the real progress of science, as it was supposed to unfold in a loose connection to the real state of matters. The “existing objects” might be supposed to be cognizable by the so-called existential judgments (Husserl, Brentano, Gilson), or existent in a “mysterious way” (Wittgenstein) to the effect of being non-cognizable at all. Both stances agree in stating that no necessary correlation of beings exists. For neo-positivists, the notion of *substantial* being (of classical philosophy) is useless and metaphysically burdened. True, it is philosophical, as substance is known secondarily only and does not need to be tackled thematically (as it is in philosophy), but any science at all issues from the necessary correlation of its principles, nonetheless. This correlation must be regarded by every science, albeit the essential correlation of things toward their existence is regarded in the supreme science only. This correlation makes up a substance. But various modes of existence are dealt with by various sciences. It is not necessary for a thing to exist; but it is necessary to all things whatsoever *to tend* to existence as far as they could. This is in the perfect accordance with the common sense: existence as such is good and intended first of all. The tendency might not be given the proper name in particular sciences, but is effective in what they regard nonetheless.

The very possibility of existence of the bundle of properties (them being something definite) is questionable and the fact was admitted at least indirectly, because the so-called protocol sentences (meant to mirror the sets of properties) were questioned. It seemed that language as such was unable to seize the objective state of matters. In fact, nothing else was to be expected after creating a border between reality and consciousness. The worlds of facts and ideas were separated (Hume, Leibniz). The problem of the bridge between the two realms created by the heirs to the Cartesian tradition proved insolvable. Not only were the protocol sentences bound to be questioned sooner or later; all objects expected to be known must have been so too. Thomas Kuhn attacked the very notion of naked facts. The “facts” were always interpreted and the role of philosophy consisted in interpreting them in the desirable manner. The stances mentioned above are a simple consequence of the principles laid down by Scotus assumed uncritically in modern times.

A significant shift of the meaning of FACTS has occurred. The term is used for describing what is “related” in the press or mass media, whereas the very being related to reality has been lost sight of. The same takes place in the philosophy of subject. According

to Gadamer, humans are isolated from the material world and spell-bound in the world of words. The language was a totality of its own, and the cognizance whatsoever implied the previous knowledge of the totality; it consisted in setting anything at all against the background given a priori. Language was deemed to be a medium of cognizance; nay, the very human rationality was equaled to the use of language. Men were, as it were, naturally short-sighted, and unable to see natural things as they are; without a matrix. Now, language was believed to be such a matrix. It was a kind of glasses indispensable for seeing things at all. People happen to be told what they feel or ought to; what they think or should; what they were amused at too; for it was suggested to them. The totality was constituted out of parts and parts are so in relation to the totality only, so that a man was imprisoned in the enchanted circle of words.

The stance of the philosophy of subject seems to be more self-consistent than that of neo-positivists. Husserl calls them ironically “the men of facts”, and probably a reason existed after all. If it had had to be chosen between the two stances, that of phenomenology would have been preferable. But in fact, we do not have to choose, for both stances assume tacitly the same and mistaken principle that a border exists between the words and facts. The border might have existed if words had been deprived of what they really are: intellectual concepts originating from abstraction.

The very fact of choosing no matter which philosophical system occurs in the physical world only. For the system of e.g. phenomenology as written down in “Ideas I” by Husserl has a determined material side. If, during turmoil of war all copies of the book were destroyed and the advocates of phenomenology died, the Husserlian system would cease to exist. Thus, Husserl’s statement that “only the Spirit is immortal” (the human thinking was meant by Spirit most probably) expresses a romantic vision of science.

We use language in the material world only. An elementary situation might be imagined in which a communication occurs. A thought-experiment is presented in the IV Book of Metaphysics. A is communicating his/her thoughts to B. Let us pose a simple question: where are the thoughts after leaving A’s mind and not yet present in B’s mind?

Apparently, the acoustic wave is propagated in the material medium, and its properties might be described with some approximation even in the terms of the Classical Newtonian Mechanics. The problem of the so-called intentional being arises. In fact, the intentional being (in the phenomenological sense of the term) is, as it were, “split” in the very moment words are uttered by A and directed to B. The physical encroaches in the allegedly autonomous world of thoughts (intentional being) as far as words are what they are supposed to be, viz. communicative of *some completely new intellectual purport*. But they might merely pretend to, because the world of words could be a safe abode for ideas harbored in minds only and bereft of the *power* to be *intended* in the proper sense of the word. Them being intentional (in the classical, not the Husserlian sense) is tantamount to spiritualizing the material medium between two subjects. The real communication only occurs if innovative thoughts are imparted. They are so, in turn, as far as they are *powerful enough* to spiritualize the material medium. But nothing mysterious is meant by “spiritualizing”: it is done by imposing a very *accurate measure* to the motion of e.g. the air the acoustic wave is propagated in. (The accuracy impossible to copy in an experiment). The spiritualized in this way can be called a

language. The intentional being as understood in phenomenology is, to the contrary, a “weak” being, and enlivened only when *subjectively witnessed*.

When reading an interesting book, one might forget about the time, weariness and whatever is normally connected with his/her being-in-the-world. However, the very completeness of a system of thoughts is always a hostage to its existing in the material world. Moreover, thoughts are only pregnant with meaning when bluntly contrasted with the material world. For it are not only thoughts that make up communication. The other side of speaking is no less important. The fact that we *resign* from speaking out some thoughts is as meaningful as that we decide to utter the others. In fact, the words are only of importance when uttered at the expense of something being *abandoned*. Human communication has just those two aspects: *non-being and being are always contrasted* and only then words are really meaningful and responsible.

There is no body-language, but the body is always present when *A* really faces *B* and communicates the words. Most probably, words slipped awkwardly are signs, but not universally valid. They might signify *the way* we get to know something, but not objects known. Nor are adult people to be readers of faces, albeit children probably are so in a sense. For the fact that they learn a language if the faces of their parents are seen before their words are uttered, is of pivotal importance for the responsible (meaningful) use of this language. The allegedly complete system of words must be originally “translated” or “interpreted” in the situation a vivid communication occurs. That is why, most probably, examples and images are so highly appreciated. They must, in fact, be subservient to the intellectual purport of the words spoken out. We address words to somebody. *B* is an end (of the motion as described above, and of the sound that reaches his/her ears). Now, it is a real problem not to miss the mark; i.e. to measure the material as accurately as to reach the end.

We might fall the prey of an illusion that a completeness of a system existed apart from the material world. In the light of what was stated above, it might be assumed that the very sensual perception consists in seizing particles “small” enough to “*measure*” *the motion* in the way proper to living organisms so that they might serve as elements for building any system whosoever. Otherwise, the allegedly complete system would be only “understandable” (whatever the meaning of the word) to those “initiated”. A communication requires that the material between *A* and *B* be seized as analytically as only possible. The complete system of language (only possible in science and motivating moral deeds) is unknowable unless “interpreted” into particles “small” enough to be just what they must be – the elements of the edifice about to be raised. But this means gauging them accurately enough. The elements, in turn, are naturally knowable. Nature itself – according to Aristotle – points out or at least “hints” the right direction. Otherwise, the science and philosophy in particular must have been reduced to solipsism.

In the IV Book of “Metaphysics” we are presented with a metaphysical experiment, albeit metaphysics as such can never become experimental in general. The experimental science, by definition, must be concerned with some particulars, whereas metaphysics – according to Aristotle – is the most general. The only particulars relevant in metaphysics are metaphysicians or those who try to be such. The metaphysical experiment of Aristotle concerns those (particulars) who declare their willingness for communicating words, the most precious for humans possibly included.

Experience, in the Aristotelian sense, differs essentially from experimenting (and “measuring” consequently too) in that in the former the border conditions are not set down arbitrarily; they do not depend on who observes things. The contrary is the case in experimenting. The observation of the e.g. eclipse of the sun is experimenting, because certain conditions are chosen or expected to correspond to theorems conceived previously. Now, the conditions will not be chosen in the Aristotelian experience unless, the choice be understood as made by nature, which guides our primitive cognition and endows it with the first principles of thinking. First principles are – according to Thomas – known naturally (experimentally).

Historically, it was Fichte who asked the question as to what posed an object in the presence of the subject. The solution of the problem was as uncanny and “metaphysical” as to estrange not only scientists but the philosophers ex professo, too. For Hegel resorted to the myth of the Absolute Spirit. Still, the question posed was as justifiable as understandable. Granting that experience equals experimenting it is only natural to ask what inspires humans ultimately to turn to experimenting and measuring things in the way physics does. For theories are, by their modern definition, neither ultimate nor absolutely general. Theories were what they were just because they were *some* theories.

The question seems to be all the more justified as e.g. Hottentots did not exhibit any initiative for experimenting. Why, then, did “civilized” man so? In that context, the problem of the so-called hominization was raised and the problem of how the so-called consciousness came to existence. Still, the words themselves, no matter how grand, cannot explain the situation.

Now, the solution was given in the IV Book of Metaphysics. Aristotle showed how it is possible to pass from what is directly given to a potentially complete system of things – that of the language. Everything is founded upon the possibility of forming definitions (the real ones); i.e. those corresponding to the conditional necessity of nature.

Language is a human artifact at least partially and thus has a conventional side, i.e. connected with being “handy”. If it were totally conventional, and similar to “products” provided to the free market, the validity of words would be relative and no real communication of thoughts possible.

Naming things in fully responsible manner is only possible if an elementary necessity of the elements of the statements is made out as constituted by nature itself. In the world called human or humane, the particular objects might *seem* disconnected or connected at whim – conventional in other words. Humans might simply shirk the responsibility for the words uttered. However, both human rationality and responsibility consists in ordering the objects, which otherwise might *appear* only “contingent”. For shirking the responsibility is tantamount to wiping out some undesirable objects out of the consciousness; in *eliminating them*. Now, the ordering might be understood either in broader or narrower sense of the word and the difference corresponds to that of experience and experimenting. Especially, in morals, it are not that much objects that are to be ordered as rather our relations to the objects given to us. If the relations are expected to be what they ought to, it is because a certain primitive order of things has been given naturally. The laws of nature cannot be decreed nor changed; they must be simply respected. Morals consist in multiplying the order and scientific praxis – analogically – also.

The Kantian transcendental idealism was an experimental metaphysics if such an oxymoron could be accepted after all. For it extrapolates the validity of the experimental method upon the totality of objects knowable by men. The dictates of the reason are attempts to set down the border conditions of experience (and cognition in general too). The situation was plastically depicted by Kant in the Preface to the Second Edition of Critique of Pure Reason.

Reason only perceives that which it produces after its own design; ... it must not be content to follow, as it were, in the leading-strings of nature, but must proceed in advance with principles of judgement according to unvarying laws, and *compel nature* to reply its questions. For accidental observations, made according to no preconceived plan, cannot be united under a necessary law. But it is this that reason seeks for and requires. It is only *the principles of reason* which can give to concordant *phenomena the validity of laws*, and it is only when *experiment is directed by these rational principles* that it can have any real *utility*. Reason must approach nature with the view, indeed, of receiving information from it, not, however, in the character of a pupil, who listens to all that his master chooses to tell him, but in that of *a judge, who compels the witnesses* to reply to those questions which he himself thinks fit to propose. To this single idea must the revolution be ascribed, by which, after groping in the dark for so many centuries, natural science was at length conducted into the path of certain progress. (transl. by J. M. D. Meiklejohn).⁷⁸

The “experimental” metaphysics as proposed by Aristotle is far more cautious, and the edifice of science based on the fundament proved to be firmer than the Kantian one. Experimenting (if the very use of the term should be granted) is restricted in Aristotle to one situation only, but so important that responsible for all foundations of science. The problem whether using signs is (and should be) similar to using all ordinary artifacts is tackled in the aforementioned text by Aristotle. Still, the problem whether language was conventional or natural was addressed in the Platonic Cratylus already. According to Aristotle, language encompasses both sides: there is no *real* border between “reality” and “consciousness” just because the border (if you like) is *the bridge* at the same time; it is language that is both natural and artificial; contingent and necessary; conventional and obligatory all depending on the aspect taken into account. In the Kantian text quoted above, words (used empirically) are quite similar to artifacts. They can be bought and *sold*.

An individual is free in naming a given object HORSE, PFERD or EQUUS (as long as the languages involved are known). Still, there no “freedom” and no license in changing the meaning of the words once accepted, and the knowledge of a language implies – inter alia – proper collocations. The responsibility for using words consequently is required. The responsibility *is not* subjectively motivated. It results from *the empirical* situation of communication. The consequence of using words makes the language understandable at all.

The object of the Aristotelian experiment is a man who tries (de facto) to destroy the universal validity of communication. He/she is an object put before the tribunal of the mind that he/she be forced to respond in the unequivocal way. Still, the object is special and quite dissimilar to e.g. a ball put at the top of the inclined plane used to measure the intensity of the

⁷⁸ <http://www.metaphysicspirit.com/books/The%20Critique%20of%20Pure%20Reason.pdf>

gravitational field of the earth. The ball is *absolutely obedient* to the “dictates” of an experimenter. Humans are obviously not so.

To Kant’s mind, his system was universally valid. Still, it is an unquestionable fact that some people rejected it after all. The reason why they did so is not relevant here. The bare fact must be stated first of all. Now, Kant would have been noumenally free indeed if the absolute freedom could exist in creating the human world according to the principles laid down in the text quoted above. However, the freedom was denied after all. There appeared, so to say, in the realm of the Kantian consciousness the objects “foreign” and “disobedient”. The fact was given due appreciation in Fichte, who sees a real danger for idealism in the existence of such like objects. The absolute freedom of an idealist is threatened every time an obstructing element appears. Anybody can become such an object.

The system of the pure idealism is bound to stumble upon the barrier sooner or later. The fact was given in Hegel the adequate description. The obstacle must be removed (*aufgehoben*) and Hegel believed it might be so in a constructive way for the equivocation included in the German term hints such a solution. First of all, the barrier is the materiality of the outer world (whatever the sense of the term). But subsequently *all objects* might be so, as their (human) spirituality might be questioned and doubted.

The Aristotelian experiment takes into account the autonomous nature of the objects involved. For we deal with an individual endowed with free will and the rational motivation of choices. This means that the individual *can*, albeit *does not have to* grant the conditions under which the language is being generated.

The striking feature of the modern world is the variety of tongues used ad hoc, and the astonishing demise of the variety of the *natural ones*. Every day the languages traditionally used disappear, and the natural human environment connected with them too. On the other hand, “brave new worlds” are being created and the license in doing so both postulated and tolerated. For the license is accepted to be as creative as the Kantian paradigm of science was believed to. Moreover, living in a world “created” according to one’s own devises might be supposed to be a token of liberty. But a high price had to be paid for the experimenting. Some “undesirable” objects (terminally ill, unborn) had to be removed and wiped out. Does anybody profit then? Those creative ones fall pray of illusion of being free; but no subject is eventually free from going to be some day “wiped out” of the human world in the way those handicapped have been. Paradoxically, all objects (and subjects of creativity consequently too) can be eradicated from the “human” world.

Generally, the human rational and social nature is being disregarded and disrespected. In other words: the natural in man is being severed from the rational and social in him/her, to the effect of regarding the latter as “supernatural” and demanded to be cherished as such. The simple fact has not been given due appreciation that we live in the natural world only and communication involves annihilation of the barrier that is both natural and indispensable. It can be doubted whether the annihilation is achievable in the way Hegelian *Aufhebung* was expected to be; probably, the way proposed was not constructive enough after all. The Hegelian “removal” of what causes alienation disregards the natural conditions of the human communication, because the barrier involved has properties describable in scientific terms (inertia and springiness of the air – medium – are such). Without taking into consideration the specificness of the natural environment of communication and the properties of the spatial

temporal too, no communication is possible. Perhaps, there is no inertia and springiness of the natural human environment if taken *literally*. However, the very equivocation included in the words and their applicability to human affairs is significant and deserves an adequate explanation. A state of inertia can characterize human emotions and the resilience to stress similar to springiness also. The explanation why the analogy is admissible is provided by philosophy.

It is the fact that we change our views or should be willing to, at least. If the identity of man had been constituted by his/her consciousness, the change of one's views would have required that the previous state be dismantled. Accordingly, trying to change someone's views would have been as immoral and destructive as an attempted murder. The communication, in the sense of parrhesia (freedom of speech), is not aimed at any destruction; false statements should be rejected indeed, but no man is a set of statements; the relation to the social (and to the spoken of) is sustained by an individual, but does not constitute his/her identity. The false statements, if rejected, are shown to be a burden weighing heavily upon human intellect.

The Aristotelian experiment addresses the elementary situation in which a vivid language is being born. Socratic maieutic (a midwifery) comes to mind. The object (the adversary) can destroy the situation, and the fact is plainly visible in those who devote their energy not to arguing patiently with statements deemed untrue, but to destroying the very possibility of uttering the views deemed unorthodox or undesirable. Obviously, we face here the pivotal difference between the freedom of speech (parrhesia mentioned above is – properly speaking – the freedom of the word) and the freedom of thinking. The former is always constructive; the latter might be but incidentally so.

The Aristotelian stance is realistic in that it grants that humans might not even be willing to accept the sense and the fact of the words being spoken out. On the other hand, some premises for the constructive dialogue should be laid down. The conclusions are valid for both everyday language and the scientific tongue.

The language is that of univocal terms first of all. The fact was overestimated by Scotus and the so-called univocity of being originated. Now, albeit it are signs that are required to be non-equivocal, being itself cannot be reduced to signs (“being” is a gerund, but the “is” of a statement is expressive of a judgment; of a *distance* to the signified). Being is expressed in judgments too, and the highest science (metaphysics) is the science of judgment; the so-called “separation” is its proper method. The very possibility to form both signs and judgments is connected with the human rational nature and the fact that the possibility happens to be realized is connected with human social nature. Every time a communication occurs, the non-contradiction principle is used. That the principle happens to be used to greater or lesser extent, is another matter. In fact, it is metaphysics that uses it most extensively. Accordingly, the adequate sense of being is settled in it.

It might be tempting to try and grasp the sense of being in the historical background, which was attempted by Hegel indeed. But the real history testifies to as many honest endeavors to build the human communication as many attempts to destroy the order, justice an responsibility. The latter always issued from disrespecting the laws of nature and humans consequently, too.

It is obvious that no science can exist without concepts seized univocally. There is, however, something special in metaphysics in this respect, as not that much concepts as rather *the ability* to form them is concerned therein. Thus, the very limitations of science are shown and those of the univocity, consequently too. The univocal terms are *the matter* for passing on *judgments*; and judging as such is proper to metaphysics. The method of judging, accordingly, is called *separatio*. In particular, the statements of other sciences are judged, and that is why Aristotle calls metaphysics the first philosophy. Being first, in turn, is not that much being privileged as rather being responsible for stating *the first intellectual data* of experience.

The importance of the univocity (the terms being not equivocal) has been commonly granted as pivotal for science. The only problem consists in how to understand it in terms of the general methodology of science, i.e. the limitations of science mentioned above. Statements happened to be unduly stipulated to be consistent with sets of axioms accepted a priori (Kant speaks of pure concepts), or “facts” stipulated to be subordinate and correlated to theorems. The stance seems to overestimate the role of the univocity of *concepts* to such a degree that it becomes the univocity of *being* and the *transcendent* being vanishes under the conceptual (the phenomena). According to Aristotle, the “is” of a statement should correspond to a state of matter, but no concept can *directly* correspond to a thing.

The univocity of concepts is not the univocity of being. The latter might involve determinism, as the absolute necessity of syllogisms might be copied onto the real world.

We experience the causal relations of things. They are multiplied in the whole nature according to various modes things exist. The bankruptcy of determinism in the middle of the 20th century is by no means the bankruptcy of the necessary systems of thinking. The latter exist just because being *essentially related* to the objective states of matters and this according to the scope of interest of a science. The conditional necessity of nature “hints” the possible solutions of scientific problems. Nature, according to Aristotle, would point out the direction of discovery.

Facts, as understood by Aristotle, cannot be “homogeneous” with systems of concepts (be subordinate to ideas), albeit the very systems must be homogeneous indeed. The univocity must be restricted to the systems themselves, whereas science as such is *a relative* and unilaterally dependent upon the facts. It cannot “mirror” the reality. The relation might be called the analogy, but its importance was disregarded by Scotus and those who followed. The ability to represent the objective state of matters is the proper mark of the intellectual activity, because an act of the intellect is proportioned to a fact only.

The proportion will be called a relation if the existence of a science is unquestionable (both a science and its object are “things” then). Still, the science (its existence) is a problem of its own, and if its generation (thingness) is questioned, the same science will be considered rather as *a relative*, i.e. totally (as for its essence) dependent upon the facts, and – paradoxically – devoid of its “substantiality” if not related in such a way. The relation, accordingly, is asymmetrical. The alleged border between consciousness and reality wanes as soon as the elementary statements we are *conscious of* are proved to be devoid their substantiality and unable to form an *entity* called *consciousness*. It is about spotting “particles” we are conscious of small enough to reveal the real character of science and to reject the subsistence of an autonomous being called consciousness.

The philosophical experiment carried out by Aristotle, proves the existence of something elementary in the human cognition and unyielding to be modelled arbitrarily. Such an experiment, or at least something of the sort, might be, in fact, reiterated by anybody keen on solving the problem of whence the knowledge comes. In fact, any conversation and real commutation of thoughts is such, but especially that between scientists. No doubt, it leads to the accumulation of knowledge. Thus, we are justified in putting the question, what kind of experiment (if any) occurs here.

Someone not closer acquainted with happens to be treated with some distance, and his/her knowledge checked rather than taken for granted. Now, the problem is whether communication is about “checking” and experimenting rather than about experiencing things in a special way. Obviously, the validity of a system of thoughts *might be* checked as to its self-consistency; but communication is not only so, as “the other side” of the system appears too – a person engaged in creating the univocal system of thoughts. It is far from being just the Not-I, as imagined by Fichte; an object foreign and possibly hostile, or at least competitive.

The very fact of the communication boosting the coherence of a system rather than questioning it only, testifies to that the system of thoughts checked “experimentally” is a relative. Dialogue is obviously a relation; but the intellectual purport thereof is more radically relative – its very existence depends on being related to the outer side.

No generation of the border conditions (as in experimenting) is possible here. But on the other hand, the very fact of its being impossible in humans, proves that the outer side of the given (the object of science) exists really, and is, so to say, more substantial than science itself. The real objects cannot be juxtaposed on equal terms against to what is known, nor the knowledge be as autonomous as the so-called consciousness was supposed to be. There is no consciousness as such; there are *some facts* only we are *conscious of*, if reflected upon honestly and responsibly. A totality exists no doubt; but it is the totality of a sentence only when built according to the rules reflecting both the formal and essential purport of thoughts.

The answer to the question posed by Fichte reads: there is something indeed that poses the object before the subject. It is nature itself, because an individual experiences his/her presence in the situation in which another individual and *formally equal* (i.e. equal as to his/her *nature*) is faced. The equality triggers the ability to improve a system of knowledge. The border conditions in the experience called dialogue are not generated in the way Kant imagined. The other side (Not-I) must be acknowledged to possess equal rights to generate them.

The autonomy of thinking and a license in using the language consequently too, might seem desirable. Still, the desire proves to be vain every time a system of thinking is questioned and used in the material world; is questioned as to its parts. Although a “humane” world might be desperately hankered after and the license be understood as freedom, some price is to be paid for creating that humane world. Humans will be doomed to leading a precarious existence at the border (of nature and mind) artificially created by the philosophy of subject. It is incidental only whether the “natural” or “spiritual” side would be cherished or even worshiped. Both fundamental options are only emotionally motivated, as Fichte rightly observed. Consequently, it might be believed that people are in a position to “decide” what they are and what the relation towards what they are not is. Their existence *must be incidental*

and disintegrated then, because there are things we are obviously unable to decide about. The endeavors to restore the unity and integrity of the human existence (Hegel's *Versöhnung*) must be doomed to failure, for the premises are miscarried, and the stance of the idealist philosophy of *Weltanschauung* untenable. The endeavors to defend the unity – no matter how sophisticated – are futile. The relations of the objects we speak of might be only founded on the relation to the objective states of matters, which form the world we live in. Thus, for instance, the brain processes that are parallel to the process of thinking do not prove the latter being as material as the former. Neither do they impair or threaten the spirituality of men, because the spirituality is “measured” as accurately as the motion that occurs in nature is “measured”. The measure is not imposed by humans (as Kant and Nietzsche believed) and does not need to be so. Materialism happens to be a scarecrow used by idealists so as to defend their notorious autonomy of thinking. But if natural objects are experienced, the accurate measure of nature might be deciphered with a place for human freedom in it. The “measure” is natural and bears no resemblance to the human dictates of reason. There is no language (and no dictates) of nature, but nature is intelligible nonetheless. We should not be scare-mongered by Kantians with the determinism of matter compromising human freedom. The “border” (if you like) between us and the world is natural too. Something unique occurs in it. The natural motion (and the motion of the imagination too) is so minutely terminated that the natural end of it appears. The finality of motion accounts for the authenticity of the human spiritual existence.

Husserl's objections raised against “the men of facts” stem from the fear of the consciousness being possibly absorbed by what is foreign to it. The fear would have been justified if the border between consciousness and reality existed and was, figuratively speaking, moveable towards both extremes. This, however, implies the idea of the univocity of being. The “is” as predicated of objects known is *different* from the “is” of the natural things, and neither likely to annex the realm of the other. Humans pass judgments concerning non-being too, and the verb “to be” is apparently included in the statements like: “there is lack of ...”. If there had been a kinship between the objects we think of and us (and the “border” moveable), we would become evil just because of thinking about evil. It is incidentally so only, viz. depending on whether one's will adheres to the object. Adherence might be appreciated as empathy, but it is hardly understandable what it should be in the case of e.g. a judge who is expected to pass an adequate judgement concerning a crime. Indulgence is completely *immoral* here. We know things when distanced and as far as we are conscious of them *being outside* our mind.

Both sides of the human existence and of the language consequently too are to be taken into account, as both are part of this existence. Both the durability of the human thinking is to be acknowledged and the program of Husserl's “Ideas” proves *relatively* valid. Neither, however, can the genetic dependence of human cognizance on the material sense data be denied and the stance of Empirio-criticism must be *acknowledged to some degree*. We need not choose between them two. Both are *relatively* valid, or, if you like, both are *unilateral* and to be checked as to the premises they issue from.

Apparently, a child when learning a language does not accomplish the eidetic reduction as demanded from a scientist by Husserl. However, a knowledge is obtained. Language might be *learnt* by children, but there is no essential difference to some being

learned and commonly acknowledged as specialists. The process of *learning* is as common as deserving an elucidation.

Let us resort a simple example. Imagine you find notices written down some 30 years ago. The handwriting changes considerably during the period. Notices might appear illegible even for who took them. Now, where is the *objective border* that accounts for a line drawn on the paper *ceasing* to be a sign and *becoming just a stain* of ink? Is there a definite moment in which the line becomes sign, or conversely, ceases to be what it was intended to be?

The answer to the question seems to be plain. It are *proportions* of the lines and minute enough that account for a line being possibly deciphered as a sign. Now, the more accurate the proportion, the more accurate the sign is. Should a thought written down be banal, the notices might be written down slovenly. The further we depart from the banal, the more accurate and minute must be the words spoken out or written down. The accuracy accounts for the autonomy of the human spirituality and thinking.

Some proportions are seized in mathematics too. But they are only proportions of what is accidental to objects (quantity) and, consequently, the very nature of the objects is not regarded thematically. The nature of the objects, however, must be elucidated so that a firm basis for science might be given. This, in turn, is impossible without using the conceptual language and defining objects. The fact is quite plain. In a handbook of mathematics, mathematical objects are presented. However, the more abstract and sophisticated the ideas, the more nagging the need for *connecting them* and ascribing to *what* they are concerned with. This, however, cannot be done without a conceptual language. A handbook of physics can be written in e.g. English. But that the book might be *precisely* translated – say – into German, precise *definitions* of words used there are necessary. Perhaps, there is no language of nature and translatable into the tongue of a scientific discovery, but the tongue must originate from the immediate contact with nature, nonetheless.

The cognitive relation we have been speaking of might be pictured as a “line” on which both correctives (*T, D*) of a fact are placed and the observer (*R*) too. If the line *TDR* is a straight one, the adequate state of matters is grasped. The example may be, to be sure, defective as no locality in the cognition occurs.

The sphere of pure thinking was called by Scotus the intentional being. It was the “secondary object of the divine intellect”. The possibility of being was meant, and, consequently, the possibility of creating the world. At this point, the interests of the theologian and the metaphysician meet. The problem is that of determining and defining the possibility in question; defining it, perchance, even peremptorily. In this context, the problem of the omnipotence of God might be touched upon (STh., I, 25, 4 ad 3). The problem, if seized in theological teems, might be that of whether the past events might be rendered non-existent by God. Thomas answers with no, and there were some important reasons.

The problem might be, more generally, that of the relation of what is possible to what is necessary and the philosophical problem of the relations of facts (possibly deemed

contingent) overlaps with it to some extent.⁷⁹ The problem of the nature of the factual is involved. This problem was tackled in the Third Way of Thomas.

Thomas says that the omnipotence of God encompasses everything that includes *ratio entis*, i.e. what makes being what it is. The omnipotence is, so to say, “restricted” by the non-ability of undertaking absurd actions, and in particular those which would have annihilated the past events. There is a special relation to the past included in *ratio entis*. In Aristotle, science grasps the necessary relations of things. Its subject matter is what proved to be existent by the fact of having been existent in the past – τὸ τί ἦν εἶναι. The essence of a thing, from the logical point of view, is *what a thing is* – τὸ τί ἐστίν. For *what is* (τί ἐστίν) is included therein. Now, when describing a thing from purely logical point of view, we put aside, at least provisionally, the problem of its existence. However, science as such cannot abstract from existence (and logic is rather subservient than autonomous in this respect), otherwise the science would be objectless. Therefore, the real existence of the thing and unchanging one is the subject matter of the science. That is why it includes the intriguing *praeteritum* ἦν of the verb “to be” εἶναι. Being, in turn, is apparently the most important philosophical notion. Five terms might be listed leading to the philosophical notion of essence: 1) ἐστίν; 2) τί ἐστίν; 3) τὸ τί ἐστίν; 4) εἶναι; 5) τὸ τί ἦν εἶναι. The last one corresponds to the scholastic term of the transcendental RES. (Transcendental is what can be attributed to everything that exists). RES denotes essence as such, but a specific essence can be named analogically. We can speak about this or that essence: τὸ ἐπιφανεία εἶναι, τὸ λευκῶ καὶ λείῳ εἶναι – the essence of the plane; of the white; of the smooth, etc. We can speak about the essence of anything at all τὸ τί ἦν εἶναι ἐκάστω. (Metaph., VII, c. 4). In each case, the possibility of what is, is included in the notion; i.e. the relation of what is becoming to what exists, and this out of necessity.

According to Thomas, *ratio entis* is what excludes the coexistence of being and non-being. The impossibility of that coexistence is grasped in the first principle of thinking – the non-contradiction principle. It is due to the non-contradiction principle only that the objects of science are necessary; i.e. the phenomena considered in a science co-exist out of necessity; are real, in brief.

No matter whether Thomas’s or Scotus’s notion of the intentional being is accepted, the problem as to what can possibly exist remains open. But the difference consists in that, according to Thomas, the possibility of being is *relative only*: it is the possibility of the coexistence of phenomena empirically given first of all. Scotus, to the contrary, focuses on the *absolute* possibility. The Thomasian possibility might gradually encompass vaster and vaster swaths of human rationality so as to reach eventually to the coexistence of the totality (the world) with its Transcendent Cause. Still, we depart from what actually exists and is

⁷⁹ Probably, Scotus’s univocity was not absolute after all, because there was an Outer Side nonetheless, and perhaps most important for a theologian. This, however, cannot be demanded to be taken for granted by a non-theologian.

empirically given. In the philosophy of nature, the factual existence of the world directs the subsequent steps of inquiry.

Most probably, the world could have been different to that we see. However, the *general tension toward being* is common to the world as such (which is somehow connected with the idea of all possible universes), and the subject matter of metaphysics includes the notion. In this case, not that much *possibilia naturae* as rather *possibilia simpliciter* are faced. Albeit the *nature* of what is possible in this (general) way is inconceivable to us, the “possible” worlds would be marked with the same (general) trait of tension towards being we observe in nature. Although this “possible” is not the subject matter of the human science, it is the object analogous to those normally seen in the material world. Moreover, Thomas *as a philosopher* states the positive existence of the possible worlds and names them accordingly. In Bible, they are called angels and albeit a believer (and everyone thinking to any extent too) is assisted by them on the way to the Ultimate, a philosopher must put up with a sheer fact of their nature *intending* existence in the way analogous to all natural beings. Thus, the Thomasian notion of the intentional becomes clearer. Our (human) *being assisted* so means the possibility of our rational existence open for spiritual existence (by participation). Although the nature of those assisting is unknowable, the *mode they exist and act; i.e. intend being* is known to the *natural* mind. Albeit more angels could have existed and different to those actually existing, the way we (humans) understand anything at all (are assisted on the way to the Ultimate) would have been *different*, and the human rationality and metaphysics, consequently too.

The asymmetrical relation of the world towards the First Transcendent Cause becomes visible. The relation appeared to some impossible since the objects thereof seemed disproportionate: the absolute perfection of the Transcendent and the imperfection of the created made for the infinite distance. Thus, no rational prove of existence of God would have been possible; i.e. the proof that would state that we *must accept* the existence of God, if the intellect is used to the end of its possibilities. As the validity of the Aristotelian scientific demonstrations consists in grasping the necessary correlations of scientific facts, no absolutely valid demonstration of the existence of God would have been possible, as no necessary relation of God to the “contingent” being is possible. In fact, some philosophers put up with stating the reasonableness of the statement “God exists”; i.e. His existence being admissible and possible instead of proving that it is necessary.

Now, the Thomasian proof is necessary as demonstrating not that much the necessity of the object of creation as rather the necessity of the *mode* of creating. The necessity is included in the notion of *ratio entis*. God can create better worlds or abstain from creating them at all. However, granted that He created anything at all (granted that something really exists this or that way), it is necessary to admit Him having done this perfectly, i.e. in the way behooving the Perfect Being. The way God acts must be perfect. The object of His action need not be so. Now, the necessity of the philosophical demonstration of the existence of God is based upon the way God acts.

In philosophy, the co-existence of objects; their conditional necessity is tackled. Eventually, and if the inquiry is diligent enough, we might arrive at stating the conditional coexistence of the totality with its Transcendent Cause. The existence of God as such is as non-cognizable to us as His essence is. If the existence of God is demonstrated in philosophy,

it is not the existence as taken *separately* and apart from what is originally cognizable to us. Properly speaking, it is rather the coexistence of the world with its Outer Side than the pure existence of the latter that is known. In philosophy and in all sciences in some respect too, the coexistence of objects is stated. Now, philosophy differs in that it searches for the “existential counterparts” of objects further and more radically. Of course, the task could be considered too ambitious and the objective despaired to obtain. But, it is pusillanimity that makes humans despair, whereas humility makes them open-minded.

Contrary to Scotus, Thomas assumes that the medium of philosophical cognizance of God is determined in the way analogous the ordinary motion is determined by its end. In metaphysics, the medium of discovery is what exists along with the mode of its existence (*ratio entis*). For all a theologian might desire, it is impossible to turn the intellect to the End directly. Scotus expected too much of the human intellect. The will, to the contrary, must do so indeed, for we direct out affections to God as He is in reality. To be precise: the act of will is *mediated* after all, at least in the sense of being preceded by the act of the intellect. Nobody desires what he/she does not know. Accordingly, human hopes turn to the future, but paradoxically, for them being able to do so, the intellect must turn to the “past”, i.e. to what predicts the End in the real state of matters. Thus, the notion of the “past” is to be examined more closely and more analytically than it usually is.

The common sense notion of the creation involves a respect to the past. The beginning of the world might be imagined as a moment it commenced to exist. Moreover, the first and perhaps the most important notion that appeared in the Greek philosophy was that of ἀρχή, which means both what precedes in time and space, and a more abstract notion of principle. The latter was elaborated departing from the former. Now, the Aristotelian “philosophical past”, mentioned above, was just more analytically seized. The subject matter of science included the very notion of this past.

Contrary to that of animals, which live in the present time, the human cognizance consists in harking *back* and tracing *back* what makes the perceived phenomena intelligible (τὸ τί ἦν εἶναι). Now, the only problem consists in “how far” back we reach. The possibility, as has been mentioned, constitutes the realm of the human rational existence.

According to Aristotle, both existence and the mode of existence interweave so as to build the tissue of nature. Science consists in matching the actual existence with what is naturally related to it. Existence is not as contingent and accidental as Avicenna imagined. For Avicenna, the incidental (existence) could be dropped in science and its edifice supposed to mirror pure essences (opposite to their incidental existences). If science had had to mirror the essences, determinism would issue, because syllogisms used in science are necessary, or the very cognoscibility of (the “contingent”) nature denied.

Being related as stipulated for science consists in its being in a definite proportion to a thing understood. Nobody was as insane as to deny the necessity of the sensual perception for human understanding. The problem consists in how closely they are related to each other. Scotus (Hume, Leibniz and others) claimed that the sensual only *occasions* the intellectual. Thomas claimed that the sensual *triggers and causes* it. Thus, everything depends on whether the former precedes the latter causally (Thomas) or temporarily only (Scotus). If we are to account for the *present* state of knowledge we must turn back to what *conditions* it, after all.

The past is obviously such, but might be understood more or less abstractedly. The way we hark back to the “past” is to be examined more closely.

According to Aristotle, it is indispensable for science to exclude the elements foreign to it (Anal. Post., I c. 7, 75b; c. 9, in princ. et 76a). In other words: it is necessary to *reflect* on what makes the conclusions of reasoning homogeneous with the premises (c. 9, in calce).

It might be tried the other way round. Some believed it possible to accept a system of axioms a priori and to proceed to conclusions. Instead of the conditional necessity of nature that *conditions* the necessity of scientific statements, either the determinism of matter was accepted or, as said, the probability expected of science only. No doubt, the margin of uncertainty must exist. The only problem is where it is to be placed.

Two objects *essentially related* might be described by their coordinates; e.g. A (x_1, t_1) and B (x_2, t_2). Now, it is about excluding the third one and foreign; able to “shift between” these two so as to render the scientific facts impossible or even oxymoronic.

The natural motion proceeds into the future with “small steps” only as described by the special theory of relativity. The problem of experimenting consists in that we are organically unable to copy that proceeding if using artifacts (apparatuses). The experimental “steps into the future” are never “small enough” that they might reproduce the objective state of matters. They cannot reproduce the natural manner of being and acting. The wave function describes a particle adequately. However, we are unable to *measure it* in such a way that the wave function be not disturbed and collapse, and this because of the *foreign* element being present; i.e. an apparatus made artificially. The apparatus is apparently a macroscopic object and no “small enough” to cease what it is – an element foreign to the natural state of matters. Every observation (experimenting) leads to the collapse of the wave function. In consequence, nothing save probability is obtained of a particle being in a given place. There is no definite relation of apparatuses to the natural objects.

It seems to be essential for experimenting to look into the future after all, and to form predictions. However, the latter must be marked by the aforementioned uncertainty and the errors of measuring. The experimenting subject is not adjusted to the object known minutely enough. After the principle of indeterminacy was discovered, the fact that experimenting must be so came to light.

However, the definite relation between the natural knower and the thing known must exist after all. Before commencing experimenting, a special relation must have preceded; a relation of the natural cognizant to the naturally cognizable. Otherwise, the idea of experimenting would not have been invented. The border conditions of experience are settled by nature. The fact is plain; the human eye is natural and the color too. To the contrary, the lenses in glasses are apparently not so. These “natural” lenses are adjusted to the natural seeing in the way impossible to reproduce by artificial means. Regarding the human eye as an apparatus is as naive as ascribing human features to computers.

Accordingly, the experience consists rather in *re-flecting* than in looking into the future. In natural experience, we are able to grasp the definite relations of objects, but it is impossible in experimenting. For a given B (x_2, t_2), we search the immediate A (x_1, t_1). The inverse proceeding results in that the some C (x_3, t_3), D (x_4, t_4) must “shift” between A and B – out of necessity.

Science cannot dispense of the necessity of statements. A relativist claims what he/she deems necessary too, for the *absolute validity* of the statement: “everything is relative” is stipulated. Still, all guises of relativism are as baseless as impossible to prove, whereas the Aristotelian paradigm of science provides the safe foundations and precludes the errors otherwise perhaps unavoidable.

The problem of contingency was plainly illustrated by Thomas. For every cause (a thing endowed with the power to trigger effects) it is possible to occur another one that thwarts the efficacy of its action. The philosophy of nature processes not from the cause to effects (as mathematics does), but conversely: from effects to causes, and this makes for the impossibility of foreign elements to occur that could impair the causal relations. The elementary *reflection* is meant. There is no need for it in mathematics, as the subject matter thereof might be regarded separately from the natural things.

Another paradigm of science was believed to be efficient in modernity. According to Bohm, the scientific statements are valid provisionally only and hopes as to the interminable development of it are to be fostered. Those hopes, however, do not seem to be substantiated in the real world. Nothing can guarantee that concepts used an hour ago are the same as those used now. If the purport of thoughts is evolving incessantly, it is not even possible to finish a sentence after having it started, for it requires a certain spell of time to finish it after all. Cratylus (Heraclitus’s disciple) admitted the fact openly and resigned from uttering words entirely. Thomas called it the extreme insanity, for resigning from communicating thoughts is insane obviously enough. Still, the very consequence of Cratylus’s reasoning is decidedly to be appreciated.

6. Analogy: the relation of the judgment to the spoken and to causes

In Chapter IV. 1, the role of analogy in the first philosophy was assessed. Although the scientific status of metaphysics happened to be questioned, and the name of the first philosophy denied to it, the role of the first science is usually acknowledged. For Kant, is was his Critique meant to be the this science. In the Preface to the Second Edition to the Critique, Kant analyses “critically” the problem of the necessity of scientific statements. Equipped with the armor of “categories a priori”, a scientist was believed to expand the scope of the applicability of scientific ideas. However, Kant failed to answer (or even possibly spot) the question whence and how that scientific language *originated*. A child, obviously, does not avail him/herself of the categories so accurately listed in the Critique when learning a language. What, then, motivates him/her to grasp *the necessary* when existing in *the contingent* world? For it seems obvious that our existence in the world is not necessary. What accounts for the interest in the necessary in those who live in the world bereft of the necessary; in the world of contingent events?

Any language, before having been learnt, presupposes a natural faculty both susceptible of the necessary (prone to grasp it) and devoid of it. This must hold true for e.g. the language of the Kantian Critique too. Analogically, the supreme science must presuppose

a science on nature. (Kant acknowledges the fact in his own way). If Physics exists (the nature we live in exists really), Meta-Physics can exist too (and deign the name of the first philosophy). But method of the science on nature must not be experimental, nor the science identified *unreservedly* with physics. A youth learns to experiment (usually not before in a college), because he has experienced nature in the way it has made him interested in nature in general, and in a special mode of thinking connected with experimenting in particular. Experiencing precedes experimenting. Kant confused the two notions. In reality, the universal concepts originate from the contact with nature (are not given a priori).

The bulk of the argumentation of the kinetic proof (the matter thereof) is presented in Aristotle's Φυσική (Physics). Thus, the persuasiveness of the proof shared the fate of the Aristotelian scientia naturalis; the science rejected in modernity, because the only method deign of the name of being scientific had been believed that of mathematics and exact sciences. No formalism other than that of the latter was accepted. It has already been stated that the formalism must be insufficient anyhow. Still, the fact is to be argued and approached from as many points of view as many the ramifications of the modern paradigm of science are. This will be done throughout the subsequent pages of the work.

Every universal, according to Thomas (STh., 13, 5, c.), must imply the notion of a cause, for being a cause is tantamount to the ability to propagate its own form. This is the case with natural begetting, but the spiritual one (e.g. in the human family or in school) is analogous. For the more matured an idea in our mind the more nagging the need for exteriorizing it. People are mature enough to set up a family not only in purely biological sense. The emotional in them is an important gauge of their maturity also, but first of all, it is the volitional which is constitutive of a community. A new life can be fostered in the realm created before by a common intention of a man and a woman about their shared future. The shared intention of the same values (moral laws) precedes a free election of a person (the espoused). The same holds true as to "the human family" and any society too. The intention of the end possible to realize precedes free elections. Any human activity (the scientific one included) shares the same characteristics of being both free and oriented toward an end (at least an imaginable one).

Thus, a distinction must be drawn here. If thoughts are intended to be shared with others, the intention might focus either on the one who shares them, or those who are expected to accept them and hoped to profit. Nietzsche spoke about a compulsion for exteriorizing some ideas, having in mind, apparently, the former. Indeed, some ideas are so poisonous that it might seem unbearable to consume them in solitude. The burden of the absurd might be believed to be alleviated by imposing it on the shoulders of others. It was traditionally called a scandal. Ideologization is its modern name. Of course, the burden cannot be alleviated. To the contrary, the more tried to, the harder it becomes to those who scandalize the others. Natural and spiritual begetting, to the contrary, engenders peace. A form propagated this way rests in the recipient. This form can be realized and the intention may come to fulfillment. Both right and wrong thoughts might be pregnant with meaning. Socrates occupied himself with a "spiritual midwifery"; he helped to come to light thoughts matured in his disciples' minds. But the problem is that some concepts might prove miscarried nonetheless. Some "radical" judgments urge the "radicals" to exteriorize them. There is something appalling about the persuasiveness of evil. The very shift of the meaning of the

English WICKED is significant. It is no more vile and immoral, but interesting and attractive instead. This dynamics of evil happens to be mirrored in the everyday language. The ideas might be harbored in our minds or find *rest* in them; the problem is how deep the rest is and how safe a fulcrum of the activity it triggers.

The comprehension implies the immobility of mind and the certitude of knowledge consequently too. But in modernity, a sheer probability was stipulated as the mark of sentences pretended to be scientific. The cognition would be approximate to the extent of how many objects were researched. Theoretically, the possibility of the cognizance of the whole universe was not precluded at least for an intellect coextensive to the world (should the world be finite in that respect). Thus, the idea of the Great Mathematician, a deity endowed with the mind similar to the human one but more “capacious” appeared.

Should the language be in a definite relation to the world after all, it must be rather related than “coextensive” to it: to bear upon it another way. The language of numbers and of ideas deemed virtual, in the sense of being endowed with the ability inherent in them to expand all by themselves and engage humans in the process, must be replaced by the language traditionally called conceptual and similar to the everyday one, because being *personally* created. Moreover, the very relation of the mathematical ideas to the world must not be described in quantitative terms. Generally, the unity of the definitions must be neatly distinguished from the unity of numbers. The distinction was blurred by Avicenna and those who followed suit.

The problem consists, as was mentioned above, what (if ever) is the object of universals. In classical philosophy, both universal qualities and quantities too are accidents of subjects (ὁποκείμενα); and the subject matter of a science is meant to be a subject as well as what sustains the accidents (as human understanding is an accidental to the human mind indeed). The notion of the subject of a sentence (the logical one) is secondary only, as far as addressing a *subject* it corresponds to. The problem consists in the original meaning of the word SUBJECT being rejected in modernity. For if bereft of a fulcrum, accidents would have evolved and the science be as evasive as the mythical Proteus. Plato’s theory of subsisting universals was an excessive reaction for relativism espoused by the sophists of his time.

Aristotle distinguishes the subject matters of sciences not according to the extent (or multitude) of objects concerned, but rather according to the methodological aspect proper to a science and verifiable objectively. Thus, the borders amongst the sciences could not be shifted and science as such is unable to evolve monotonically. Ideas are “homogenous” (univocal) within a redirected scope of a particular science only.

According to Aristotle, scientific terms include either *causa univoca* or a cause more perfect than the effects produced by it. According to Thomas, the non-univocal cause accounts for the adjustment of the univocal cause to its proper effect. The univocal is researched by Physics and morals too; the non-univocal (analogous) – by metaphysics. As for the latter science, a certain reason (as stated above) existed to ascribe the analogy to it as the proper method. According to Thomas, *causa equivocata* (i.e. *analogica*) exceeds the perfection of its effects. This applies, first of all, to God. Eventually, the univocity of concepts must yield to the analogy of being; for no causes would have existed if the First Cause had not imparted the ability to spawn effects to some beings. The fact is not that much stipulated as rather ultimately concluded (from effects naturally known); for should the creating be

envisaged from the other side (its Cause) and not retraced in nature, the method will be proper to theology (of the Revelation).

Although the univocity of terms is indispensable in science, the very terms must be assessed, i.e. judged as to their objective validity. Now, the method proper to metaphysics is judging in general. This science is most general not in the sense of being most extensive (for in this case being would be as common as vague, as rightly observed by Hegel), but general in the sense of passing judgments on whatever is otherwise possibly deemed obvious. Moreover, the very equivocation of terms (deadly to science) will issue, should the science be bereft of what makes the meaning of its terms stable and consistent (the fact acknowledged even by Kant). Consequently, after having rejected *judgments* (proper to metaphysics) all statements would appear “provisional” and, in fact, deprived of meaning. The foundations of science would be undermined too. It would have appeared that statements are universal extensively only and proportionally to the scope of the interest in reality. From the point of sheer formal logic, concepts might be understood in such a way indeed, but logic is not that much an autonomous science as rather a discipline required in reasoning.

Thus, the relation of the first science to the others; nay, the problem of the very existence of the former, becomes clear. The problem, as has been said, is not that of a horizon and of the scope of science literally speaking. For it is not the function of the science that must be enhanced (as in Kant), although things can be described as *more or less* functional indeed.

Historically speaking, it was John Duns Scotus who enhanced this aspect. For a theologian metaphysics was *needed*. The direction every human cognition was going to advance to was projected, and advancing proportional to the “amount of being” to be found in the ideas used by humans. According to Scotus, ideas were virtual in the sense of being possibly extended to the otherwise until unknown. Some ideas made humans, or were fertile enough to spawn the progress in the direction set down in advance. Still, once the theological context had been rejected, the naked philosophical premises appeared free to issue the conclusions quite unexpected previously. It was believed that humanity advanced towards explication of the virtualities included in the ideas endowed with the magic power to make people what they were expected to be if the ideas were adhered to. In fact, they appeared to be but simulacra. Normally, it is impossible to elicit a predicate from a word other than suggested by the ordinary collocation rules. But something decidedly more was expected of them.

Theology was, according to Scotus, the first science. The statement might be true, but the problem is that it cannot replace the first philosophy by the same token. It cannot become metaphysics. Moreover, for us, understanding what theology *should be*, is impossible without knowing metaphysics first. According to Thomas, there are two “theologies”: the one is natural and possibly known so by humans, the other is “the theology of the Sacred Scripture” and, although its conclusions are wrought by humans, its principles are given supernaturally by God himself. The gift is called the Revelation. The Word of God bears a certain (phenomenal) resemblance to the words of men. But it originates from the Principle completely dissimilar to those naturally experienced by us in the material world we live in. Thus, the very nature of the words used in the Sacred Scripture differs to that of the words

elaborated by mere afford of human mind. The categories we use normally cannot be “transcendent” or “supernatural”.

In his *Summa Theologiae*, Thomas addresses the problem “Whether in Holy Scripture a word may have several senses”.⁸⁰ He answers with yes, but this compels him to reply to another question: whether equivocation might issue then and detrimental to the clear understanding of the Scripture. Normally, equivocation begets confusion (e.g. RAM predicated about the human device and an animal). A consequence is demanded of humans in naming things and a necessity in the mode of speaking too: after taking into account no matter how contingent aspect of the world, we must turn to the same object distinguishing the object from what it is not (using the non-contradiction principle). Things are given to us *in the way* we cannot change. But they are not given to God in this way; He is rather a Giver than the one who accepts a gift. One and the same word of God might have several meanings without impairing its cognoscibility in the least.⁸¹ Perhaps, it only poses *a challenge* for human mind and incomparable with other words normally used. It is a sole prerogative of God to use language in this way.⁸² No human language can imitate it. We cannot extend the applicability of ideas using some “transcendental” or “supernatural” devices.

Kant attempted what he call “transcendental deduction of categories” fertile supposedly to extend the validity of scientific statements. However, not even Kantians were dearly attached to those twelve elaborated by their Master. To the contrary, after Kant, philosophers felt free to “devise” some “categories” innovative and virtual. In languages, some “virtualities” were believed to exists, although previously assessed as sheer equivocations.

Sometimes, the equivocation used sounds bizarre. Derrida juxtaposes the English “gift” with the German “Gift” and tries to gather some conclusions from the similarity. “The very self-identification of me as a donor, of the gift as a gift, and the receiver as a receiver

⁸⁰ Sth., I, q. 1. A. 10, c.

⁸¹ Reply to Objection 1. The multiplicity of these senses does not produce equivocation or any other kind of multiplicity, seeing that these senses are not multiplied because one word signifies several things, but because the things signified by the words can be themselves types of other things. Thus in Holy Writ no confusion results, for all the senses are founded on one — the literal — from which alone can any argument be drawn, and not from those intended in allegory, as Augustine says (Epis. 48). Nevertheless, nothing of Holy Scripture perishes on account of this, since nothing necessary to faith is contained under the spiritual sense which is not elsewhere put forward by the Scripture in its literal sense.

(Literally translated by Fathers of the English Dominican Province).

<http://www.newadvent.org/summa/>

⁸² Ibid. In corp.: The author of Holy Writ is God, in whose power it is to signify His meaning, not by words only (as man also can do), but also by things themselves. So, whereas in every other science things are signified by words, this science has the property, that the things signified by the words have themselves also a signification.

destroys the gratuity of gift-giving....”.⁸³ But those two are not, apparently, etymologically connected.

Similarly, Hegel (ab-)uses the equivocation included in the German *Aufhebung* and *Erinnerung* so as to “elicit” a deeper meaning issuing supposedly from the ideas “virtual” in this way. The same was the case with the Heideggerian *Lichtung*. But philosophers ex professo have been imitated by journalists. Every now and then, some collocations happen to be presented and deemed profound just for being equivocal. Words are thought to be endowed with a magical power to multiply all by themselves, only “witnessed” by humans therein. Moreover, not only words were “pregnant” with meaning this way: but e.g. with emotions and suspicions also.

Something of the sort occurred in antiquity already. In fragment 48 of Heraclitus we read: τῷ οὖν τόξῳ ὄνομα βίος, ἔργον δὲ θάνατος. („The bow is called life, but its work is death”). In the word “bios”, the stress might have put on the first syllable and it means life then, or on the second and then it means: “a bow”. Georg Curtius does not see a common root here.⁸⁴ If there is a coincidence, its use equals manipulating with language. Significantly, Heraclitus was a monist and denied the validity of the non-contradiction principle. The kind of extension of the validity of the statements might have been attractive for some, but it is especially in modernity that such a “theology” tries to replace the supreme science traditionally called metaphysics.

Although metaphysics cannot be reduced to mathematics (or fashioned after the model, as Kant seemed to imply), a “philosophical equation” might be formulated in it nonetheless. The analogy of proportionality is expressed in the formula:

$$A/B=C/D$$

Now, we would like to call A and B respectively: the moving and the moved; and the C and D respectively: the verb and the subject. Although, in mathematical equations, variables can be regrouped, and the naked C or D placed on the right side of the equation, the “philosophical equation” does not allow such a proceeding. It is impossible to isolate the bare C and try to settle what it “denotes”; but it is impossible too, to place the bare D there and to seek for the sense of being (verbs are names of being indeed) without referring this sense to a “what-ness” of a thing its being actuates. Moreover, albeit both sides of a mathematical equation can be multiplied by a constant or a variable, the “philosophical” one cannot be so: the definitions elaborated in Physics are peremptory and not “multipliable”. Human nature is defined so, and no other feature (the specific difference of man) apart from rationality can be regarded as definitive thereof, or more comprehensive than this.

Moreover, the “=” of the “philosophical equation” exists on its own. At the border of the natural world and the “world of ideas” a mental concept, devoid of any verbal clothing and motivating any forms of language appears. According to both Thomas and Aristotle:

⁸³ (J. Derrida, *Given time*, Chicago University Press 1992, p. 23); Derrida, J. *The gift of death*, Chicago University Press, 1995

⁸⁴ G. Curtius, *Grundzüge der griechischen Etymologie*, Leipzig 1866, s. 418.

Spoken words are the symbols of mental experience and written words are the symbols of spoken words.⁸⁵

A mental concept is begotten in our mind, every time abstraction of sense data is accomplished. It is *something* indeed. Thus, neither parallelism nor distance exists between consciousness and reality, but causal relation instead.

The distance might be understood as an attitude. Now, the absolutized theory of univocity (the univocity of being) makes this relation incomprehensible. There was a border raised between “consciousness” and “reality”. The only problem consisted in where the border was to be placed; whither it was to be shifted; how, “humane” and free the human existence might be projected to be. The problem is, in Fichte, of where *I* stumbles upon *Not-I*. Where humans stumble upon the crude state of nature. Or: where those civilized stumble upon the uncivilized ones (e.g. “fundamentalists”).

It goes without saying that individuals might feel alienated or estranged from the world they live in. Some situations might be *perceived as unbearable*; and alienation assessed as the main threat posed to humanity. It was the case with Edmund Husserl.

So that the alienation might be abolished, Husserl postulated a “return to reality” (*Zurück zu den Sachen*). But not things known abstractedly and definable were meant then.

Thus, we see that consciousness (mental process) and real being are anything but coordinate kinds of being, which dwell peaceably side by side and occasionally become “related to” or

⁸⁵ Aristotle, *On Interpretation*, Translated by E. M. Edghill.

<http://classics.mit.edu/Aristotle/interpretation.1.1.html>

Aristoteles, *Periherm.*, c. 1, 16a 3-4: Ἔστι μὲν οὖν τὰ ἐν τῇ φωνῇ τῶν ἐν τῇ ψυχῇ παθημάτων σύμβολα, καὶ τὰ γραφόμενα τῶν ἐν τῇ φωνῇ.

De veritate, q. 2 a. 1 ad 3. Ad tertium dicendum, quod cum nomina sint signa intellectuum: secundum hoc se habet aliquod nomen ad totalitatem alicuius rei significandam, secundum quod se habet intellectus in intelligendo. Intellectus autem noster totum Deum intelligere potest sed non totaliter, totum quidem quia necesse est ut de ipso aut totum intelligatur, aut nihil, cum in eo non sit pars et totum; sed dico, non totaliter, quia non perfecte cognoscit ipsum, secundum quod ipse est in sui natura cognoscibilis; sicut ille qui hanc conclusionem diameter est asimeter costae, cognoscit probabiliter, ex hoc scilicet quod ab omnibus ita dicitur, non cognoscit eam totaliter, quia non pervenit ad perfectum modum cognitionis quo cognoscibilis est: quamvis totam cognoscat, nullam partem eius ignorans.

De veritate, q. 4 a. 5 c.; Super Sent., lib. 1 d. 22 q. 1 a. 1 c.; Summa Theologiae I, q. 13 a. 1 c.; Summa Theologiae I-II, q. 7 a. 1 c.; Summa Theologiae I-II, q. 25 a. 2 ad 1.; Summa Theologiae III, q. 78 a. 5 c.; De veritate, q. 2 a. 1 ad 3.; De veritate, q. 7 a. 1 ad 14.; De virtutibus, q. 1 a. 11 co.; Quodlibet VIII, q. 6 a. 4 c.; Quodlibet IV, q. 9 a. 2 c.; Compendium theologiae, lib. 1 cap. 24 c.; Compendium theologiae, lib. 1 cap. 37 c.; Sententia Metaphysicae, lib. 5 l. 5 n. 17.; Sententia Metaphysicae, lib. 6 l. 4 n. 2.; Expositio Peryermeneias, lib. 1 l. 3 n. 9.; Super De causis, l. 6.

Aristoteles, *Periherm.*, c. 1, 16a 3-4: Ἔστι μὲν οὖν τὰ ἐν τῇ φωνῇ τῶν ἐν τῇ ψυχῇ παθημάτων σύμβολα, καὶ τὰ γραφόμενα τῶν ἐν τῇ φωνῇ.

“connected with” one another. Only things which are essentially akin ... can become connected in the true sense of the word, can make up a whole.⁸⁶

As, however, it cannot be denied that languages (at least those natural ones) appear and die, and the forms and borders of them, consequently, shift, it must be assumed that the potential realm of the human words “reaches into infinity” (Ideas, § 27) (is indefinable), and no natural borders thereof exist just as there are no natural borders for an infinite set of numbers; for “any formal essence has its formal (mathematical)” extension (§13).⁸⁷

The consequence of this primacy of language is an idealistic stance, viz. – as was noted – bracketing the meaning of the traditional term of *res* (thing):

Immanent being is therefore indubitably absolute being in the sense that by essential necessity immanent being *nulla „re” indiget ad existendum*.⁸⁸

The Husserlian life consists in living through what is close to consciousness, or – so to say – in “domesticating the reality”. The extension of the scope of the interest of phenomenology shifts and encroaches into what was before named crude “nature” (annexing it). The actual border of the extension is the actual border of phenomenology.

The world of transcendent “*res*” is entirely referred to consciousness and, more particularly, not to some logically conceived consciousness but to actual consciousness.⁸⁹

The simplest way to illustrate the difference between the univocal and equivocal is, according to Thomas, to distinguish between the animated and unanimated body. Only the former is a body, properly speaking, whereas the latter is as equivocal as RAM predicated about a human device and an animal. Now, according to Hume, ideas are “weak” copies of the vivid impressions, and the latter cease to be vivid just in the moment they enter “consciousness”. But Hume was a “realist” (or even a “naturalist”). For an idealist (for Husserl) it was “consciousness” that was supposed to make humans what they are. *Er-leben* was definitive of *Leben* and the former to be identified with experience (reduced previously by Kant to experimenting). Perchance, at some point of (pre-)history (some thousands years ago) humans ceased to be what they were supposed to have been, and humanity emerged from the bestial past. The whole tradition of the modern idealism opts for the “equivocation” existing between the crude state of nature and “consciousness”. Nature only occasioned the concepts about to appear in the mind. But not only Neanderthals were “crude”. Every swath of human existence untouched by the law-giving power of the “consciousness” was deemed such.

⁸⁶ Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy – First Book: General Introduction to a Pure Phenomenology, 1982 [1913], trans. By F. Kersten, § 49; p. 111,

<http://dhsprory.org/kenny/PhilTexts/Husserl/Ideas1.pdf>

⁸⁷ Ibid.

⁸⁸ Ibid., p. 110.

⁸⁹ Ibid.

Aristotle accounts for whence the purport of our thoughts comes. For a relation (a real one) exists between us and nature. Contrary to the German idiom, which suggests that something “stands before” the tribunal of the mind (Gegen-stand), English suggests the realistic stance espoused by Aristotle. There are *subject* matters of sciences and the notion of subject (ὑποκείμενον) is that of what sustains *natural properties*, i.e. what subsists all by itself. Normally, and as supposed in everyday language, *something* exists before being known. Similarly, the conceptual language (especially Greek) is variegated according to various phenomena – appearances; but *what appears* (ὑποκείμενον) is implied every time.

The real problem (and not only the problem of metaphysics as such) is how to settle the relation of the thought of to its object – the real world. *Indirectly*, it is the problem of the science which faces the relations thematically, but it might appear in the background of any purely epistemological considerations. The problem is that of assessing the nature of the aforementioned relation. Judgment, otherwise proper to metaphysics, might be, nonetheless, understood in a broader sense, because abstraction is a judgment of a sort. Thus, the question of whence concepts stem appears. If abstracted, concepts are related to transcendent things.

The problem is not historical. Neither is it the problem of metaphysics only. It is the problem of the objective foundation of science and the problem of its future too. For judgment (proper to metaphysics to be sure) is indispensable for assessing the objective value of science in general. Metaphysics might appear in this context but need not so *directly*. Judgment is used in logic too, and contrary to what the advocates of philosophical realism might expect, Thomas juxtaposes them both.⁹⁰ Both are general, which, however, does no impair the objective value of metaphysics and does not amount to relegating it to the sphere of pure thinking. The latter might be a scarecrow and the “fundamental option” for the reality stipulated. The line of reasoning coincides, in the light of what was stated above, with what Scotus expected of the supreme science. Metaphysics might be situated *above* all the other sciences indeed, but it is because of its using the judgement only, not because of being more engaged in any option espoused in advance (as in Scotus). In fact, Aristotle suggested the contrary. The science is supreme just because of being free, and absolutely so in a sense. It was the science for the sake of science; just as humans are free to the extent they are for their sake (not used). Metaphysics is “natural” only in the sense of judgment being indispensable for natural human existence. Being free, in turn, implies a distance towards the world, and is completely different to any fundamental option whatsoever.

No one was as insane as to deny the reality of the world one lives in. Not even extreme idealists dared to. In fact, what was denied was but the existence of relations amongst things in general and the relation of humans to the natural world they live in, i.e. the relation being essential for human existence. The problem, however, of the natural world is far from being so simple that reducible to that of the ecological movement. Because the natural we live in, is, first and foremost, the *human nature and unconditionally affirmed*. The problem of universals

⁹⁰ De Trinitate, pars 3 q. 6 a. 1 co. 1. Sed hic modus procedendi non potest proprie competere alicui particulari scientiae, in quibus peccatum accidit, nisi ex propriis procedatur. Contingit autem hoc proprie et convenienter fieri in logica et metaphysica, eo quod utraque scientia communis est et circa idem subiectum quodammodo.

might crop up in this context but need not. The ideas are supposed to be *some* universals. But normally, we assess nature (a specific nature) by how it shows up, which is suggested in the Greek PHYEIN – to be born. The physical we normally speak of has this etymology. Similarly, the RELTIONS are commonly ascribed to those shared in by the bond of blood. There something indeed between a father and son. There is human nature shared in by them both, or – to use the Thomasian expression – propagated by the agent (the father) and imparted to the effect (the son) about to come to existence. Even Avicenna did admit the existence of the so-called universalia per causalitatem.

Naturally, the propagation of a form might be thwarted by another agent, and what Hume gathers from the fact is not to the point. The fact cannot undermine the universal validity of causal relations. Some are weaker than others, and that is all. Moreover, the fact that actions can be foiled *in some respect* does not amount to that what we know of them applies to a “chunk” of reality as set against the magnitude not yet known. It is not about the *extension* but about the *aspect* of the natural world taken into consideration in a science. These aspects are as discrete as discrete the levels of entity are. The evolution of them would have rendered the world the tale of an idiot and the science impossible.

Thus, the notorious objections uttered by Hume and readily accepted by Kant devised to undermine causal relations in nature are to be set in their historical context. In fact, the determinism of Avicenna and Leibniz was attacked (*posita causa ponitur effectus* – given the cause, the effect follows). But there is another one; the Aristotelian “determinism” is the one of the finality in nature (*posito effectu ponitur causa* – given the effect, the cause follows). For the absolute determinism is rejected by Aristotle too in the second book of “Physics”.

When discussing the problem of causal relations, we are defending the very foundations of science. Einstein saw the problem similarly, although (most probably) he knew only the Leibnitzian idea of causality. The determinism of Avicenna is too fragile a foundation. Instead, the “determinism” proposed by Aristotle is a firm and safe basis for the edifice of science about to be raised. It is not the problem of any fundamental option; it is the problem of the human freedom in general and the freedom of word (Freedom of speech), mentioned above too; the freedom of science also. For the freedom can be endangered as much by the political tyranny as by the tyranny of a twaddle making the intellectual development harder and harder.

Taking into consideration the univocity of terms as applied in *a science*, it is only natural to ask what conditions it *from without*. For terms are seemingly immaterial (at least mathematical objects are such), whereas things are the opposite, viz. material. That a univocity might exist, it is necessary for objects of what is supposed to be universal to be subsumed under one denominator. E.g. two balls can clash only if placed on the same surface. A real cause of *placing* them so must work from without and must be called the analogous one. Obviously, a hand which places the balls is not at all similar to them. Analogically, the real state of matters is a (analogous) cause of universal concepts in the mind, and conversely: the mind makes individuals intelligible acting from without i.e. abstracting from them a universal notion.

The progress of science cannot consist in sheer extension of the area already known and absorbing the unknown. The progress is dynamical and conditioned by the presence of the natural agent that acts behind the scene of the spoken and written words. The only reasonable

alternative for the exploited possibilities of the determinism associated with the name of Leibniz is that proposed by Aristotle. There is a determinism, but a more complex one, and this according to the complexity of the world. For the Greek cosmos was a structured and hierarchical unity indeed. The idea of *harmonia praestabilita*, on the contrary, might appear simplistic if compared with it. All things were believed to be similar to balls used in snooker. They move and rebound. But what about human body and human mind? Are they “balls” too? Is the progress of science determined in the way Hegel believed it to be? What about the errors that people obviously commit? What about the forgeries? Are they necessary also? All these questions seem to be justified, but no reasonable response provided.

The human body, when acting as an instrument of experimenter, is by no means similar to material objects supposed to move along the path (trajectory) of *harmonia praestabilita*. The human mind, and the human body consequently too, is an analogous cause for it acts from without and transcends in a definite manner the objects known. There is a definite relation of what is thought to the real world and the analogous one.

There is, no doubt, a discontinuity of objects that form the world we live in and sometimes only too painfully perceptible. For no one denies that artifacts differ essentially from the natural beings, at least in that they cannot reproduce their like. Humans are artificers, and sometimes happen to tyrannize nature in the way Kant deemed praiseworthy. Communists in the Soviet Russia boasted of destroying the natural environment, as it was, according to them, a necessary price paid for the industrial development. Artifacts, no doubt, can be alienated from the artificer, which was both acknowledged by Hegel and the successors. The fact, however, that they *might be so* is not tantamount to that they *should so*. Moreover, the extent they are so is to be assessed. All this adds up to the problem posed above after Fichte; the problem of how objects are and can be mutually adjusted. For destroying the natural environment is obviously a discrepancy of objects we live amongst. Once again: when, and why, do people so? The answer must be that they disturb the harmony of nature to the extent they act at odds with *their own nature*; which is *rational* one. So, the havoc wreaked upon nature every now and then is caused by the irrational in man. By his/her greed, vanity and presumption man destroys the harmony of nature. Conversely, the more mature and rational actions of men the more harmonized their products with the objects existing in nature.

According to Thomas, God is an Artificer if compared to His effects. Obviously, we suppose Him to be a perfect one and free of the flaws connected with the debility of the human acting. The adjustment of objects God produces is perfect, just because He is the absolute master. He is, however, as absolute as to be completely dissimilar to any tyrant that must ascertain his/her position by forcing his/her actions upon those potentially disobedient. God’s actions are both suave and powerful, as The Book of Wisdom states. To the contrary, the human debility in acting happens to be made up by its vehemence. Sometimes, one’s anger testifies to the childishness of one’s acting and his/her personality too. All this results from the intellectual immaturity and the human existence is marred by the deplorable instances of it appearing “deeply emotional” every now and then. Humans happen to be simply unable to adopt a bird’s eye view; to see things from the transcendent perspective; to be disengaged. Still, the more they try to *judge* things from such a perspective, the more gentle and powerful their actions. People are not doomed to ascertain their value by the

vehemence of their acting. They do not have to tyrannize nature nor the natural in man as Marxists did. A certain distance towards the existing human world is always desirable and the analogical causality to whatever happens to exist in it is to be adopted. Nature, in all her forms, is to be fostered. The more perfect a form, however, the more susceptible it is. Human rational nature is so. It must be fostered along with all guises of the human life.

7. The existential judgment and the identity principle. The fundamental option and the causal relations. The cultural and final identity

That any statement might be objectively valid and lest it be a sentiment only, it must be contrasted with others and the radical opposition to its natural background must be shown. According to Thomas (STh., 18, 4 ad 1), seizing every opposition implies using the principle thereof – the principle of non-contradiction. As however, things are different when subsumed under a common denominator, the very act of subsuming must stem from without and be a judgment. Now, there is a science that grasps the principle thematically; nay, the very existence of this science (metaphysics), according to Aristotle, depends upon whether it should be the first science and the others judged according to the primacy of the non-contradiction principle.

Statements are only true and checkable as such when contrasted with what otherwise could have rendered them null and void. They are not peremptory save in the light of the non-contradiction principle used first. Every science consists in differentiating between what can appertain to its subject matter and is incompatible with it.

Let us consider two things; *A* with the features: α , β , γ , δ ; and *B* with: κ , λ , μ , ν . Now, a true statement consists in ascribing accidents proper to a subject and denying those not proper to it. E.g. a true statement is that *A is β* or *B is λ* , whereas an untrue: *A is μ* or *B is β* .

Still, besides the features that can be shared by the subjects indiscriminately (or are believed to be so) there is something absolutely proper and incommunicable to each thing, viz. its particular existence. On the other hand, all α , β , γ , δ and κ , λ , μ , ν might be supposed to be at least theoretically communicable and the falsity of the statements including them possible. The possibility is open to allot the properties inadequately because of them being communicable.

Accordingly, as it seems, before knowing the truth (e.g. *A is β*), a true knowledge must precede, which would be the knowledge of the existence incommunicable to the other subjects. The stance was espoused by M. A. Krapiec – the advocate of the existential Thomism. *A* and *B* must be endowed with diverse and incommunicable acts of existence and it seemed necessary to know them before knowing anything that appertained to them secondarily only and was known so. The stance implies a direct cognition of what was principal in things – their existence, but not only that: the existence was ascribed by the so-called existential judgments to particular things and the priority of the principle of identification, viz. the so-called identity principle accepted.

In this context, the Aristotelian statement happens to be adduced: “each thing is knowable insofar as it is an actual being”⁹¹. The cognizance of the existence would have been actual *par excellence*. The obvious difficulty consists in that Aristotle does not assume the direct cognizance of existence (and is predominantly believed to drop the question of existence at all), nor the possibility of existential judgments in particular. Neither does he assume the primacy of the identity principle. Consequently, the quotation mentioned above (a summary of what is said in *Metaphysics IX*, c. 9), must be understood in another manner.

According to both Aristotle and Thomas, human understanding advances from potentiality to actuality. The human intellect is no different to other natural potencies, as they all mature (are actualized) in time. The fact is apparent in e.g. a scientist who recalls a problem from memory (having it had potentially known before) and considers it actually. The actual cognizance is preceded by the potential one. To be precise and in keeping with the terminology Thomas uses: there is a habitual knowledge in who is a scientist, but does not use the science actually. Generally, there are habits not only in the human mind, but apparently a science does not disappear nor is it resuscitated every time it happens to be used or passed on to memory.

Ascribing an individual existence to an individual subject chimes in with the primacy of the identity principle. That, however, is at odds with what both Aristotle and Thomas taught. The assumption, moreover, does not affect an aspect of the Thomasian epistemology only, because the cognizance of causes would have been either secondary to the cognizance of the identity of a subject, or without importance at all. Anyhow, the cognizance of universals would have been secondary only. All this equals rejecting the doctrine of *Second Analytics* in bulk. For if what is essentially related, is a substratum and/with its existence only, then no causes can be as essentially related to their effects as the relation of an essence to its existence is. The elementary data of experience, according to Aristotle, provide us with the matter for differentiating between an agent that imparts the specific form to a substratum and the substratum itself, which enables us subsequently to identify, analogically, the form and matter (substratum) in them both; to grasp them separately. The essence is that of the factual first of all, not of what exists. Thus, the essence of things is identified in the background of the factual (the cause and effect). No existence appears distinctly first, although the most formal in both the cause and effect might be subsequently known as their acts of existence.

In this context, the problem of the so-called *Exodus-metaphysics* is to be addressed. According to Gilson, Thomas’ metaphysics is just this: a metaphysics inspired by the biblical Book of Exodus, in which LORD is called the fullness of being. Implicitly, Gilson presupposes that every *natural* metaphysics is prone to disregard the theme of being.

⁹¹translated by John P. Rowan Chicago, 1961. *Sententia Metaphysicae*, lib. 2 l. 1 n. 8. Cum enim unumquodque sit cognoscibile in quantum est ens actu, ut infra in nono huius dicitur, illa quae habent esse deficiens et imperfectum, sunt secundum seipsa parum cognoscibilia, ut materia, motus et tempus propter esse eorum imperfectionem, ut Boetius dicit in libro de duabus naturis. *Metaph.*, IX, c. 9 in calce; c. 10.

<https://dhspriority.org/thomas/Metaphysics.htm>

Moreover, he claims that the theory of existential judgments appears in both Thomas and Scotus. The latter statement, however, cannot be substantiated by direct evidence in original texts. True, it is to be granted that both philosophy and the Revelation focus on the theme of being, but it is by no means obvious that they *approach* the theme in the same manner, which, in fact, Gilson claims. Normally, natural human intellect grasps some *forms* of being, to wit, being-in-motion this or that way. Metaphysics (as to its starting point) is no different to any natural cognition. This accounts for the fundamental distinction of the classical Greek philosophy: between BECOMING and BEING. All people are aware of the natural changes of things they live amongst. But it are only metaphysicians who elaborate therefrom a sophisticated notion of being. Perhaps, they may ultimately approach the same truth which was revealed in the book of Exodus, but Bible is revealed, whereas metaphysics is a product of human mind.

Hebrew is, generally, the language of the Old Covenant. Greek, to the contrary, is the language of reasoning. According to Thomas, instances of paradigmatic theological reasoning are to be found in the Epistles of St. Paul. There is not, in Hebrew, a radical difference between BECOMING and BEING. Both verbs stem from the same root. In Septuagint, a Greek reads: (Jer. 1. 4) Καὶ ἐγένετο λόγος κυρίου πρὸς με λέγων (And the word of the Lord came to me, saying; Et factum est verbum Domini ad me, dicens).⁹² A Greek might be unaware of that the Lord is Being itself and the γένεσθαι (BECOMING; *facta esse*) is the mode the Lord operates – *not different to His essence*. A philosopher, for all his interest in being qua being, might be completely unaware of that he proceeds by natural means to the truth revealed for others (possibly not acquainted with philosophy at all). Still, one who is both a philosopher and a theologian is acutely aware of the difference between those two kinds of cognition.

[Hic describit prophetiae tempus, quia sub tribus regibus prophetavit, de quibus habetur 4 Reg. 20, et deinceps]. Sed cum supra dixerit, verba, quare hic singulariter dicit, verbum? Ad quod dicendum, quod verba prophetalia sunt quidem multa in se, sed sunt unum in sua origine, quia a verbo increato originantur. Sed cum illud verbum sit aeternum, ut dicitur Joan. 1, quomodo dicitur factum? Et dicendum, quod non dicitur factum simpliciter, sed ad aliquem; non quidem mutatione facta in verbo, sed in eo cui per verbum fit revelatio: secundum quem modum dicitur Deus factus refugium nostrum.⁹³

The words of the Revelation are one in their origin, but they are multiplied according to how they are related to us. They come-to-being in the human world, although they are, originally, the Being itself and thus to be called the Subsistent Word and the Lord. Now, philosophers face this coming-to-being first, without knowing *directly* the Being itself to be its source.

⁹² אֲנִי הָיִיתִי (u·iei) and·he-is-becoming דָּרֹו רְבִד) -of יהוה (ieue) Yahweh אֵלַי (al·i) to·me לְאִמְרִי (l·amr to)·to-say-of (Jer. 1. 4).

https://www.scripture4all.org/OnlineInterlinear/Hebrew_Index.htm

⁹³ Thomas, In Jeremiam, cap. 1 l. 2.

Thomas' (the philosopher's) line of reason seems to be such: not only the fact of things being changed (either accidentally or substantially, i.e. their becoming) is to be accounted for as in the Aristotelian "Physics". Neither does it suffice to identify the form of what came to existence, as "Metaphysics" does. The fact that things exist as such and not only exist in the world (appear in it) is to be elucidated. In absence of the form of the substantial agent, a thing exists, although due to the ordinary sense attached to the word EXIST, the fact might be equaled to that it appears only. Thomas avails himself of the term SUBSIST, which is apparently more precise one. But other terms elaborated by Aristotle are to be used anyhow. There must be something formal in things and absolutely so. The formal component of motion is a necessary prerequisite to get to know the formal in things, no matter how deep hidden in them, and the continuity to what is normally experienced is indispensable. Existence, according Thomas, is "intimum rei" (the deepest to be found in things by who burrows deep under appearances). Existence is only known by reflection upon what is normally experienced. Similarly, there is no "matter" as a counterpart of the most formal in things; the essence is in potency toward existence, but is not a matter. The formal in humanity (human essence) makes a *substratum* coming to the actual existence. Similarly, the notion of the formal is not plain at first glance. The meaning attached by Aristotle to EXISTENCE was restricted to BECOMING (γενεσθαι); i.e. to what *comes to* existence, whereas the problem of what *actuates* e.g. my humanity after my having come to existence had been either overlooked or underestimated. The Greek term of hypostasis might apply to the substratum whatsoever (substratum broadly speaking) and SUBSISTENCE might be understood as its translation; still, things rather subsist under their own existence than are matters of existence.

Taking into consideration the most formal and the most *effective* in the ordinary experience, the primacy of the actual existence is to be granted, because each thing acts as far as it exists. Still, this does not amount to that it is known to be such – effective. People e.g. breathe without being aware of the role oxygen plays in the metabolism. Should being be known first, it must have been named accordingly. Now, according to Thomas, being is the first conceived in the human mind to the effect it enables us to name all things, i.e. to build any language at all. This concept is not known in the proper sense of the word, i.e. similarly as items in a vocabulary are, to wit, known as being; for being as being is the subject matter of the most difficult science, viz. metaphysics. Being is not known until systematically reflected upon, which is mirrored in the fact that the majority of people does not understand the meaning of BEING. Theoretically, a language might be elaborated departing from the most formal in human understanding. Verbs (which express some modes of being) are obviously more formal than nouns are, albeit normally, it is easier to learn nouns, i.e. the material in a language, and this according to the way of becoming mentioned above. The imperfect comes here first.

The problem is, then, far from being just hermeneutical one and is not connected with how to understand Thomas' texts aright only. The relation of the existence to what subsists under it was acknowledged to be that of actuality to potentiality by all who read the texts without a hermeneutical key. Moreover, the terms of actuality and potentiality were accepted as universally applicable and not restricted to any particular system of philosophizing (e.g. the Thomasian one). The fact that a thing must *be* in reality apart from *being this or that* is in the perfect accordance with the common sense, but the problem of priority is serious: if a thing

comes to existence, its act (of existence) has been preceded by the potentiality it actuates. Now the precedence was rejected by the advocates of existential judgments: not always was the meaning of ACT substantiated in them according to the variety of natures that exist actually. The non-contradiction principle is not used methodologically then, nor the diversity of things made out. Nothing save an intuition of the act remains, which was – parenthetically speaking – granted by Maritain (another main advocate of the Existential Thomism). In other words: the sense of the most formal in things has been blurred. This sense should be matched with what is normally understood as formal in science, which is the principle of motion.

Thus, the problem of ontology (a science on being as such) appears and contrasted with metaphysics (a science on being differentiated according to the variety we distinguish in the world we live in). There is a difference between them both and spotted distinctly on the first pages of Scotus' "Treaty on the First Principle". Scotus prefers proofs purely formal to those connected with the material (natural) world. Thus, a new meaning of the *formal* appeared. Two possibilities had been opened: either the formality of judgments enhanced to the detriment of the judged and to the profit of the judge (Kant), or the judged given priority and called existence (Gilson, Maritain, Krapiec). Originally, in Scotus, both possibilities had existed and to some extent they existed in Brentano and Husserl too. But both stances share in common the sentiment that being-in-motion is not a sufficient means to get to know the sense of being.

If the relation of the ordinary experience to the conceptual system of thinking is loose and contingent, then what is supposed to be a rational proof will unfold without a relation to what actually exists. The fact was granted by the advocates of the existential Thomism. Hence, the emblematic distinction between "thinking" (proper to idealism) and cognizance (a mark of realism). As however, we cannot dispense of thinking anyhow, the problem of idealism seems to be insurmountable. For all its possible flaws thinking is indispensable for proving anything at all, and no intuition of existence can bolster it (all the less: replace it). But the motion of imagination, which normally accompanies every act of reasoning, was denied by realists the name of actual existence. They regard it with suspicion and contrast it with the *genuine* existence. The continuation of who understands to the understood will be in fact broken as soon an existential judgment has been passed, although the theory of existential judgments obstinately claims the opposite. Gilson unwittingly admits the fact. According to him (albeit not in keeping with the Thomasian texts) the theory of existential judgments is the same in Scotus and in Thomas. Moreover, even Husserl speaks of existential judgments. Both realists and idealists accept in fact the difference between reality and consciousness, although differ in how to evaluate them both.

The formal in cognition might be believed to be separable from the matter that undergoes motion as radically as in Kant, who assumed the primacy of the identity principle too to the effect of relegating the formal from the realm of nature to the so-called "consciousness". The turn might have been quite unexpected for a 14th century philosopher, but is, nonetheless, difficult to avoid even for the declared advocates of the philosophical realism. No essential difference is visible between the both stances, as they in fact depart from the same mistaken premises laid down by Scotus and accepted uncritically.

The principle of explosion (*ex falso quodlibet* – from falsehood, anything) says that both true and false conclusions can be gathered from false premises (any statement may be

logically inferred). There is, thus, no use in exploring those false assumptions, unless the exploring becomes a *reductio ad absurdum*. That is the sense of studying the history of philosophy. The time of this history might appear remote, but, in fact, all people are *dramatis personae* of this history unfolding before their eyes. This or that way, we are accomplices of its actions. The time of this history is, in fact, the time of our life and the events of it participated of. If persons blunder into blind alleys of existential impasses, it is because of some “theorists” who have paved the way. Some consequences of what they claimed might seem ridiculous. The risible (*risibile*), indeed, is a proper sign of humanity. A dog can imitate the grimace of the face of his owner, but is unable to feel the ridiculous. But paradoxically, being ridiculed seems unhuman too, for it equals being taunted or despised. *Risibile* might well be *an exterior* trait of humanity, but the *specific* difference of man is rather rationality: the ability to see some absurd consequences of some miscarried principles (maybe without mocking them). People happen to be laughed at because affected by some absurdities. Perhaps, some thoughts are really laughable. But not humans so. The rational in man necessitates distinguishing between falsehood (the evil of the absurdity of some miscarried ideas) and a person who deserves affirming his/her dignity unconditionally. The risible of the modernity are visible with naked eyes. But persons affected by “modern” absurdities deserve being liberated therefrom.

Scotus assumed that: 1) the intellectual indistinct intuition of particular existents preceded the conceptual knowledge; 2) the non-contradiction principle expressed self-consistency of thinking only (*non repugnantia essendi*); 3) the causality in abstracto, but not causes as proper to the incriminated by him the “Greek naturalism”, must be the subject matter of the supreme science; 4) there existed a weak, intentional, essential being as a medium of the cognizance of God.

Accordingly, the non-contradiction principle was but loosely connected with the objective state of matters and the Aristotelian stance labeled as naturalist. Indeed, Aristotle accounts for the nature of the human understanding, or for what is natural in human thinking, i.e. explains how it unfolds in the material world we live in.

That philosophy of nature happens to be treated with some distance by those who claim the special metaphysical experience is somehow understandable in the light of the fact that the science of nature unfolded in modernity towards the entire emancipation from philosophy. The unity of the edifice of science, as projected by Aristotle, has been shaken and it is difficult to restore it nowadays. Consequently, the problem arose whether metaphysics was a science in the sense the exact ones are.

The exactness in question is scarcely visible in the subject matter of metaphysics: “being as far as it is really being” (*ens inquantum est ens*). But its end is projected by Aristotle himself exactly enough: it is the cognizance of God which is aimed at. Moreover, the first science was not called metaphysics by Aristotle: the name used was “theologics”: the science of God. Now, the “of” might have a twofold meaning: either it is the science God possesses, or the science we have about Him. Accordingly, Thomas distinguishes two “theologies”: the one based on the Sacred Scripture (the possibility that God can voluntarily share thus His own knowledge about Himself with people was not admitted by Aristotle), the other based on the observation of nature. The end of the latter, however, happened to be deemed inconspicuous: the cognizance of God we can obtain with natural means is scarce really. To the contrary, the

end of the former is as plain as only possible: everyone seeks after beatitude, after fullness of life, after truth and good, which all are about to be found in, and given by, God Himself. Although the two sciences are different, the method adopted in them both is pretty much the same: the separation of goods from Good itself; the distinction of means from the End; the removal of obstacles posed on the way towards the Cause of our beatitude.

Now, if theology (of the Sacred Scripture) had not been be a science equal to those commonly so called, the ultimate end of the human life could not be understood precisely (but possibly fancied only). No definite means would have existed leading to the End. The relation of the means to the end must be settled precisely in any other *rational* human activity (they are settled so to the extent an activity is rational). If the premises of theology are not shown to be safe means leading to definite conclusions, the most precious in the human life (beatitude) would have been evanescent.

All material goods *must* be *understood* for being effectively used, and the signs of any language are material to some extent at least. In modernity, a blatant discrepancy between the end and means appeared. The Kantian end motivates as purely formal, which is to say: formal not with respect to definite objects. Practically, it might lead to a subjective conviction justifying any material circumstances of a moral act. That some immoral actions are justified by some and rejected by the others, might be, in that case, purely incidental (for witnessed subjectively only). If no objective gauge existed of the goodness of human actions, all actions would be assessed from a subjective point of view only. The life assessed traditionally to be most genuine and demanding would be replaced by dreams. Traditionally, this life, as subordinated to the ultimate end, demanded, on its part, subordinating all human “matters” (actions) to the ultimate end in a definite order. But the perspective called transcendental (not: transcendent) precludes the notion of a definite order. For the end to be realized (and not dreamt of only) human nature must be *a means* and *used* to obtain it. Unfortunately, Kant misunderstood the very term of USE. In the scholastic USUS, the spiritual in man communicates to the material *in reality*. Theology (the theory of this communication) was a science in the sense proposed in Posterior Analytics and its conclusions – peremptory.

It seems understandable that the autonomy of metaphysics happened to be defended at the expense of separating it from the other sciences. The unity of the system of science (as understood traditionally) has been sacrificed, so that metaphysic (and theology) might exist at least on the margin of the human rationality. Still, the problem is whether metaphysics can remain what it has been since Aristotle, ceasing, at the same time, to be the first science – the one passing particular judgments (not existential only) on the statements of *the particular sciences*. The splendid and honest work done by the modern interpreters of Thomas’ writings has not been used as it deserved to. For if metaphysics is separated from the natural cognition and the cognition of nature too, and a special experience stipulated, then, conversely, its efficacy in judging the natural will be problematic. Metaphysics has ceased to be as *radical* in passing judgments as it used to be after Aristotle. It has ceased to be the first philosophy.

The fact that idealism was assessed not that much an error but a fundamental option instead is no less significant. Generally, the efficacy of the ordinary argumentation in metaphysics was despaired to be possibly obtained and consequently abandoned. Some realm of the human rationality, and a relatively narrow one, was believed to be radically separated from what otherwise was acknowledged to be rational.

The emblematic differentiating between “thinking” and “cognition” implies in fact assuming tacitly the opposition between “consciousness” and “reality”. For the latter was known only due to some special kind of experience. The “consciousness”; the intentional being, in turn, for the very fact of being opposed radically to the crude nature must be considered “supernatural” and devoid of the natural physical counterpart. This is the meaning of being “noumenally free”. Thus, the mediation of the intentional being in the cognizance of God might sound equivocal. The intentional as understood by both Aristotle and Thomas (but not phenomenologists) is as physical as no other natural object possibly can be. Nay, it is the most general natural tendency towards existence possibly to be found in nature. The tendency cannot be deified (be “supernatural”), obviously enough; for the very yearning for existence (the fullness of being) implies not possessing it. The tendency inheres in nature and is as radically instilled in it, as straightforward opposed to its Transcendent Object. Although in the texts by Aristotle nature happens to be written (printed) with the capital *N*, and both are juxtaposed by Aristotle himself as in the: “God and nature does nothing in vain”, the possibility of the deification of nature is decidedly precluded. The contrary is the case with “consciousness” as devised by Descartes and those who followed suit. Theoretically, it can be a medium of the cognizance of God, but practically, it rather stands on the way to obtaining the ultimate end and obstructs it. This characteristics is somehow immanent to humanities; for if two men face each other and each expects to find his/her identity as mirrored in the mind of the other, then, at least one of them must turn his/her back to what the other tries to see behind (the Transcendent). “The other side of the mirror” is obviously a fable only.

Thus, the existence of the intentional being need not be postulated only as in Scotus and those who followed suit. The most general tendency of nature is expressed in the Thomasian formula of the subject matter of metaphysics: *ens inquantum est ens*. The proof of the existence of the Supreme Being departs from grasping the general tending to being as universally present in nature. To the contrary, it might be doubted whether ontology as devised by the modern interpreters of Scotus is in a position to do the job. The assumption might sound even ridiculous if the so-called “fundamental ontology” as founded by Heidegger is concerned. Apparently, Heidegger did not aim at demonstrating the existence of God. The “sense of being” (of the intentional being) is far more important for him than what the ordinary people expect to “see behind” it.

In the Middle Ages, some hoped to see everything (including God) in the “mirror of eternity”. The problem whether God was identical with it, or reflected in it only, might have been evaded, but it cropped up in modernity in a new form anyhow. The modern “eternal peace” is a mirror and ontologically prior to all objects (including God) seen it. Thus, the weak deity of transcendentalism has replaced God in the minds of those who have believed in what Kant claimed.

Metaphysics must depart from the cognizance of the natural order of relations, although its starting point might look inconspicuous and not “preferable” (as Scotus has it) to the “ontological” one. Albeit a direction of the inquiry might be hinted only and as faintly as likely to be overlooked, science in general advances towards what transcends an order of things in some respect. Metaphysics advances along the same path of the general tendency of nature, but its scope of interest is more general. It is simply more consequent in searching for *the other side* of the given phenomena. The order in question is necessary, and the conditional

necessity of things is its base. Things are conditioned as far as related to an end. They are unilaterally ordered to what transcends them to lesser or greater extent.

Both reasoning and definitions are related in this manner to things. Science as such depends entirely on its subject matter. True, things are material (whereas concepts are not), but the order of them is immaterial obviously enough. Science is rather related than opposed to reality and its concepts are not stamped with the mark of license as long as they are what they ought to be – scientific. The concepts are general but not that general as ideas happen to be understood. They are generally applicable to the objective state of matters as for their origin (abstraction), and not only as to them being possibly tested as for their designates. Science is *essentially* dependent upon natural things and not only tested to correspond to them with some probability. The relations science faces are real and its relation to the nature is real also.

Consequently, no special philosophical experience must be stipulated and no immediate cognizance of reality too so as to avoid relegating metaphysics to the antechambers of science. The cognizance of metaphysics is mediate at least in the sense of being the cognizance of this or that being, which implies the presence of what differentiates them. It is mediated by the form proper to a given species, or, so to say, a mode of being. Thomas calls it species intelligibilis. It might be also called forma vicaria. Its importance must not be overlooked. Still, it happens to be so every time an immediate cognizance of being as such is granted.

The distinction between the immediate and mediate occurs in Aristotle in another context. It is the problem of reasoning. Some premises are immediate (ἄμεσᾶ), whereas conclusions as such could not be so. However, all statements are reducible to the first premises and thus not only the latter can be called obvious but the conclusions formulated in their light too. Ultimately, everything depends upon excluding the elements foreign to the reasoning and reducing all statements (and particular premises too) to the first and the immediate principles. The self-consistence of reasoning is not identical with the abovementioned non repugnantia essendi (self-consistency of ideas). Reasoning cannot be self-consistent without being consistent with what is empirically known; for the immediate premises (principles) are so. This consistency can be proved objectively and the statements be as firm as what normally is believed to be. For science is a real source of stability of the human existence.

The problem is that of science in general. The only difference of metaphysics to the other sciences consists in that it cannot depart from real definitions (as it is the case in particular sciences); from the definitions possibly related to the objective state of matters. There is no definition of being, nor can it be (according to Aristotle) a genus. Metaphysics, however, is responsible for reducing all statements (expressing modes of being) (all definitions and judgments) to the naturally known principles. In other words: it accounts for the eventual necessity of scientific statements. Paradoxically however, it is indebted to the other sciences too. For the principles it uses are as general as difficult to substantiate in the real world *directly*. Thus, the unity of the system of science mentioned above is profitable for both metaphysics and the other sciences.

Intuition (or whatever tantamount to it) might be believed to be checkable *in whole* as for the presence of designates that might substantiate that “theory”. Now, according to

Aristotle, *each particular step* and *each element* of reasoning taken *separately* is no less checkable (in part) in the light of the first principles. The “intuition” or the like is in fact believed to be provisional (probable) only, and harbored by a subject regarded to be responsible for witnessing its validity. Now, science in Aristotle is more than subjectively valid.

Being spellbound in the world of ideas and intuitions might seem to be pleasing and deemed a token of liberty. However, a price is to be paid for creating virtual worlds. Some happen to be excluded or even eradicated from them just because being unheeded, which is unavoidable in case of pursuing any intuition. Visionaries do not, in general, pay much attention to particulars.

It can only be guessed how Thomas could have referred to Scotus’ idea of *scientia quidditativa* – the science of essences. Most probably, the concept would appear to him oxymoronic. For according to Thomas, a science is perfect as long as it stands in *actual* presence of its object (or: the subject matter). (*Omnis scientia in visione rei praesentis perficitur*⁹⁴). The IS of a scientific statement is as realistic as any other IS, that of the premises and existential judgments included, should the latter be relevant to science at all. The science is, then, to be neatly distinguished from opinion (possibly witnessed) and from faith too. The faith religion is speaking of is certain because of the veracity of Who vouches its validity (God; *testis in coelo fidelis*),⁹⁵ which is obviously not the case with the human opinion.

De veritate, q. 14 a. 9 co: Unde fidei obiectum proprie est id quod est absens ab intellectu. Creduntur enim absentia, sed videntur praesentia, ut in eodem Lib. Augustinus dicit, vel etiam res non apprens, id est res non visa: quia, ut dicitur Hebr., XI, 1, fides est argumentum non apparentium. Quandocumque autem deficit ratio proprii obiecti, oportet quod et actus deficiat; unde, quam cito incipit aliquid esse praesens vel apparens, non potest ut obiectum subesse actui fidei. Quaecumque autem sciuntur, proprie accepta scientia, cognoscuntur per resolutionem in prima principia, quae per se praesto sunt intellectui; et sic omnis scientia in visione rei praesentis perficitur. Unde impossibile est quod de eodem sit fides et scientia.

Consequently, the object of faith is that which is absent from our understanding. (We believe that which is absent, but we see that which is present, as Augustine says.) For “not present” we can say “the thing which does not appear,” that is, the thing not seen, for as Hebrews (11:1) says: “faith is... the evidence of things that appear not.” Now, whenever the determinate principle of the proper object is lacking, the act also must necessarily cease. Hence, as soon as something begins to be present or to appear, it cannot be an object of an act of faith. Whatever things we know with scientific knowledge properly so called we know by reducing them to first principles which are naturally present to the understanding. In this way, all scientific knowledge terminates in the sight

⁹⁴ De veritate, q. 14 a. 9 co.

⁹⁵ Super Psalmo 9, n. 4. Aliquando habet iudicem, sed non testem vel advocatum; sed iste habens iustitiam invenit iudicem; et ideo dicit, quoniam fecisti iudicium meum, idest dedisti, et causam meam, idest testis meus. Hier. 29: ego sum testis et iudex, dicit dominus. Deus enim est iudex et testis: inquantum iudex, facit iudicium; inquantum testis, causas defendit.

of a thing which is present. Hence, it is impossible to have faith and scientific knowledge about the same thing. (translated by James V. McGlynn, S.J.).⁹⁶

The hope attached to the supernatural faith is certain by dint of the end about to be obtained, i.e. the end of the universe which encompasses all other ends (and is personally engaged in settling the end of the human life historically), and is thus stable to the extent no other natural end can be. Still, the same end, if looked upon subjectively only, is fragile, just like the intentional being a subject is supposed but to witness. The intentional, therefore, is a realm of a precarious existence of those who “believed” in the way Kant described as “rational” and “philosophical”.

Theology unfolds in the perspective of the ultimate end that should be obtained, and the end is *real* in the full sense of the word (and not only *realized* when a testimony is borne thereto). All steps leading to it must be measured and assessed firmly too.

Sciences, on the other hand, are certain only because of *natural* principles (similar to ends of actions and coinciding with the *objectives* of sciences) being used adequately. Adequacy implies making out neat boundaries amongst the objects concerned. However, not that much “ideas” should be “clear and distinct”, which Descartes stipulated, as rather the methods adopted be transparent. Anyhow, blurring the boundaries is deadly to science, and in this sense Descartes was right.

Thus, there is no need to introduce a special and privileged mode of cognizance meant to guarantee the correctness of the conclusions that might follow in advance. True, assensus fidei renders all decisions that are about to follow right (if the continuation to this principle is observed consequently), but science is not faith, obviously enough. The certitude of faith stems from its Object (Veritas Prima), not from how He is intuited by us.

There is a certain starting point necessary for attaining the ultimate end of the human existence as proposed by faith. Although all the natural in man must be subservient to what is really supernatural, no natural intuition of what leads to the ultimate is to be expected in science. Theology is no exception; for the principles it departs from are not seen distinctly and no insight into their purport possible. Not even theology can render the ultimate present, albeit it can represent it in the way sciences normally represent things. No intuition of being can be deemed a prerequisite to obtain the ultimate end of the human life. Neither, on the other hand, can the lack of the alleged intuition be deemed culpable, and supposed to stem from the original sin (Scotus). There was a conversion postulated in science (similar to that of breaking away with sin), and not only a relatively neutral starting point. The real conversion, no doubt, is an engagement and perhaps to the extent no other human action can be. But a science which should have to be engaged in *the way* the *will* must be is oxymoronic. The judgments that the will passes are to be distinguished from those passed in science (It was Descartes who blurred the difference). The starting point must be disengaged really for being possibly acceptable for all those who would like to find a natural fulcrum for what otherwise might be difficult to accept and understand *directly*. All that follows might be engaged to the extent of how important the statements for human life are.

⁹⁶ <http://dhspriority.org/thomas/QDdeVer.htm>

In the Platonic Myth of the Cave, a conversion is depicted and the philosophical one. There was a privileged direction supposed in which all human actions should advance and imaginable as mythical objects normally are. It can be really imagined that the line of sight remains in a definite radial distance from its ultimate object. In the case of a sinner, the distance equaled $d = \pi$ (180°); in the case of a saint it equaled $d = 0$. Now, turning away from being as implied in the Heideggerian *Seinsvergessenheit* would correspond to the condition of a “sinner”. Philosophy, on the other hand, was meant to “convert the sinners” and the Heideggerian *Sorge* was such an engagement. Heidegger’s amendment to the myth consisted in that the Heideggerian *Sorge* was neither the act of the will nor the intellect. It was supposed to be an emotional act of the mind; for the “rational” was postulated to be “emotional” at the same time. Thus, at least indirectly, the problem of what should complete the act of the intellect was made out. Still, philosophy was meant to replace the conversion proper to faith.

Not even theology can make the End of the human life present; it cannot save people, albeit it can be a means used to this objective. It only *represents* its Object, which is obviously not identical with that it makes it present. Science (and philosophy) too, cannot make the ultimate present. If scientific statements are what they ought to, a disengagement and distance towards what is known must be supposed first. Apparently, science happened to be credited with too much.

The idea underpinning the Heideggerian *Seinsvergessenheit* might appear simple: according to Heidegger, the “metaphysics of the future” would speak in the language of mathematics, the language of quantities. But there is no such “future” visible 45 years after Heidegger’s death (in 1976). What accounts for the right attitude of the mind towards the ultimate is not possible to be grasped in such plain quantitative terms.

The situation of the one who has lost sight of the ultimate can be compared to being lost in the wilderness. No direction in it appears distinctly; for a privileged frame of reference would be necessary for it. Normally, people lose their bearings in such a situation completely, and are bereft of such a frame of reference, which means to be at a loss in the normal sense of the word. However, it was believed that a three-dimensional space might be such a frame of reference and all problems (the most difficult ones included) solvable if set against that matrix (or a similar one). Moreover, for some time, it had been believed that not only geometry was as important for man as Plato imagined it to be. It had been believed that a natural counterpart of the three-dimensional space existed in reality, viz. the so-called ether. Thus, both imagination and the natural life could have been directed in the way a phasor can turn. The notion of that frame of reference implies that the right direction is opposite to the wrong one. Something similar to ether existed in Plato’s philosophy, because the matter, the ultimate substratum of the universe, was called ROOM ($\chi\acute{o}\rho\alpha$) or “what sustains” things ($\acute{\upsilon}\pi\omicron\delta\omicron\chi\eta$).

The philosophical (and the moral) implications of the sentiment are far from being a trifle. For it might have been believed that the opposite of evil is always good to the effect of the cognizance thereof being profitable for shunning it in the future. The assumption is completely false, since evil, according to Dionysius, is indefinite and undefinable that much that the opposite cannot be defined in its light too.⁹⁷ Evil is only cognoscible if good is known

⁹⁷ STh, I, 19, 13 obj. 4. Further, evil happens in more ways than good, since “good happens in one way, but evil in all kinds of ways,” as declared by the Philosopher (Ethic. ii, 6), and Dionysius (Div.

first. No “radical” existential choice is workable, and all statements beginning from: “my statement is completely contrary to ...” must be vitiated just because implying some common denominator of them both tacitly assumed. The opposite of good is always evil, but not vice versa.

As a rule, a person entangled in evil tussles desperately between contraries that are both evil.⁹⁸ For instance, the opposite of despair might be audacity (impertinence). Someone who thought that God would never forgive him, might well believe the opposite, viz. that God would forgive him everything (and was bound to) to the effect of evil being bogus. This however, implies that doing harm to others is permissible.

No matter how desperately entangled in a world “created” by him/her, a man remains in the definite relation to God, and the End is not to be despaired to be obtained anyhow. The only prerequisite is to grant the very possibility being open. Someone who is audacious (non-repentant) in the way mentioned above denies the existence of the definite relation to the Ultimate and shuts out the possibility. In other words: a certain relation of means (creatures) exists to the Ultimate. The means are to be *judged* as such in the perspective of the ultimate to be obtained. Should they not be judged, the ultimate would have been despaired to be obtained at least by some or in some circumstances.

That the very possibility of the radical volitional engagement be open, the act of what naturally precedes it must be the opposite, viz. disengaged. The evil must be shunned, but the intellect cannot do this; it cannot eradicate evil from life just because ceasing to think of it. No “optimistic” vision of the world can render evil nonexistent.

It is proper to the rational creature to try and find the relation to the Creator without any background (matrix) to set it against. Being rational, in turn, implies using the first intellectual principle; the one that enables us to make out everything at all (being) without accepting what it (being) should be contrasted to. (Non-being, according to Thomas, is but a quasi-exemplary cause). No suppositions are required neither what are commonly called theories to know what actually exists. For TO EXIST equals intending the *fullness* of being, which implies completeness of principles. But if so, maximum of existential possibilities appears to those who avail themselves of the first principle and the science that tackles it thematically. No one is “determined” in the way the possibility of contracting the bonds with God be precluded. In fact, they could be contracted in a unique and personal manner just

Nom. iv, 22). It is not right therefore to assign one expression only in the case of evil—namely, prohibition—and two—namely, counsel and precept—in the case of good. (Literally translated by Fathers of the English Dominican Province).

<http://www.newadvent.org/summa/>

⁹⁸ S. Thomae, Super Iob, cap. 24

... impius ergo per viam vinearum non ambulat quia rebus huius mundi moderate non utitur, sed quandoque declinat ad unum extremum quandoque ad aliud, et quantum ad hoc subdit ad nimium calorem transeat ab aquis nivium, quasi a contrario vitio in contrarium transeat quia in medio virtutis non manet ...

according to how perplexed the existential context one lives in. No natural substrate neither matrix (let alone an artificial one) exists as a realm in which this unique relation should appear, unless the Nature (a “Matrix”) be understood as the Human Person that extracts all humans from any “human bondage” they happen to be entangled in. The Person has opened the possibility of participating in/of the Divine Life for everybody, as was mentioned above. The mystery of predestination is only understandable in this Person. On the other hand, all kinds of philosophical reductionisms seem to be some guises of predestinationism.

Man is capable of the participating of the Divine Life (*est capax Dei*) and his/her nature can be nobilitated in this way as long as assisted by the Pure Man and uncommitted by the deformity of nature. All these remarks are not that much philosophical as rather meant to repudiate those statements that pretend to be philosophical, but are disguised naturalistic soteriologies instead. It is about allotting aright the place proper to philosophy itself. It is about discarding the possibility of philosophy pretending what it cannot be.

In the light of the ultimate perspective, man appears to be a wayfarer and foreign to what otherwise normally constitutes his/her closer realm of life. People might help each other in attaining the ultimate, but hinder too. Both possibilities are open as long as we live; it are ideologies only which divide humans with pertinacity into e.g. progressive and reactionaries; Jews and Aryans; open-minded and fundamentalist; etc., etc.

Not even choosing between seeing the world in black and white, and relativism is needed. The *absolutely valid* moral law is *relative* in the sense of being *referable* to each individual just because applying to his/her nature perfectly; and this independently of any cultural context that might be believed to blur its outlines.

The human freedom is absolute to the effect (and in the sense) of all such like contexts being possibly “bracketed” and the personal identity be found in the relation to the absolutely Transcendent Cause of the universe. Of course, the recognition of the fact must be universally valid and applicable to all humans indiscriminately. The pathway one embarks upon must be as safe as possibly trodden by any other. First of all, it is the Way (The Thomasian Way is such) we make out the Ultimate intellectually so as to *decide* subsequently whether to follow it.

The OTHER appears on the way as a physical being (i.e. endowed with corporal features) first of all. Still, the meaning of the physical must correspond to the principles of *this nature*. The Other is a means to the Ultimate. But means are only usable to the extent their nature is known. Thus, and contrary to what Kant stipulated, *humanity* in general (both in me and you) *must be used* so as to reach the Ultimate. As was noted above, *USUS*, in the traditional sense of the word, is a continuation of the act of human will to the material one lives in. True, the state of energy of a given system must remain constant. But the volitional in man does not impair the validity of the principle of energy conservation. Neither, on the other hand, the principle necessities relegating of the volitional in man to the “noumenal” Kant devised. Both a moral agent and an experimenter, outlines the boundaries of a system to be explored, but he/she *stands beyond* that system then. He/she is not subject to the alleged determinism of nature. The applicability of the principle of energy conservation might be *imagined to extend* over the whole world, including human body and mind. But in fact, it observes only in a realm restricted by an observer or an artificer (or experimenter). The world as a whole, in turn, depends upon the Transcendent Artificer (as Plato has it), because the

conservation of its energy must be maintained and the entropy of the system precluded to grow.

The principles of nature must be systematically reflected upon so as to unearth what is possibly hidden under the appearances. There are, according to Aristotle, principles proper to each particular nature and universal analogically only. It is the case with humans too. The principles of the *rational nature* are the intellect and will.

No matter how far-reaching the objectives of a science, its starting point must be that of natural experience. No fundamental option (a privileged experience) is apt to guarantee the right direction of reasoning in advance. Tacitly, it happens to be assumed that some were unable of the fundamental intuition in contrast to those privileged ones.

In the case of the natural experience, the only possible conversion is that of the intellect to the sensed: *conversio ad phantasmata*. Step by step, and in continuation with phenomena, the object of the ultimate perspective becomes more and more visible, and can become nigher and nigher.

Idealists believed in that God must exist in the realm of ideas; for Plato spoke of the other world (*Phaedo*) as contrasted with that we live in. Still, it is by no means certain whether Plato himself intended to place God *amongst* or *above* ideas. Anyhow, both possibilities might be not behooving His dignity after all. Thomas deems ideas to be *secondary* only and to exist according to how the absolutely simple essence of God is related to *manifold* creatures. All this adds up to that ideas are not that much sharable by any intellect at all, and no mirror of eternity exists as reflecting what physical things *should be* (e.g. from the mathematical point of view). Ideas are but the modes of understanding and proper to *the* intellect that conceives them. Apparently, the human mode of understanding (conceiving ideas) must be different to the divine one. If the latter exists – which cannot be discarded in advance – it is preposterous to look upon it anthropomorphically. The distinction is important but has been blurred, for Kant believed that ideas were sharable indiscriminately by the collective consciousness and no essential difference appeared between the human and divine intellect. Immanentism followed. Gilson saw the same archetype of thinking adopted in the Middle Ages (in Scotus) already. Honnefelder situated transcendentalism in this mediaeval tradition. Nowadays, God might be believed to be immanent to “consciousness” or identical with it.

The reaction of realists was as vehement as indignant – understandably enough. God was real unreservedly and independent of the way we thought about Him. Obviously, God could not be “thought out” in the way it satisfied the requirements of a “modern and progressive” mind. Philosophy must acknowledge the fact. Some who pretended to “meliorate” the “idea” of God and to make it modern might end up (as Loisy) in pantheism. Practically, if believed to be endowed with a power to “humanize” the idea of God, human mind might ascribe the notion of divinity to any object whatsoever. Moreover, the object might be demanded by “humanists” to be humbly worshipped by the others (not progressive enough). The so called freedom of thinking opens such a possibility. In this sense, the vehement reaction to idealism is justifiable: no one can be demanded to worship simulacra just because them being named “humanly” and modernly. The only problem consists in that realism was defined in the *direct opposition* to idealism. Idealism is a serious error and not to be treated with condensation to the effect of granting the validity of reasoning, but pitying a

deplorable blindness of an idealist's mind for what was deemed really important. Idealism is an error and nothing more.

The problem might be illustrated in the following manner. The physical beings are perceived as material first of all. Now, every material object is bound to infringe the integrity of the other object as far as it acts on it and the latter is not resilient enough to react – as expressed in the Third Law of Newtonian Mechanics. But if resilient indeed, the reacting must be no less physical. But, if humans were expected to be any different to material objects (i.e. to act and react without infringing the integrity of the others), their actions would have to be “harmless” in the sense of being not “that” material any material objects were. The problem of idealism might be *illustrated* in this way. Consequently, objects were to be sought immaterial and harmless in the aforementioned manner.

For a long time, it had been believed that light was immaterial. Anyhow, it is “less” material than any other physical objects are, for photons are deprived of mass, as known. Light can rebound from a surface “smooth enough” (i.e. endowed with the properties corresponding to the frequency of an electromagnetic wave), and the pressure exerted upon the object (the mirror) is barely measurable. The metaphor of light has been widely adopted as referring to the action of intellect. According to Thomas, it is about the manifestation of truth, and two notions are to be distinguished: lux and lumen. Only the latter (the light of an individual intellect) makes the manifestation possible. It is because of the act of abstraction carried out by *an individual* intellect that Aristotle compares it to light. The notion is adopted here *analogically* only. To the contrary, the Arab medieval thinkers believed that the abstraction is collective only and the “illumination” similar to that of e.g. the sun. Thus, light was believed to be an absolute manifestation (lux), and imagined to be mirrored in particular minds if erring unhampered amongst them when reflected. So, all those minds might be believed to be bereft of the natural material characteristics and be “humane” in the way no material objects can be. Thus, the possibility of being rebounded and reflected made those who acted as mirrors the participants of the existence proper to humans who ceased to be just physical beings. Moreover, people could – as it seemed – be rendered inoffensive with the help of those who were expected to be *perfect mirrors*, i.e. responsible for (re-)defining each one's personal identity (one's “concreteness”) – in the background of the collective consciousness, or the “mirror of eternity” understood in the way Hegel thought appropriate only. The same scheme of reasoning might underpin any realm of the human existence and is consequent upon the way the Arab medieval philosophers understood the world of ideas. In other words: it is the problem of the Enlightenment mentioned above. Humans are, in fact, defined as such just because being inoffensive to humanity.

There but one and unique way to make people develop all the potentialities they are naturally endowed with, and this without doing harm to the others. What is prerequisite is dialogue; parrhesia; the freedom of the word (the freedom of speech), which underpins the very foundations of the Western Civilization. No privileged intuition of the human truth exists, but the absolute (transcendent) truth is hoped to be found *above* them all. It is only due to this truth that the integrity of human being is preserved. “Humanists” boast the preservation, but the means they adopt make it impossible. The “theory” of modern science is at least partly responsible. Humanities happen to be such a theory of the infinite progress and general illumination.

Both physical objects in general and the human body in particular are not measurable adequately in the way scientism thought it only possible. In other words; the fact that the *natural* integrity is infringed if measured in that way only is bound to crop up sooner or later. It might be supposed that human actions are called right just because the majority of people are right-handed (and act more effectively than those left-handed) and the spatial adoptable to morals at least in this way. However, the fact that asymmetry exists in nature too is significant. Human body is symmetrical as for its outer look only. Although asymmetry exists in nature really, it is impossible to draw conclusions as to what is natural (and morally good) to man (and in keeping with his/her rational nature) from the science on nature *directly*. E.g. the motion of the human hand cannot be described adequately in the terms of physics only, since (as was mentioned above) the effects of this motion are qualitatively different. The signs written on a sheet of paper are more than just geometrical figures; their purport transcends the spatial temporal at least in the sense of the signs being possibly legible some years later on and in a different place too. The fact that they are first legible in a cultural context is not to the point, because some inscriptions happened to be deciphered whereas the ancient cultures they belonged to had been dead for a long time. So, the motion of the hand of the writer must be triggered by a principle that cannot be reduced to a mechanical agent. The principle rather rests in the mind than merely exists in it.

The natural opposition to motion is rest and might be supposedly associated with the aforementioned ether. But the implications of rejecting its existence after Michaelson and Morley are far-reaching. If there is rest in nature really and some frame of reference acceptable, it must be defined in another manner than it had been believed for some time.

According to Aristotle, the natural rest is that of a particular body and contrasted with its closest environment. As for the human body (brain, heart, hand), its rest must consist in a certain relation to the human environment too.

If some frame of reference similar to ether existed, some “chunks” of reality should be *imagined* to exist *in it* and the nature divisible into quantitative parts *imagined* to exist in the same way. The *real* (natural) parts are not definable by the quantitative background though. A particular nature is defined when contrasted with the environment (the closest one) and not as part of a totality. Similarly, a man cannot be identified as a part of “humanity”, although the latter is apparently constituted of these parts. No matrix exists similar to the three-dimensional space to put the objects on it. There is no privileged frame of reference and valid for all objects *indiscriminately*. There is but the closest frame of reference and valid as for a particular nature only. The fact might be concluded from the (interpreted) Special Theory of Relativity.

Consequently, if the motion of an object (a man is an object when present in the material world) is to be assessed as right (e.g. morally righteous), it is to be defined in the relation to the natural environment (the human family is such for an individual first of all). It is to be defined in the terms of the rest proper to its body. Spiritual peace is consequent upon this rest.

The problem of peace is a leitmotiv of the modern culture. Albeit widely acknowledged to be of pivotal importance for human existence, peace is in fact less appreciated than the vital mobility. The problem is, then, what accounts for both dynamics of human life and the natural rest man so desperately hankers after.

The rest of the human body depends, according to Aristotle, on the intellectual maturity. Children are restless as rather depending on the others than on themselves in this respect. Moreover, the very intellectual activity is compared to the natural rest (Physics, VII, c. 3, 247b – 248a). It is the intellect only that can make out the outlines of the closest human environment as distinctly as to spawn the concentration of the vital energy to the extent the animal instinct is unable to. The human rest is both more radical than the animal one and more effective in triggering the actions subsequently too. The vital activities issue from the activity of the intellect contemplating the closest environment one lives in. Naturally, the contemplation can encompass vaster and vaster swathes of the world and even reach beyond. Accordingly, the aim of the human existence can transcend all particular objects.

Should a *form* of totality exist on its own, all its parts will exist secondarily only and be definable accordingly. In this context the problem of *conformism* or conformity might be addressed. How far the alleged imperative should reach? Are humans expected and demanded to conform to the Totalitarian regimes too? If not, what is the *objective gauge* able to assess them as such (Totalitarian)? The question is all the more nagging as the Totalitarian systems of the 20th century failed to be believed to be Totalitarian not only by those who participated directly, but even by those who tried to “appease” them. Similarly, there is no humanity as possibly projected to exist independently of individuals. The human nature is common to all individuals, and the fact can be grasped by the intellect only. Humanity cannot be defined in the terms the extension and the scope of human activity, unless they both be understood analogically only. The righteousness of man’s activities, accordingly, is only possible if accepting the integrity of the human nature, which, however, cannot be done without the intellect. Each human activity can be possibly nocuous if not matched with the peace and contemplation on the environment we naturally *live in*. There is something of the sort to be found the family, in which children rather adhere to parents and find rest in the relation to them than are able to name the nature of the peace they live in. Still, they are expected to grow up anyhow and to judge things adequately. The alluring force of ideologies, on the other hand, might be explicable as aiming at infantilizing people.

Rest and motion are related to each other in such a way that Aristotle defines nature as the principle of them both. Accordingly, what is naturally right to man and behooving his/her human dignity is a derivative of the natural rest the activity issues from. As to what appears superficially, e.g. a chimpanzee’s paw might be *imagined* to move in the way the human hand does. Still, it cannot be *understood* adequately so just because an animal finds its rest e.g. in being saturated, whereas humans do not. They require more to be satisfied with their life. There is some precision in the motion of the human hand and proportionate to how firmly the forms from which the activities originate have been grasped. In fact, they are not imagined only. They are grasped firmly and immovably and this because of the intellect that is *essentially different* to the animal imagination and instinct. The forms human activities issue from might be less perceptible in the ordinary life. However, they appear just as forms and literally so when the activities in question are directed to *forming* things, in which their formal side is salient enough. The forms which the human intellect conceives are absolutely immovable and stable – the opposite of the animal ones, which are only relatively so.

The absolute horizon of the human natural activities is discovered by metaphysics. However, the natural principles all human actions originate from are assessed in Physics; for

the science on the soul is part of it. The sensual perception we share in common with animals is radically subservient to the intellect so that human activities that follow transcend all material objects.

The latter might be, true, so accustomed to that difficult to abandon. The pathway of the human life might be, accordingly, measured by the hackneyed activities and the horse blinds both desired and appreciated. Still, that the pathway be worth of the rational nature, it must not be hackneyed at all. It must be the Way of the intellect first of all; for it is the intellect that transcends the narrow boundaries of what happens to be accustomed to. The more deign of being human, the more difficult the pathway to embark upon; but at the same time more rewarding eventually. The schemes of thinking and clichés some happen to be imbued with might be desperately clung to. Moreover, those matrices might be believed to constitute what humans really are (their nature). Humans might live superficially if accustomed to those patterns, but are not what they deserve to be unless transcending all matrices radically. The “cultural” environment is more likely to obstruct the ultimate perspectives of the human existence than the natural one. This explains why the ecological movement is so popular nowadays. At least indirectly, the natural appetite for good as such has been perceived to be thwarted.

Clichés adopted replace each other and the choices happen to oscillate between the opposites, which was somehow appreciated by Hegel in his dialectics. Nothing, on the other hand, could have *objectively* guaranteed that what is now deemed good, will not be the opposite some time later on and vice versa. Metaphysics *can* so, as it is absolutely free in distancing any cultural context whatsoever. It is impossible to define man in the cultural context only; for the ultimate that defines man as such transcends infinitely them all. The human environment is known, named and accustomed to, but all the knowledge, the spoken of, and the accustomed to, must be eventually retraced to the First Source. Moreover, the more natural a human environment, the more likely it is to be what it should be – human and open radically to that Source. The environment that is both natural and human is obviously the human family first of all.

According to Aristotle, the deepest natural rest is associated with the highest natural activity, viz. the contemplation. It is, at the same time, the activity proper to the metaphysician. Thus, the words (*termini technici*) that a metaphysician utters are – paradoxically – of a secondary importance, because the principle the enables uttering them is more important. Moreover, not only words as commonly understood might be reflected upon and their principle discovered. The Word that the religion speaks of might be contemplated too, and perhaps incomparably more intensely.

Since its very beginnings, the human existence on the Earth has been accompanied by the foreboding as for the absolute horizon of the human life. Conversely: every human activity and the intellectual one in particular, aims at least indirectly at the ultimate. Man naturally tends towards the Transcendence, albeit is prone to stuck on the way to it. The conviction that the order of the universe has an Author is natural, and the philosophical proof differs from it in that it is simply more systematically justified (*Contra Gentiles*, III, 37) and consequent in retracing the most natural in man. On the other hand, to try and eradicate the conviction is both difficult and as inhumane as no other action can possibly be.

In the first sentences of “Metaphysics”, Aristotle says that man naturally tends to know causes. Although knowing them is precious in general, none of those particular ones can satisfy (when known) the appetite for the cognizance of the First Cause. But the causes (things) if not known only, but desired also, are bound to obstruct the ultimate. The activity of a metaphysician is personally disinterested though. Moreover, metaphysics does not put up with the cognition of any *particular* order of things, but aims at the cognition of the Author of the order of the whole universe.

It is not about assuming any fundamental option; it is about discovering the fundament of the human existence and the most natural one. It is about following the most natural in man; for truth itself has the enticing force able to attract the attention of a man and lead towards the until but indistinctly known.

The First Cause is – for the very fact of being first and ultimate – more powerful than any particular cause or any set of them, no matter how handy arranged. The relations of things might be, true, so cleverly arranged as to shut out a *particular* way leading to the ultimate and make humans despair of attaining it at all. Still, as soon as one possibility is precluded, the other one must appear nonetheless, for the Transcendence is the Absolute Master of the world. No will can resist it⁹⁹, as all creatures are subservient to it.

Summa Theologiae, I, 19, 6, c. Respondeo dicendum quod necesse est voluntatem Dei semper impleri. Ad cuius evidentiam, considerandum est quod, cum effectus conformetur agenti secundum suam formam, eadem ratio est in causis agentibus, quae est in causis formalibus. In formis autem sic est quod, licet aliquid possit deficere ab aliqua forma particulari, tamen a forma universali nihil deficere potest, potest enim esse aliquid quod non est homo vel vivum, non autem potest esse aliquid quod non sit ens. Unde et hoc idem in causis agentibus contingere oportet. Potest enim aliquid fieri extra ordinem alicuius causae particularis agentis, non autem extra ordinem alicuius causae universalis, sub qua omnes causae particulares comprehenduntur. Quia, si aliqua causa particularis deficiat a suo effectu, hoc est propter aliquam aliam causam particularem impediendam, quae continetur sub ordine causae universalis, unde effectus ordinem causae universalis nullo modo potest exire. Et hoc etiam patet in corporalibus. Potest enim impediri quod aliqua stella non inducat suum effectum, sed tamen quicumque effectus ex causa corporea impediende in rebus corporalibus consequatur, oportet quod reducat per aliquas causas medias in universalem virtutem primi caeli. Cum igitur voluntas Dei sit universalis causa omnium rerum, impossibile est quod divina voluntas suum effectum non consequatur. Unde quod recedere videtur a divina voluntate secundum unum ordinem, relabitur in ipsam secundum alium, sicut peccator, qui, quantum est in se, recedit a divina voluntate peccando, incidit in ordinem divinae voluntatis, dum per eius iustitiam punitur.

The will of God must needs always be fulfilled. In proof of which we must consider that since an effect is conformed to the agent according to its form, the rule is the same with active causes as with formal causes. The rule in forms is this: that although a thing may fall short of

⁹⁹ Super Sent., lib. 4 d. 46 q. 1 a. 2 qc. 1 arg. 3. Sed nihil est quod restringat voluntatem Dei; unde Matth. 20: an non licet mihi quod volo facere? Nec aliquid etiam ei resistere potest; quia in Psalm. 113, 3: omnia quaecumque voluit fecit; et Rom. 9, 19: voluntati ejus quis resistet? Ergo ipsa ejus voluntas est ejus iustitia.

any particular form, it cannot fall short of the universal form. For though a thing may fail to be, for example, a man or a living being, yet it cannot fail to be a being. Hence the same must happen in active causes. *Something may fall outside the order of any particular active cause, but not outside the order of the universal cause*; under which all particular causes are included; and if any particular cause fails of its effect, this is because of the hindrance of some other particular cause, which is included in the order of the universal cause. Therefore *an effect cannot possibly escape the order of the universal cause*. ... Since, then, the will of God is the universal cause of all things, it is impossible that the divine will should not produce its effect. Hence *that which seems to depart from the divine will in one order, returns into it in another order*; as does the sinner, who by sin falls away from the divine will as much as lies in him, yet falls back into the order of that will, when by its justice he is punished. (Literally translated by Fathers of the English Dominican Province).¹⁰⁰

It might be tried to cut off the influence of the First Cause, but the action is bound to turn against who accomplishes it eventually. It might be effective *for some time* indeed, and the harm done to the others real, but bound to be frustrated in the end.

Everything depends upon whether the nature in man is seized adequately and the objectives deign of the name of being human. Statements, in turn, are adequate if departing from naked facts (which scientia naturalis does). Secondly, the statements thereof might be called (as in Aristotle) *scientific facts*. But the facts as related and interpreted are consequent upon those naked ones. On the other hand, no facts can be deemed as banal as not worthy reflecting upon. The example of the human hand, adduced above, is such a fact.

Before the words of the present book took on a definite shape, my hand had been moving and the movement corrected and adjusted to the words conceived in my intellect; to the intellectual purport I had tried to convey. No matter whether the purport accepted or rejected, the movement of my hand was able at least potentially to transcend the spatial temporal and project the meaning about to be conveyed into the future. For all possible deficiencies of the book, I hoped that the words written down would be read in the same sense I intended. Everything depended on to which extent the hope would be substantiated in the real word. Be that as it may, the very possibility of the human communication consists in that thoughts can *be communicated anyhow*. The truth we try to communicate is more necessary for the human existence than the air we breathe. The possibility of the auto-destruction of the human race, if realized, would have been connected, no doubt, with the despair of communicating the words of truth to each other.

The human spirit might be believed to be included in the artifacts made by humans like a Genie in the bottle, as it was the case in Hegel. The reconciliation with what is possibly alienated, or, if you like, summoning of this “spirit” might be, consequently, believed to be a token of hominization. There were, according to Hegel, many forms the “spirit” had assumed throughout the history of man. Anyhow, at every stage of the history, the man was expected to conform, no matter how abhorrent a form devised by humans might appear to him/her.

Everything depends on how to understand the relation of the parts to the totality. Is it to be seized literally, and the parts be accepted as such, i.e. on equal terms with what makes up the whole? Or rather should they be understood as means only and both *subservient and*

¹⁰⁰ <http://www.newadvent.org/summa/>

un-autonomous with respect to the ultimate, which cannot be called the totality in the strict sense of the word, but analogically only?

The very notion of conformity is worth reflecting upon. According to Thomas, metaphysics is unable to recognize the *form* of the ultimate. It must put up with stating its existence; its nature being *naturally* not-cognizable to man. But, at a certain point of the human history, a “conformity” occurred indeed. No human words can be endowed with a magic power to make things real. But the Divine Word assumed the human form (nature) indeed. The religion speaks of it. There was, in the history of humanity, but one genuine “conformism” resulting from a perfect engagement of Who procured it. A unique possibility was opened to participate in the inner life of God (in the Trinity’s life), because just one Person joined two natures (two “forms”) assuming human flesh and soul. The form of divinity was connected with the form of humanity without breaching the integrity of them both. The event is not practicable by any human person but that One.

There is no need to conform save to that which perfectly answers the deepest natural human desire. All has been done (initiated) on the other part. But, metaphysics and philosophy in general, must acknowledge that the words it utters are completely ineffective when compared in this respect with the Divine Word. The possibility of allotting a power to philosophy it cannot have must be discarded for *purely rational reasons*; i.e. for the sake of philosophy being what it can only be, viz. natural to man.

There is a special problem connected with the specificness of the human motion and associated not that much with that purely animal one as rather with that registered on the carriers of the artificial memory.

Zeno of Elea imagined motion in general as a series of snapshots, i.e. static elements. Obviously, he did not anticipate the discovery of cinematograph, but when Bergson addressed, in the 20th century, the problem of what he called the fragmentation of motion, it was just cinematograph that came to his mind as illustrating the problem. Bergson deplored the fact that the continuity of motion was disregarded and motion fragmented like frames of the films were then. Still, the problem might be reworded as that of how to match the continuity of motion with grasping possibly its parts after all. For in handbooks of physics motion is normally illustrated by snapshots really and some cognizance thereof expected to be obtained in this way. In other words: both continuity and discontinuity is to be allotted to the physical phenomena we normally see. Bergson tried to rescue the “continuity” relegating it to the sphere of the human consciousness and separating it from what is normally called science: Les sciences travailleraient plutôt « *dans l’élimination de la durée* ». Thus the problem was not that much solved as rather avoided. However, *something* was proved indeed, viz. the fact that motion as such is not adequately seized on the artificial carriers created by man. It is the problem of the image culture mentioned above. The images, snapshots, or whatever the name, do not convey the adequate information about the world we live in. The digital carrier can record not only images but sounds too. Are, then, the recorded ones any different to those heard in a concert (live)? It might appear so to an untrained ear only. For the ear of a musician hears the essential difference between the sounds recorded and sung or played live. No professional musician can dispense of the contact with the music played live. Apparently, the artificial carriers affect the very essence of the recorded. We do not see the same things on TV we normally see with naked eyes.

Bergson was right in spotting the problem, although the solution was inadequate and the reaction to Empiriocriticism (the fragmentation of motion) excessive. Nature, according to Aristotle, is principle of both motion and rest, and both account for the specificity of the principle they originate from. Some forms (images are that) can rest on artificial carriers of information, but they die in the moment they come to rest this way. To the contrary, the intelligible forms our mind conceives, rest in it dynamically and are so vivid that able to trigger a genuine life activity. The artificial forms can become simulacra and obstruct the Ultimate. The vivid natural forms gathered in the intellect, to the contrary, might become means to get to know and to desire the Ultimate.

There is a natural counterpart of motion understood as mere changing a place. This counterpart can be associated with the potential energy of an object. Analogically, there is a potential (an especially the intellectual one) in the human nature that accounts for its dynamics. Properly speaking, there are two principles the human activity originates from as long as they are human as such, i.e. rational. The one is absolutely active (and, consequently, immovable in the physical sense); the other is *relatively* immovable, i.e. autonomous towards blind impulses of emotions. This is called the will. It is, however, “moved” (by the extension of the word) by the intellect and so *relatively active* only.

The autonomy of the intellect is so far-reaching that able to trigger the actions both good and evil. For the more perfect a cognition, the vaster possibilities opened. The higher a place it occupies on the way to the Ultimate, the greater the danger for the intellect to precipitate. The more commanding the achievements of particular sciences guided *originally* by the disinterested pursuit of truth, the more likely they might be believed to be self-sufficient. But some day, human must awake to the fact; the human intellect might prove to be destitute after all if not aimed at the *Absolute* Truth guided by the *disinterested* pursuit of truth.

But on the other hand, the intellect is “moved” by the will too, and this according to all its *secondary* acts, i.e. those not connected with the first principles *directly*. Thus, albeit the knowledge is not a moral virtue, the *desire* for knowledge and a discipline of life assumed so as to achieve it, is decidedly such a virtue. It might be called studiositas. The vice opposed is ignavia (sluggishness).

The only conversion valid for obtaining the most precious in the human life is that of the will informed by the intellect. No intellectual conversion save that of *conversio ad phantasmata*, and the abstraction of the form of the intellect, is possible. Philosophy cannot save men, and all the less sciences can. (Perhaps, the *genuine* philosophy is just more acutely aware of the fact than any other sciences). The judgment connected with the conversion the religion speaks of, regards first of all a person involved; the judgment of the intellect and proper to metaphysics regards, to the contrary, the other things and aims at identifying the possible obstacles on the way to the ultimate. Because the variety of *beings* that are normally seen make it that the ultimate is not directly accessible and being as such is – as Dionysius says – a problem rather than a readily accessible medium of the cognizance of the ultimate. The judgments proper to metaphysics regard the *particular modes of being* according to the variety of forms grasped intellectually (species intelligibiles).

8. The problem of the ontological proof

The precise significance of idealism comes to light in facing the most difficult philosophical problem: the problem of the existence of God. An idealist would rather speak of the “idea of God” than of the real God. Idealists prefer thinking to stringent reasoning as stipulated in Aristotle’s Posterior Analytics. Consequently, the fact that God exists is not demonstrated by an idealist, but rather His “idea” “witnessed”, and the notorious: “the worse for the facts” seems to be a mark of idealism. Immanuel Kant characterized his own system as “transcendental idealism” and the “idea of God” replaced in it the real God. The fact that God exists cannot – to Kant’s mind – be demonstrated, but His existence postulated only.

A 592; B 620.

It is evident from what has been said that the conception of an absolutely necessary being is a *mere idea*, the objective reality of which is far from being established by the mere fact that it is a need of reason. On the contrary, this idea serves merely to indicate *a certain unattainable perfection*, and rather limits the operations than, by the presentation of new objects, extends the sphere of the understanding. But a strange anomaly meets us at the very threshold; for the inference from a given existence in general to an absolutely necessary existence seems to be correct and unavoidable, while the conditions of the understanding refuse to aid us in forming any conception of such a being.¹⁰¹

The words “this idea ... rather limits the operations ... of the understanding” are significant. For centuries before Kant, it had been believed that the path to God (and Thomasian Ways too) are the pathways of freedom. But freedom is – according to Kant – a “transcendental idea” only and situated on equal terms with the idea of God in the realm of pure thinking. Man was noumenally free only (hence “limits”), which is to say: the finality of his/her existence was infinitely distant from the idea of God. It was determinism which necessitated that Kantian idea of freedom. For a material particle, a determined, as it seems, trajectory of motion exists (determined by its momentum and position in a given t_0). But if human body had been a sum of particles, the trajectory of its motion must have been determined also and the freedom of man existing in the material world would be a bogus. Similarly, the End of this life would have been an unattainable ideal and nothing more. But the 20th century’s scientific discoveries falsified the “scientific” assumption Kant deemed unshakable. There is, in nature, an “inverse” determinism (the conditional, final, teleological one). Human soul must not be a monad (Leibniz), but a telos (finis, end) which organizes human body. The same teleological determinism serves a safe basis for the proof of the existence of God. Unfortunately, Kant was

¹⁰¹ THE CRITIQUE OF PURE REASON by Immanuel Kant translated by J. M. D. Meiklejohn, CHAPTER III. The Ideal of Pure Reason. SECTION IV. Of the Impossibility of an Ontological Proof of the Existence of God.

unable to anticipate the discovery, and that is why he rejected the proof from the factuality of the world (or rather failed to notice its validity). As a genuine idealist, Kant turned to ideas; he attached a special importance to the proof which tried to deduce God's existence from the idea people allegedly have of Him. The proof, originally elaborated by Anselm of Canterbury, was ascribed by Kant to Descartes and chosen as an icon of thinking about God. The proof was denied by Thomas a scientific status, but Kant was ignorant of Thomas' *metaphysical* critique and the proof deemed paradigmatic for metaphysics.

A 602; B 630

The celebrated ontological or Cartesian argument for the existence of a Supreme Being is therefore insufficient; and we may as well hope to increase our stock of knowledge by the aid of mere ideas, as the merchant to augment his wealth by the addition of noughts to his cash account.

A 592; B 620.

Philosophers have always talked of an absolutely necessary being, and have nevertheless declined to take the trouble of conceiving whether- and how- a being of this nature is even cogitable, not to mention that its existence is actually demonstrable. A verbal definition of the conception is certainly easy enough: it is something the non-existence of which is impossible.¹⁰²

If the ontological proof was assessed as paradigmatic for the idealist, all other proofs were tried to be reduced to it. The cosmological proof (whatever the meaning ascribed to it by Kant, and the knowledge he had of it) was included.

A 604, 605; B 632, 633

The cosmological proof, which we are about to examine, retains the connection between absolute necessity and the highest reality; but, instead of reasoning from this highest reality to a necessary existence, like the preceding argument, it concludes from the given unconditioned necessity of some being its unlimited reality. The track it pursues, whether rational or sophistical, is at least natural, and not only goes far to persuade the common understanding, but shows itself deserving of respect from the speculative intellect; while it contains, at the same time, the outlines of all the arguments employed in natural theology - arguments which always have been, and still will be, in use and authority. These, however adorned, and hid under whatever embellishments of rhetoric and sentiment, are at bottom identical with the arguments we are at present to discuss. This proof, termed by Leibnitz the *argumentum a contingentia mundi*, I shall now lay before the reader, and subject to a strict examination.

It is framed in the following manner: If something exists, an absolutely necessary being must likewise exist. Now I, at least, exist. Consequently, there exists an absolutely necessary being. The minor contains an experience, the major reasons from a general experience to the existence of a necessary being.

¹⁰² Ibid.

In this cosmological argument are assembled so many sophistical propositions that speculative reason seems to have exerted in it all her dialectical skill to produce a transcendental illusion of the most extreme character. We shall postpone an investigation of this argument for the present, and confine ourselves to exposing the stratagem by which *it imposes upon us an old argument in a new dress*, and appeals to the agreement of two witnesses, the one with the credentials of pure reason, and the other with those of empiricism; while, in fact, it is only the former who has changed his dress and voice, for the purpose of passing himself off for an additional witness.¹⁰³

According to Kant, existence was not a predicate. Grammatically, as a complement, it must have been distinguished from copula and could never be identified therewith. One and the same word could not be – as it seems – a copula and a predicate (complement) at the same time. The “is” could not be expected to convey the information additional to what was conceived in an idea. The notion of 100 thalers possibly existing did not differ from those existing really. Do they not indeed?

Now, these two concepts differ, for all argumentation Kant deemed convincing. They do not differ *directly* though; and the objections raised by Kant against the scientific status of the ontological proof are justified. It is impossible to elicit the real existence from no matter how sophisticated ideas. Still, the concepts *differ indirectly*. The difference overlaps with that of the ontological and cosmological proof.

It goes without saying that we have a certain notion of God when embarking on the systematic demonstration of His existence. Still, not an idea is conceived, but rather a certain *objective correlation* of the objects of the outer world. The fact that the correlation is not perspicuous at first glance makes it that a systematic proof is indispensable. On the other hand, if speaking: “I have no slightest idea ...” one admits the lack of any correlation of the objects already known.

According to Thomas, (Contra Gentiles, III, c. 37) a certain notion of “Something (existing) above” the natural course of events accompanies all human cognition. In this sense, the cognizance of God (albeit not His idea) is naturally *borne* in human mind; for being bereft of it is tantamount to having lost one’s *existential bearings* altogether. It is natural for man to assume that the Supreme (or at least a Superior) exists above nature. On the other hand, the notion of God is no different to other concepts as it refers to some objects known empirically; i.e. acting in a definite manner. The only difference to other (ordinary) concepts consists in that the Superior is meant to be just *above* the objects known naturally; which is to say: is meant to be *in a definite causal relation* to them, which is significantly less than being conceived as an “idea”.

All human concepts must be dependent on some events known empirically. It is hardly believable that e.g. a child could conceive a notion of the horse without seeing a specimen that can be described as a horse. This seeing consists in severing it from what might be

¹⁰³ SECTION V. Of the Impossibility of a Cosmological Proof of the Existence of God.

superficially similar to it. Consequently, if analyzing our concepts we must resort to empirical cognition, which was the case with Kant indeed.

A 600, 601; B 628, 629

For the conception merely enables me to cogitate an object as according with the general conditions of experience; while the existence of the object permits me to cogitate it as contained in the sphere (*Kontext*) of actual experience. At the same time, this connection with the world of experience does not in the least augment the conception, although a possible perception has been added to the experience of the mind.¹⁰⁴

Denn durch den Begriff wird der Gegenstand nur mit den allgemeinen Bedingungen einer möglichen empirischen Erkenntnis überhaupt als einstimmig, durch die Existenz aber als in dem Kontext der gesamten Erfahrung enthalten gedacht; da denn durch die Verknüpfung mit dem Inhalte der gesamten Erfahrung der Begriff vom Gegenstande nicht im mindesten vermehrt wird, unser Denken aber durch denselben eine mögliche Wahrnehmung mehr bekommt. Wollen wir dagegen die Existenz durch die reine Kategorie allein denken, so ist kein Wunder, daß wir kein Merkmal angeben können, sie von der bloßen Möglichkeit zu unterscheiden.

Kant speaks of “the general conditions of *possible* experience” and the omission (in the English translation) of “möglichen” affects the significance of the quote. Moreover, the words “*actual* experience” do not correspond to: “der gesamten Erfahrung”, and the words: “contained in the sphere of actual experience” might retouch what cannot be called otherwise than a sheer nonsense. Kant did not use the word of *Späre*, but that of *Kontext*. Now, the very notion of context implies being part contrasted with its closest background. Even if taken literally, context implies excluding some more distant parts so as to ascertain to those nigher ones. Obviously, “die *allgemeinen Bedingungen* einer möglichen empirischen Erkenntnis” Kant is speaking of imply a contradiction. Nothing can be positively known if set against a “totality”. A *special* experience is required to settle what is normally called a context.

It is an undeniable fact that the ontological proof addresses *directly* the most important philosophical notion; i.e. that of being. If Kant had accused Descartes of approaching the problem of the being, and the problem of the Supreme Being too, from a wrong direction (approaching it *directly* is a wrong “direction” really), he would have been right. But Kant accused Descartes of approaching the problem of the Supreme Being at all, seeing no other approach that that adopted by Descartes. If Kant’s objections are of any value at all, they must regard the *mode* the ontological proof approached the subject matter of the supreme science. No direct insight into being is possible. Being as such can only be known after departing from various modes of being; i.e. from what-is-in-a-definite manner; what acts in the way it can be expressed by ordinary verbs.

Esse, Sein, Being is apparently different to all other predicates and verbs. The problem of being is that of imaging being as general as despaired to be grasped in a special (i.e. scientific) notion. All other verbs express some kinds of acting (motion) i.e. being-in-a-way,

¹⁰⁴ SECTION IV. Of the Impossibility of an Ontological Proof of the Existence of God.

but the *specifics* of the Thomasian formula *ens inquantum est ens* consists in that it is being-*on-the-way*; *on the pathway* to the Ultimate. The notion of being as such must be substantiated in various instances of being-such-and-such; i.e. what exerts a special kind of motion. The being of the idealist is incapable of it, obviously enough, but Kant tries to “analyze” it nonetheless.

A 598; B 626.

Being is evidently not a real predicate, that is, a conception of something which is added to the conception of some other thing. It is merely the positing of a thing, or of certain determinations in it. Logically, it is merely the copula of a judgement.¹⁰⁵

The analysis is meant to undermine the validity of the proof of the existence of God in general.

A 599 B 627

Now, if I take the subject (God) with all its predicates (omnipotence being one), and say: God is, or, There is a God, I add no new predicate to the conception of God, I merely posit or affirm the existence of the subject with all its predicates - I posit the object in relation to my conception. The content of both is the same; and there is no addition made to the conception, which expresses merely the possibility of the object, by my cogitating the object - in the expression, it is - as absolutely given or existing. Thus the real contains no more than the possible. A hundred real dollars contain no more than a hundred possible dollars. For as the latter indicate the conception, and the former the object, on the supposition that the content of the former was greater than that of the latter, my conception would not be an expression of the whole object, and would consequently be an inadequate conception of it. But in reckoning my wealth there may be said to be more in a hundred real dollars than in a hundred possible dollars - that is, in the mere conception of them. For the real object - the dollars - is not analytically contained in my conception, but forms a synthetical addition to my conception (which is merely a determination of my mental state), although this objective reality - this existence - apart from my conceptions, does not in the least degree increase the aforesaid hundred dollars.¹⁰⁶

Let us analyze the notion of 100 thalers. There are, in the English translation, 100 “dollars”, which is understandable: a sum of money we normally use is concerned, whereas the kind of tender does not matter. Thus, I would rather speak of 100 Euro here. The sum, if taken abstractedly, does not include its existence, obviously enough. But it is not tantamount to saying that it is equally “abstract” for me. It has a definite existential context: of my being in the world; the context of working, spending, economical security etc., etc. My – in brief – *life motion* substantiates the “abstract” notion of 100 euro. There is nothing in the *sheer notion* of 100 Euro that could but hint its real existence, but there is something really material in my earning the sum. Analogically, we do not depart from any “abstract” idea of God so as to

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

prove His existence. *We do not add anything* to it. To the contrary: we rather *subtract* something therefrom. The notion of God's existence *is diminished in our minds* this way, because we cannot see God's essence which only equals His existence. But on the other hand, the notion of God is dissimilar to other practical notions (that of 100 Euro is such), which are "valuable" (subjectively important) for me only, in the material context I live. God's existence is *primarily* (and the primacy grasped in metaphysics) *important existentially for the material world* as such (*not for me only*), because it cannot exist without God. We cannot approach God's existence directly, but we can analyze *the coexistence of the physical world* with its Cause; the relation of the world to It. We might call it, if it pleased, a context of the notion of the Supreme Reality.

The idea of 100 Euro is equivalent of my working and economical safety too (I expect the government not to finance a budget deficit from my pocket, which would redefine the sum of 100 Euro). My life is real in this context and "measured" by the aforementioned sum of 100 Euro to some extent. Similarly, the notion we have of God is a hostage to the order of cosmic relations possibly analyzed and analyzable. My economic safety demands that the 100 Euro have *the same relation* to all human activities my personal activity depends on (the relation expressed by the allegedly abstract "100 Euro"). The "is" ascribed to it is not abstract, but some are really responsible for its validity. Analogically, the allegedly abstract notion of God is – as for its existence – substantiated in the system of relations of real things. Them being dependent upon the Ultimate Cause is the "is" of the conclusion of the proof in question.

The notion of being and that of the subject matter of metaphysics were elaborated in a relatively *complex cultural intellectual context*. What Kant himself says about them both in *The Critique of Pure Reason* bears a testimony to that the context was unknown to him. Using any objects at all (perhaps the material ones first of all) requires knowing the entire cultural (and material) context they appear in and can be known only. The more sophisticated an object (or artifact), the more definitely related to others in a definite order (departing from those highest ones). E.g. using measuring instruments requires knowing the objects essentially related to it, and constituting somehow its very essence. The problem is especially important as for signs. A language which one does not know poses a special barrier and restricts the scope of possible activities and of freedom consequently too. It is not only the problem of foreign languages. Latin had not been such for Europeans for centuries. Still, if the knowledge of it went into oblivion, it is rather *a sign* that something important was lost first of all; viz. the continuity of the European heritage was broken. The notion of being (elaborated by Parmenides, Plato and Aristotle and bequeathed to the Middle Ages), might appear to some as mysterious as a digital camera to a savage. The existence of a particular object is instilled in the cultural context of the specific experience proper to a given level of the development of the civilization.

Again, are the real hundred thalers any different to imaginary ones? They do not differ directly and might be deemed the same if regarded superficially only. Still, they differ as to the context they appear in. The "is" of the statement "There is God" implies a context of reasoning, which might be easily overlooked by a casual observer. This context is provided in the kinetic proof of the existence of God, and was, for all we know, completely unknown to

Kant. This is the context of being substantiated in manifold modes of being; i.e. being-in-a-special-way, perceptible in the *special* experience of motion.

The “is” of the statement in question is a hostage to the context the statement is uttered. This context makes for the “is” being really related to something besides bare words; i.e. to the experience of being-such-and-such (motion). Kierkegaard might have been right in claiming that it is impossible to demonstrate the existence of anybody (God included). For it is not the naked “is” superadded to a sophisticated idea of God that is concerned. The kinetic proof demonstrates the coexistence of the world with its Transcendent Cause, not the existence of God taken separately from the world. If taken in such a manner both the “idea” of God (knowledge of His essence) and his existence is completely unknown to our natural abilities.

The statement: “hundred thalers exist” can have a positive meaning if depending on its context. This context might be supposed to be analyzable up to its minute elements. John Locke tried to name them. Unwillingly, and – as he puts it – for the lack of a better word, he avails himself of the term of idea. And this is the core of the problem. The problem consists in *copying* words onto the real world instead of explaining how words can be formed departing from what they are not and cannot be; i.e. facts. In Locke, complex ideas (the idea of God included) must be formed from the primitive ones. Apparently, nothing save an idea can be obtained from computing ideas. Consequently, man was believed to be imprisoned in the cage of consciousness (made up of ideas), which is in the perfect accordance with the quote adduced at the beginning of the Section. Perhaps, some just relish in being decoyed into that hope of unattainable ideal; this state of consciousness.

A sophisticated artifact might seem for a barbarian similar to other ones not because of being so, but because of being undistinguished and confused with others. The “is” of the statement “There is God” might seem similar to the other “is” just because regarded superficially only and bereft of the context it can only exist in.

Aristotle’s „is” is pregnant with meaning and substantiated in the demonstrations departing from facts, in which causes and effects coexists and are differentiated subsequently. No one is justified in assuming that the primitive data of experience are “ideas” of “bundles of ideas (properties)”, but everyone must be hold responsible for statements relating bare facts. If scientists (and philosophers) are any different in this respect, they are just *more* responsible.

Kant is outspoken about the inability to break free from the magic-spell circle of the words (the ideas). Man was unable to liberate from it and advance further.

A 636; B 664

Now I maintain that all attempts of reason to establish a theology by the aid of speculation alone are fruitless, that the principles of reason as applied to nature do not conduct us to any theological truths, and, consequently, that a rational theology can have no existence, unless it is founded upon the laws of morality. For all synthetical principles of the understanding are valid only as immanent in experience; while the cognition of a Supreme Being necessitates their being employed transcendentally, and of this the understanding is quite incapable. If the empirical law of causality is to conduct us to a Supreme Being, this being must belong to the

chain of empirical objects - in which case it would be, like all phenomena, itself conditioned.¹⁰⁷

The experience Kant is speaking of is quaint indeed. For the experience of the totality of possible cognition is concerned (“die allgemeinen Bedingungen einer möglichen empirischen Erkenntnis”). It is really astonishing to pretend to have an insight into this totality. Some conditions might well come to light after Kant death and some might well have gone unnoticed by him himself. Is this possibility to be discarded in advance? A special difficulty is posed by the advocates of the validity of the theory of evolution. If human nature evolved and transformed as to its essence, all previous forms and possibilities of cognition would change too. If the constant human nature had not existed, no possibility would appear to define its cognitive possibilities peremptorily, for they would be relative to a given point of the history only. Kant tacitly assumed that human nature is constant; otherwise the deduction of the a priori possibilities thereof would be impossible.

Putting aside the problem of evolution, it must be observed nonetheless that all human possibilities are known and knowable after some acts respecting them having been elicited. This holds true as for those somatic ones, obviously enough. Nobody knows whether able to ascend a mountain until he/she tries to. Moreover, a pupil’s personal abilities come to light only after being fostered and given possibilities to unfold without restrictions idealists are so dearly attached to. The possibilities are not known save after some acts performed and unhampered. There is no use in putting the horse before the cart. No one can positively know whether he/she is able to do anything at all unless one tries to do it.

Apparently, the experience Kant is speaking of is quite different from the Greek *empeiria*, which was a cornerstone of the European science and philosophy. The latter triggered the progress of the Civilization, whereas the Kantian one infected it with the germ of destruction. Man was doomed to be spell-bound in the world of “ideas”.

A 639; B 667

In whatever way the understanding may have attained to a conception, the existence of the object of the conception cannot be discovered in it by analysis, because the cognition of the existence of the object depends upon the object’s being posited and given in itself apart from the conception. But it is utterly impossible to go beyond our conception, without the aid of experience - which presents to the mind nothing but phenomena, or to attain by the help of mere conceptions to a conviction of the existence of new kinds of objects or supernatural beings (*überschwenglicher Wesen*).

According to Kant, the transcendental idea of God motivated the progress of science. But the idea vanished in the haze shortly after his death. Advancing the very Kantian principles, philosophers proved the opposite of what the Father Founder claimed. The “unity of philosophical experience” Gilson speaks of is instructive here.

The real difficulty Kant faced consisted in settling the ontological status of things. The problem was addressed in PREFACE 7. Are they real and the objective reality is to be sought

¹⁰⁷ SECTION VII. Critique of all Theology based upon Speculative Principles of Reason.

besides that “subjective” one (Descartes, Kant)? Or are they just instruments similar to the material ones but just more complex? The problem consists in that signs are located just at the border of the human mind and the physical world. Accordingly, they might be tried to be reduced to either of them.

It is up to a civilized man to use instruments as effectively as possible. Signs are instruments indeed, albeit not used and useable apart from the context they have been elaborated in. They must not be ignored, neither, however, must they be deified. They might become idols and be cherished, but the real human liberty consists in the ability to *transcend* those no matter how sophisticated ones and to *see what is beyond*. They must be pellucid so as to show the way to the Ultimate. Alas, they happened to be the opposite and obstruct It.

Human appetite towards the Ultimate is ineradicable. It might be tried to be harassed to some particular objectives and the very objectives, in fact, deified. The liberty, in this context, might sound of a bitter mockery. Humans happen to be enthralled in a “world” (of ideas) created by humans. Human spiritual aspirations happen to be hampered to the effect of humans themselves being dwarfed.

Let us repeat the phrase quoted above. Καὶ ἐγένετο λόγος κυρίου πρὸς με λέγων (And the word of the Lord came to me, saying; Et factum est verbum Domini ad me, dicens) (Jer. 1. 4). The manner God operates (“Lord” means in Hebrew the Fullness of Being) revealing Himself makes it that the “is” of His actions is identical with His essence. That is why (according to Thomas) God is the subject matter of theology: the science of the Revelation. He cannot, however, be subject to any natural reasoning except for His own act of understanding. In metaphysics, it are rather things shown to be subject to Him. God is not (according to Thomas) the subject matter of metaphysics. But He should have been if a metaphysician tried to conceive an idea of God first and demonstrate His existence next. In that case, God would have been subject to his/her reasoning. The real metaphysician subjects his/her reasoning to what appears to be ultimately knowable. The relation of dependence of the entire world upon its Transcendent Cause is shown in the proof of the existence of God.

9. The spiritual relation of paternity. Matrices of cognition. Their disconnection from reality

Every human activity consists in ordering relations and the cognizance that precedes it must show them being ordered originally. The fact is obvious at least as to the forms of relations existing in, and proper to, a culture and created in it. A man is civilized as long as preserving its rules, obviously enough. Still, it has been believed, after Kant, that no rules exist (the natural ones) that *preceded all cultures* whatsoever and multipliable according to the level of a given civilization. However, the principles of the Western Civilization (laid down by Greeks) were characterized by their *natural* foundations. No “Europocentrics” defined it, but the openness for the principles (The Principle) that actuate human life universally. That human deeds be good, the relation to *natural* objects must be known first. Thus, man’s being-in-the-world is essentially different to that of e.g. a stone; for a stone cannot stand between

material objects so as to change the relations to them, whereas the intellect can *under-stand* them and order them too after discovering natural laws.

Mathematics considers a certain type of relations amongst things. It is, at the same time (and this due to the type of abstraction called the formal one), proper to it to drop the material and envisage the formal of the objects; for the very notion of abstraction implies dropping. According to Thomas, the only material considered in mathematics is *materia intelligibilis*; i.e. all natural substrata seized *indiscriminately*. Mathematics, for all its exactness (or perhaps just because of being self-restricted in this way), cannot discriminate amongst different natural substrata, and *materia intelligibilis* encompasses them all. Moreover, the very fact of *something* being dropped might well go unnoticed, albeit a certain vague sentiment as to the fact might remain present.

The fact that mathematics should apply to the totality of the universe is by no means identical with that it should apply to its parts by the same token. For distinguishing the system and environment is granted to be but a matter of convenience, and thus environment (a part of the totality) might be seized rather arbitrarily. Nothing save praxis, can guarantee that the model adopted would be efficient in a broader perspective of time and different material conditions. The fact was granted by neo-positivists, but its consequences not willingly reflected upon.

The relation of parts to the totality seems to be pivotal. Experiment, by the very nature, tackles parts only. Thus, an accumulation of the effects *might* but *need not* make for new objects to be known. Neither specialization nor generalization of ideas can guarantee the progress, unless they are understood analogically, as demanded by Aristotle. If both specialization and generalization are understood extensively only, no definite relation to their outcomes will be visible. Sheer extension of the scope of interest cannot warrant the value of conclusions.

The same relation might be believed to define humanity too (it does, in fact, to some extent only). People happen to be both conscious of their presence in (participating of) the common, and of their “concreteness” foreign (as it might be believed) to the rational (the totality; the commonly knowable) in them. Being conscious might be equaled to being initiated in deciphering the reality according to various “tongues of reality” proposed. Still, for all their differences, those tongues all share in common the assumption that they are archetypes of cognition: matrices which account for humans being what they should be: rational. To the contrary, to Aristotle’s mind, human rationality is founded upon a special (pre-linguistic and personal) *relation* to the outer world.

We name things according to how our *mother-language* enables us to. Thus, the conceptual language is indispensable for finding one’s own place in the environment and for acting in general too. It is impossible to live in the world in which things should be unnamed. In science, the conceptual language depends on accomplishing a special kind of abstraction called *abstractio totius*. Thus, physics, in the modern sense of the word, unfolds between the two types of abstraction mentioned above by Aristotle (Phys., II, 2, 194a). The primitive relation to the environment is presented by Aristotle on the first pages of his *Physics*.

When the objects of an inquiry, in any department, have principles, conditions, or elements, it

is through acquaintance with these that knowledge, that is to say scientific knowledge, is attained. For we do not think that we know a thing until we are acquainted with its primary conditions or first principles, and have carried our analysis as far as its simplest elements. Plainly therefore in the science of Nature, as in other branches of study, our first task will be to try to determine what relates to its principles.

The natural way of doing this is to start from the things which are more knowable and obvious to us and proceed towards those which are clearer and more knowable by nature; for *the same things are not “knowable relatively to us” and “knowable” without qualification*. So in the present inquiry we must follow this method and advance from what is more obscure by nature, but clearer to us, towards what is more clear and more knowable by nature.

Now what is to us plain and obvious at first is rather confused masses, the elements and principles of which become known to us later by analysis. Thus we must advance from generalities to particulars; for it is a whole that is best known to sense-perception, and a *generality is a kind of whole, comprehending many things within it, like parts*. Much the same thing happens in the relation of the name to the formula. A name, e.g. “round”, means vaguely a sort of whole: its definition analyses this into its particular senses. *Similarly a child begins by calling all men “father”, and all women “mother”, but later on distinguishes each of them.*¹⁰⁸

The latter sentence has been underscored, because it concerns the theme of the present Section directly: along with a scientific elaboration of sense data, we advance into our adult life with the abstract language of a science “translated” (originally and naturally) into simple categories of paternity and maternity. At the outcome of the most general science, in turn, the allegedly abstract notions will be translated into the same simple and “naïve” categories.

Man naturally expects (tends) to find good as such in his/her closest environment first of all, and this tension is included in the name of synderesis: the first impulse of the human will towards good as such. But the closest environment possible is that of the human family. Parents’ faces are, in fact, the archetypes of good expected to be found in the adult life later on. Those archetypes make for the *effective* broadening of the *actual* horizon of human activities (the theoretical as well as those practical ones). Practical activities envisage things in themselves, as said; and their objects being transcendent to a lesser or the greater extent renders the actions moral, i.e. not egotistic and self-centered. Still, for them possibly to tend so (outwards), their objects must be first understood as such, i.e. transcendent; for being understood implies being opposed to the intellect *in reality*, and the radical (human) opposition is founded upon being grasped in the innermost of the human intellect. Both poles of human activity make for its character. There are empirically known principles in it, and the transcendent they are tested against. As, however, the latter is associated first of all with what conditions the human life *first* (the physical for a child is just the family: the intimate presence of the mother and the protecting presence of the father), the *ultimate* transcendent, was called

¹⁰⁸ Physics By Aristotle. Bk I, Translated by R. P. Hardie and R. K. Gaye.

by Plato the Father and Maker of the universe,¹⁰⁹ and Thomas understood the text of the Epistle to Ephesians (Ephes. 3. 14.) similarly.¹¹⁰ In other words: providence might be either an ordinary human virtue (as Cicero has it) and responsible for the natural human environment – the family (pater familias takes care for the environment – the “outer side” – of the new life), or the virtue ascribed to God, Who is then called the Father; the One who guarantees the ultimate perspectives of human existence.

The Hegelian’s assumption that man is able to “change the reality” might sound uncanny, and the ideology that implemented the principle (Marxism) proved felonious. However, there is no doubt that man can change the *relations* to things, if willing to, after seeing them as they really are, i.e. opposed to the human mind. Moreover, the radical relativity of the human existence (not to be equaled to, and confused with, the relativism as commonly understood) is founded upon the family bonds that make the human existence possible. The substrata of these relations are so much subordinated to them that those akin by the blood bonds are called (in English) simply relations. Thus, a child is first conscious of him/her being related to parents than conscious of his/her being self-subsistent, i.e. independent of them. Similarly, the deepest significance of being a husband and wife is founded on them being related to each other by the proxy of the progeny (or the hope to have it), and the personal identity “sensed” secondarily only and in the background of the relations. The order of cognition is inverse to the order of being: humans perceive relativity (a kind of motion) before knowing some subjects related mutually. Moreover, all identification of objects in general is secondary to the cognition of the relativity of the primitive data of the mind. If the general object of empirical sciences is motion (and the moving and moved are to be known as related to each other), then an archetype of relativity must precede.

STh., I, 13, 7, ad 1. Ad primum ergo dicendum quod relativa quaedam sunt imposita ad significandum ipsas habitudines relativas, ut dominus, servus, pater et filius, et huiusmodi, et haec dicuntur relativa secundum esse. Quaedam vero sunt imposita ad significandas res quas consequuntur quaedam habitudines, sicut movens et motum, caput et capitatum, et alia huiusmodi, quae dicuntur relativa secundum dici.

¹⁰⁹ Timaeus, 28C.

¹¹⁰ Summa Th., I, 33, 2, ad 4. The terms “generation” and “paternity” like the other terms properly applied to God, are said of God before creatures as regards the thing signified, but not as regards the mode of signification. Hence also the Apostle says, “I bend my knee to the Father of my Lord Jesus Christ, from whom all paternity in heaven and on earth is named” (Ephesians 3:14). This is explained thus. It is manifest that generation receives its species from the term which is the form of the thing generated; and the nearer it is to the form of the generator, the truer and more perfect is the generation; as univocal generation is more perfect than non-univocal, for it belongs to the essence of a generator to generate what is like itself in form. Hence the very fact that in the divine generation the form of the Begetter and Begotten is numerically the same, whereas in creatures it is not numerically, but only specifically, the same, shows that generation, and consequently paternity, is applied to God before creatures. Hence the very fact that in God a distinction exists of the Begotten from the Begetter as regards relation only, belongs to the truth of the divine generation and paternity. (Literally translated by Fathers of the English Dominican Province).

Some relative names are imposed to signify the relative habitudes themselves, as “master” and “servant,” “father,” and “son,” and the like, and these relatives are called predicamental [secundum esse]. But others are imposed to signify the things from which ensue certain habitudes, as the mover and the thing moved, the head and the thing that has a head, and the like: and these relatives are called transcendental [secundum dici]. (Literally translated by Fathers of the English Dominican Province).¹¹¹

However competent in a restricted adult social competence, humans tend towards the fullness of life and fullness of being naturally, departing from experiencing relations. But there are obstacles on the way both inside and outside. There are vices and sluggishness which paralyze rational efforts and some obstacles waylaid sometimes on purpose (the Greek “scandals”: σκάνδαλα are literally “snares”). Thus, this unique absolute horizon of human existence might be obstructed and despaired to be obtained. The absolutely One might be multiplied in human minds according to the variety of obstacles.

There is but one absolute master of nature. Aristotle quotes Homer in this context: “The rule of many is not good; one ruler let there be,”¹¹² because, according to Aristotle, “the world refuses to be governed badly”. But Homer himself speaks about Deity in both singular and plural. Why, then, Greeks (and all people for that matter too) have multiplied the deity and became polytheists (either declaratively or factually)? The natural intellect states that God creates the universe (calls it into existence). On the other hand, things are known to be generated according to how they *tend to existence*. But a *perverse* mind might conceive an idea of deity being both generated and coming into existence out of Chaos. Greek philosophy had been advancing (before Aristotle) towards growing formalization of ideas and judgments, in the opposition to whence it commenced in time: a vague idea of divinity mingled with myths and superstition. Thus, philosophy appeared to be different to mythology, and opposite to it this way. In mythology, the question about Arche became the question about Its beginning in time. The world of phantasy emerged from the formless and undefinable. God created man really, but a perverse human mind might have created the *multiplicity* of gods and this according to its inventiveness in evil:

ἦτοι μὲν πρῶτιστα Χάος γένετ'· αὐτὰρ ἔπειτα
Γαῖ' εὐρύστερνος, πάντων ἕδος ἀσφαλὲς αἰεὶ
ἀθανάτων οἳ ἔχουσι κάρη νιφόεντος Ὀλύμπου,
Τάρταρά τ' ἠερόεντα μυχῶ χθονὸς εὐρουδείης,
ἥδ' Ἔρος, ὃς κάλλιστος ἐν ἀθανάτοισι θεοῖσι,
λυσιμελής, πάντων τε θεῶν πάντων τ' ἀνθρώπων
δάμναται ἐν στήθεσσι νόον καὶ ἐπίφρονα βουλήν.

(Hesiodus, Theogonia, 116-122)

¹¹¹ <http://www.newadvent.org/summa/>

¹¹² Iliad, II, 204. Metaphysics, XII, Ch. 10, 1076a 2; transl. by W. D. Ross.

[116] Verily at the first Chaos came to be, but next *wide-bosomed Earth*, the ever-sure foundations of all the deathless ones who hold the peaks of snowy Olympus, and dim Tartarus in the depth of *the wide-pathed Earth*, and *Eros (Love)*, fairest among the deathless gods, who *unnerves the limbs and overcomes the mind and wise counsels* of all gods and all men within them.¹¹³

Theogony (cosmogony) asks about *the origin of deity* and the answer is paradigmatic for all forms of polytheism. The deity was multiplied according to the kind of “thinking” engaging (and subordinate to) the mythological Ἔπος. The latter “unnerves the limbs and overcomes the mind and wise counsels of all” (δάμναται ἐν στήθεσσι νόον καὶ ἐπίφρονα βουλήν). The “unnerving” Hesiod speaks of might be also translated as “training”. Material principle – “the wide-pathed Earth” (χθονὸς εὐρυοδείης) – was regarded as the matter the world originated from.

Some philosophers stipulated a nominal definition of God at the outset of the methodological demonstration of the existence of God. There is, in Thomas, something of the sort. God is commonly understood as who governs the universe¹¹⁴ (with a paternal care). This common sentiment is a starting point of the proof. As, however, some believed (declaratively or factually) in that their life depends on many principles, they multiplied the deity too, and polytheism appeared. The methodological demonstration is necessary for showing the unity of the Principle. A sound mind is able to understand the unity of the principle in question and can be made happy (saved). Human nature is capable of God (capax Dei), but the rest of nature is not: a stone cannot be saved. Albeit it depends on the divine Providence really, it cannot be conscious of the fact and direct its existence accordingly. Providence God exerts on humans is exceptional.¹¹⁵ A Man was called “a stone of salvation” (Acts, 4:11), but *metaphorically* only (some men are fastened in truth too because of their proximity to God). Book of Genesis (2-4) says: In the days of: “a famine ... Go not down into Egypt, but stay in

¹¹³ The Theogony, transl. by H. G. Evelyn-White

<https://www.theoi.com/Text/HesiodTheogony.html>

¹¹⁴ Summa Theol., I q. 13 a. 8, c:

Quia igitur Deus non est notus nobis in sui natura, sed innotescit nobis ex operationibus vel effectibus eius, ex his possumus eum nominare, ut supra dictum est. Unde hoc nomen Deus est nomen operationis, quantum ad id a quo imponitur ad significandum. Imponitur enim hoc nomen ab universali rerum providentia, *omnes enim loquentes de Deo, hoc intendunt nominare Deum, quod habet providentiam universalem de rebus*. Unde dicit Dionysius, XII cap. de Div. Nom., quod deitas est quae omnia videt providentia et bonitate perfecta. Ex hac autem operatione hoc nomen Deus assumptum, impositum est ad significandum divinam naturam.

¹¹⁵ Summa Theol., I q. 23 a. 1. c. (It was traditionally called predestination).

the land that I shall tell thee. And sojourn in it, and I will be with thee, and will bless thee ... and *in thy seed shall all the nations of the earth be blessed*".¹¹⁶

Hesiod provided an archetype of polytheism, and, at the same time, defined its essence. There is the ultimate End of human life therein and Providence (connected with the strength of the father), but multiplicity of casual ("material") objectives also: the ultimate multiplied according to irrational concupiscence mentioned above.

Greek philosophy originated from the contestation of the polytheism. The divine (τὸ θεῖον) was ascribed to a cause the consecutive philosophers deemed ultimate. The more general a cause, the more approaching the real God. Ultimately, Plato and Aristotle get to know the Father of the universe. Philosophy had made an astonishing progress in discovering the Ultimate before Aristotle.

Kant, in the Preface to the Second Edition to his Critique, claimed the opposite: the traditional philosophy neither developed nor declined (it was a constant unattainable ideal). Mathematics and physics did, but there were – according to Kant – no perspectives of progress for metaphysics. It is, however, certain that, after (and perhaps because of) Kant, metaphysics suffered a regress. At least one part of the Kantian statement was falsified. Nowadays, it is no longer any similar to the object of Kant's passionate critique. Perhaps, its name is still attractive, but the pathways of metaphysics declined from the cognizance of the Father of the universe, and philosophy itself assimilated to the opposite of what it was about to be after Hesiod: it returned to mythological thinking. Aristotle anticipated the danger inherent in extension of the quantitative matrix of cognition adopted by Kant (and named *Anschauung*):

Again, if besides sensible things no others exist, there will be no first principle, no order, no becoming, no heavenly bodies, but *each principle will have a principle before it*, as in the accounts of the theologians and all the natural philosophers. But if the Forms or the numbers are to exist, *they will be causes of nothing*; or if not that, at least not of movement. Further, how is extension, i.e. a continuum, to be produced out of unextended parts? For number will not, either as mover or as form, produce a continuum. ... And those who say mathematical number is first and *go on to generate one kind of substance after another* and give different principles for each, *make the substance of the universe a mere series of episodes* (for *one substance has no influence on another by its existence or nonexistence*), and they give us many governing principles; but the world refuses to be governed badly.¹¹⁷

... this is a possible account of the matter, and *if it were not true, the world would have proceeded out of night* and "all things together" and *out of non-being* (Ch. 7).

The principles laid down by Kant bear their fruits contemporarily. A Copernican turn occurred really. There was not, according to Kant, the ultimate to be sought beyond the

¹¹⁶ Rozważania tematyczne: Matka wiary (Some considerations on the titles ascribed to the Mother of God in a Polish prayer) <https://www.ssb24.pl/tematy,57,0>

¹¹⁷ Metaphysics, XII, Ch. 10.

universe and governing it with paternal care, but a matrix both restricting and defining human understanding. Human consciousness emerged allegedly from a non-being and the world perhaps too.

According to Kant, there is, at the bottom of human thinking (equaled to schematizing), an idea called by him transcendental (i.e. all-encompassing); the idea of the totality of the world as well as that of God and coextensive not that much to a specific act of thinking as rather to thinking as such, i.e. the absolute thinking. As such, i.e. transcendental and all-encompassing, the ideas were supposed to regulate all acts of thinking. The aforementioned ideas were not that much heterogenic to it as rather marking the ultimate possibilities of the human thinking. Consequently, being transcendental added up to being different from all particular acts of mind (from objects of the “pure” reason) and being allotted to the realm of practical reason. Although Kant avoided identifying the latter with the will (as traditionally understood), the identifying would have been natural; for according to scholastics, the will moves the *personal* intellect, and on the other side, the will is presented its proper object by the *individual* intellect, because its act is specified by it. There was, however, no real difference between the intellect and will in Scotus already, but the so-called formal one. The exact meaning of the word¹¹⁸ is not clear. Anyway, the will was free, whereas the intellect was natural only. Scotus accepted, at the same time, the primacy of the will. In those who followed suit, the more “formal” an act of the mind, the more “transcendental” it could be; i.e. regulative of the intellectual actions.

These human spiritual principles must terminate each other: the understood is loved, and conversely, love finds its rest in contemplating the loved. There is a natural rhythm of human life measured by these two principles. Moreover, as human nature is intellectual and volitional by participation only, there must be principles regulative of them both. The fact was acknowledged by Kant himself (at least to some extent). But Kant failed to account for what motivates the act of the intellect in *the physical world* we live in. The transcendental ideas do not, obviously, belong to this world. The traditional metaphysics, for all its interest in the spiritual, was based on the observation of the physical world: it advanced towards the spiritual this way. Ironically, Kant compared a metaphysician to a Geistesheer (a spirit-seer). Indeed, the one who claims to possess intellectual certitude and intellectual rest must be defined so: as the one who adheres to the principle of the intellect firmly and not only perfunctorily. Kant’s remarks are to the point. There are natural (albeit not material) beings that regulate our cognition. Thomas calls them angels (spirits).¹¹⁹ Scotus, on the other hand, does not seem

¹¹⁸ Opus Oxoniense, II, dist. 16, q.u. nr 586: Non quod sint essentia eius [animae] formaliter, sed quid sunt formaliter distinctae, idem tamen identice et unitive. É. Gilson, Johannes Duns Scotus. Einführung in die Grundgedanken seiner Lehre, über. von franz. W. Dettloff, Düsseldorf 1959, 515-528.

¹¹⁹ Contra Gentiles, lib. 3 cap. 91 n. 5. Nos autem quidditates rerum ex accidentibus et effectibus coniectamus. Oportet ergo quod nostra intellectualis cognitio reguletur per Angelorum cognitionem.

Compendium theologiae, lib. 1 cap. 129 co. Intellectus igitur natus est perfici ab aliquo exteriori, quod comparatur ad ipsum sicut ad potentiam: unde homo ad actum intellectus adiuvari potest a quolibet exteriori, quod est magis perfectum secundum esse intelligibile, non solum a Deo, sed etiam ab

attach much importance to the natural proof of the existence of angels. Perhaps, it was because he saw at least indistinctly no less important problem of who (what) terminates (regulates) our acts of the will. That the intellect and the will terminate each other is not an answer, because we would like to know what terminates each of them taken separately. Indirectly, Scotus addressed the question, but his answer has not been acknowledged nowadays. Scotus, *as a theologian*, is precise here. He saw a Principle of bringing to rest the affectional in us without making us emotional, sentimental and thus spiritual weaklings. Thomas, for all we know, failed to see this Principle.

For a considerable time, an equilibrium existed between the intellectual and the volitional in man, both in natural and supernatural order. If the Holy Ghost moves our will,¹²⁰ there must be a Person who brings it to rest also. Characteristically, “modern” thinking identifies such a rest with inertia. It attacked “the genius of women” (and *the Woman*) this way (its role in the spiritual life of man). “Modern” thinking attacked human dignity in both men and women. For, in a family, it is a woman who guarantees such a rest. A shallow sensuality and emotionality replaced the firmness of the moral character. The “masters” of modernity are obviously responsible. It was Nietzsche who both saw the problem and (perversely) attacked human dignity:

Our aesthetics hitherto has been a woman’s aesthetics to the extent that only the receivers of art have formulated their experience of “what is beautiful?” In all philosophy hitherto the artist is lacking— This, as the foregoing indicates, is a necessary mistake; for the artist who began to understand himself would misunderstand himself: he ought not to look back, he ought not to look at all, he ought to give.—

Angelo, et etiam ab homine magis instructo, aliter tamen et aliter. Homo enim adiuvatur ab homine ad intelligendum per hoc quod unus eorum alteri proponit intelligibile quod non considerabat, non autem ita quod lumen intellectus unius hominis ab altero homine perficiatur, quia utrumque lumen naturale est unius speciei. Sed quia lumen naturale Angeli est secundum naturam sublimius naturali lumine hominis, homo ab Angelo potest iuari ad intelligendum non solum ex parte obiecti quod ei ab Angelo proponitur, sed etiam ex parte luminis, quod per lumen Angeli confortatur.

¹²⁰ Summa Theologiae I-II, q. 68 a. 4 ad 3. Ad tertium dicendum quod animus hominis non movetur a spiritu sancto, nisi ei secundum aliquem modum uniatur, sicut instrumentum non movetur ab artifice nisi per contactum, aut per aliquam aliam unionem. Prima autem unio hominis est per fidem, spem et caritatem.

Summa Theologiae I-II, q. 70 a. 2 arg. 1. Beatitudines enim attribuuntur donis, ut supra dictum est. Sed dona perficiunt hominem secundum quod movetur a spiritu sancto. Ergo beatitudines ipsae sunt fructus spiritus sancti.

Summa Theologiae II-II, q. 52 a. 2 c. Manifestum est autem quod rectitudo rationis humanae comparatur ad rationem divinam sicut principium motivum inferius ad superius, ratio enim aeterna est suprema regula omnis humanae rectitudinis. Et ideo prudentia, quae importat rectitudinem rationis, maxime perficitur et iuvatur secundum quod regulatur et movetur a spiritu sancto. Quod pertinet ad donum consilii, ut dictum est.

Nietzsche was interested in modelling a new “creative” man (an “artist”) capable of revaluating all the traditionally deemed precious.

This is what distinguishes the artist from laymen (those susceptible to art): the latter reach the high; point of their susceptibility when they receive; the former as they give— so that an antagonism between these two gifts is not only natural but desirable. The perspectives of these two states are opposite: to demand of the artist that he should practice the perspective of the audience (of the critic—) means to demand that he should impoverish himself and his creative power— It is the same here as with the difference between the sexes: one ought not to demand of the artist, who gives, that he should become a woman— that he should receive.¹²¹

Let us focus on Nietzsche’s “hitherto”. Astonishingly, the horizon of time Nietzsche saw extended, in fact, up to modernity. Nowadays, people happen to associate the perception of beauty with aesthetics. But they are heirs to the German (the 18th century’s) tradition there. It was Baumgartner who introduced the name of aesthetics, previously deemed barbaric. Kant popularized the term.¹²² Declaratively, Nietzsche attacks the German tradition, but in fact, he radicalized the Kantian stance mentioned above: “The intellect is creative in experiencing the reality” (“constructs” the objects of the creative intuition-Anschauung). Moreover, before Nietzsche and the German Transcendentalism fashioned the modern Weltanschauung this way, people rather believed in that the receptive perception of beauty was prerequisite for any human spiritual activity: it was a spiritual rest (of the objects perceived as beautiful) which included a potential for any human creativity (Aristotle). The receptivity had been traditionally associated with adhering to truth and good, but, after transcendentalists, was about to be assessed pejoratively. Nietzsche addressed, apparently, Kant’s transcendental aesthetics. Kant himself says:

The Germans are the only people who at present use this word to indicate what others call the critique of taste. At the foundation of this term lies the disappointed hope, which the eminent analyst, Baumgarten, conceived, of subjecting the criticism of the beautiful to principles of reason, and so of elevating its rules into a science. But his endeavours were vain. For the said rules or criteria are, in respect to their chief sources, merely empirical, consequently never can serve as determinate laws à priori, by which our judgement in matters of taste is to be directed. It is rather our judgement which forms the proper test as to the correctness of the principles. On this account it is advisable to give up the use of the term as designating the critique of taste, and to apply it solely to that doctrine, which is true science—the science of the laws of sensibility—and thus come nearer to the language and the sense of the ancients in their well-known division of the objects of cognition into αἰσθητά καὶ νοητά, or to share it

¹²¹ Friedrich Nietzsche, *The Will to Power*, p. 429; frg. 811 (March-June 1888), A New Translation by Walter Kaufmann and R. J. Hollingdale Edited, with Commentary, by Walter Kaufmann with Facsimilies of the Original Manuscript

http://www.newforestcentre.info/uploads/7/5/7/2/7572906/nietzsche_-_the_will_to_power.pdf

¹²² W. Tatarkiewicz, *Dzieje sześciu pojęć* (The History of Six Ideas), Warszawa 1988, p. 362, 363.

with speculative philosophy, and employ it partly in a transcendental, partly in a psychological signification.¹²³

“The well-known division” of cognition into αἰσθητά καί νοητά might have required (in classical philosophy) accounting for their mutual relation, and was clearly presented in Plato’s analogy of the divided line (Respublica, 509D – 510A). There were consequent levels of cognition corresponding to the levels of reality: departing from illusions of our ordinary, everyday experience (εἰκασία), through belief about physical objects which cast their shadows (πίστις), human mind advanced to mathematical reasoning (διάνοια) so as to end in philosophical understanding (νόησις). Real objects correspond to the levels of cognition, and, ultimately, knowledge of the forms leads to a knowledge of the God.

Kant, to the contrary, puts up with providing a relation of “objects” to the cognizant subject (The “I”). The priority of αἰσθητά was accepted in a temporal sense, but the νοητά were actually subordinated to the subject. They depended upon it. Nietzsche the “artist” and “philosopher” subordinated in fact the νοητά (principles of reasoning) to αἰσθητά (principles of sensuality). A more decisive stress was put on subjectivity and sensuality to the detriment of the human will which only can adhere to transcendent God really (can conform to the will of God).

The stress might seem unnatural, because it is rather natural for a man to focus on the exterior objects and to contemplate them. This contemplation is a principle of philosophizing in the traditional sense of the word. A disinterested pleasure in the sense data (αἰσθητά) (not to be confused with sensual pleasure) is a token of human dignity and rationality. According to Aristotle, this interest in the contemplation of nature is representative of the human rational nature (Metaphysics, I, 1).

If bereft of this rest (bliss) of contemplation, human activity must become literally restless and “morbid”, which Nietzsche says himself in the same paragraph quoted above. Nietzsche’s remarks about “the artist” began from the following:

It is exceptional states that condition the artist—all of them profoundly related to and interlaced with morbid phenomena— so *it seems impossible to be an artist and not to be sick*. Physiological states that are in the artist as it were molded into a “personality” and that characterize men in general to some degree: 1. intoxication: the feeling of enhanced power; the inner need to make of things a reflex of one’s own fullness and perfection; 2. the extreme sharpness of certain senses, so they understand a quite different sign language— and create one—the *condition that seems to be a part of many nervous disorders— ; extreme mobility that turns into an extreme urge to communicate*; the desire to speak on the part of everything that knows how to make signs—; *a need to get rid of oneself, as it were, through signs ...* One must first think of *this condition as a compulsion and urge to get rid of the exuberance of inner tension* through muscular activity and movements of all kinds; then as *an involuntary*

¹²³ The Critique of Pure Reason by Immanuel Kant translated by J. M. D. Meiklejohn
I. Transcendental doctrine of elements. First part. Transcendental æsthetic. § I. Introductory.

<http://www.metaphysicspirit.com/books/The%20Critique%20of%20Pure%20Reason.pdf>

*co-ordination between this movement and the processes within (images, thoughts, desires)—as a kind of automatism of the whole muscular system impelled by strong stimuli from within—; inability to prevent reaction; the system of inhibitions suspended, as it were. Every inner movement (feeling, thought, affect) is accompanied by vascular changes and consequently by changes in color, temperature, and secretion. ... 3. the compulsion to imitate: an extreme irritability through which a given example becomes contagious— a state is divined on the basis of signs and immediately enacted— An image, rising up within, immediately turns into a movement of the limbs— a certain suspension of the will ... A kind of deafness and blindness towards the external world—the realm of admitted stimuli is sharply defined.*¹²⁴

“The deafness and blindness towards the external world” might be accepted to be definitive of subjectivism, and, at the same time, typical of the aforementioned (the Hesiodean and “modern” alike) sensuality. The *real* sensuality actually diversified mingles in it into a Chaos. The intellectual and the affectional perfectly harmonized originally in the family, in which a womanly “aesthetics” (receptivity) and the manly activity dominate, degrade then. This state of mind was called by Nietzsche “morbid”, because blurring diversity and unhinging natural equilibrium is definitive of suffering the lack of firm principles indeed. Nietzsche’s might name it so, but it is, first of all, a disorder of the *human will*: humans are now *absolutely free* to direct (order) their desires to the *real transcendent* God and meet His will in the Revealed Religion. The ancient might well *will* the same; the contemporary, however, might *intend* it also, because definite means have been presented to achieve the End in reality (the intention and the will differ so). Sensuality and concupiscence, on the other hand, are organically blind for this perspective and the Nietzschean “will” is nothing but concupiscence really. Practically, if bereft of this strong impulse of the will, humans choose objectives at random and create some “deities”. Their “creativity” smacks of an irony then.

It is neither sensuality (*Erleben*), nor the emotional (the empathy) which defines humans best. Fertility applies to all kinds of life, but humans participate of God’s similitude therein eminently, because He begets the Word from eternity. Some are able to occupy themselves with spiritual midwifery in the way Socrates did, whose disciples’ minds were pregnant with truth. Some, on the other hand, participate of God’s paternity “of whom all paternity in heaven and earth is named” (Eph. 3. 15) in the commonly accepted sense of the word.

After Nietzsche, in the years about to come, both the intellectual and the volitional in the Western Civilization degraded. The lack of both theoretical and moral philosophy in our days both falsifies the Kantian philosophical optimism and bear a testimony to that his “aesthetics” prevailed anyhow. People attach importance to some unworthy objects and deify them so. Philosophers “produce” ideas instead of accomplishing stringent reasoning. The traditional spiritual heritage of the Civilization has come into oblivion. But the affectual in man degenerates too, and perhaps more rapidly. Strong will and the sense of duty is being replaced by sentimentalism and emotivism.

¹²⁴ Ibid.

In the same climate of spiritual confusion, some do not hesitate to call God “mother”. People ceased to understand the deep sense of maternity presented in the Revelation. The Mother of God is an icon of femininity. She is a Principle; the Principle of the rest of our affections. We cannot call God mother because we ought to call him so as His Mother did. This deep sense of spiritual maternity might be present in all women and is natural to them all. But this sense was attacked by Nietzsche’s idea of earthiness.

The spiritual in man requires distinctions and a person (his/her dignity) is distinguished this way. The vice opposed to the acuteness of mind and the strength of the will is called *malthakia* – the softness of character.

There is, in Latin, a neutral term *mollities*,¹²⁵ for the Greek the term of *μαλθάκια* corresponds thereto. It is typical of it to perceive the outer world in egotist terms. Turned away from the natural laws (the objective states of matter) some hope to create a climate of social complacency; a society “humane” and not restrictive. The fact went into oblivion that the positive law can have a certain (albeit limited) education value: it turns away the will of an

¹²⁵ Summa Theologiae II-II, q. 64 a. 5 ad 5. [...] quod quidam seipsos interfecerunt aestimantes se fortiter agere, de quorum numero Razias fuit, non tamen est vera fortitudo, sed magis quaedam mollities animi non valentis mala poenalia sustinere, ut patet per philosophum, in III Ethic. et per Augustinum, in I de Civ.

Summa Theologiae II-II, q. 125 a. 2 ad 2. [...] mollities enim est fugere laboriosa.

Summa Theologiae II-II, q. 138 a. 1 ad 1. Ad primum ergo dicendum quod praedicta mollities causatur dupliciter. Uno modo, ex consuetudine, cum enim aliquis consuetus est voluptatibus frui, difficilius potest earum absentiam sustinere.

Summa Theologiae II-II, q. 138 a. 1 ad 2. Deliciosi autem dicuntur qui non possunt sustinere aliquos labores, nec aliquid quod voluptatem diminuat, unde dicitur Deut. XXVIII, tenera mulier et delicata, quae super terram ingredi non valebat, nec pedis vestigium figere, propter mollitiem. Et ideo delicia quaedam mollities est. Sed mollities proprie respicit defectum delectationum, deliciae autem causam impeditivam delectationis, puta laborem vel aliquid huiusmodi.

(Summa Theologiae II-II, q. 138 a. 1 ad 2).

(Sententia Ethic., lib. 3 l. 15 n. 15.)

Sententia Ethic., lib. 7 l. 7 n. 10. [...] Mollities autem videtur peior quam incontinentia; quia utraque consistit in hoc quod est vinci; sed incontinens vincitur a fortiori passione.

Sententia Ethic., lib. 7 l. 7 n. 11. Delitia enim est quaedam species mollitiei. Mollities enim refugit inordinate omnem tristitiam, sed delitia proprie refugit tristitiam laboris. Ille enim qui trahit vestimentum suum per lutum, ut non laboret se subcingendo, quod pertinet ad delicatum, vincitur secundum illam tristitiam quam reputat sibi imminere si levaret vestimenta.

Sententia Ethic., lib. 7 l. 7 n. 13. Sed tunc dicitur aliquis incontinens et mollis si quis vincitur a talibus tristitiis et delectationibus contra quas multi possunt, si tamen hoc quod non potest resistere huiusmodi passionibus non sit propter naturam generis ex qua posset ei esse grave quod aliis esset leve, sed propter aegritudinem, scilicet animi, quae provenit ex mala consuetudine; sicut mollities propter naturam generis invenitur in regibus Scytharum qui delicate nutriti non possunt labores et tristitias ferre, et sicut etiam est de feminis per comparisonem ad masculos propter infirmitatem naturae.

evil-deer from evil mechanically, but it opens a possibility then to reflect personally on the motivation of one's deeds.¹²⁶ But on the other hand, the same positive law cannot replace natural laws (the reason cannot "dictate them") and a personal reflection on whence an act of the will has originated is indispensable.

The positive law is not in a position to change the laws of nature. Advancing the paths on natural laws, man discovers, ultimately, a Transcendent Law-Giver, present in the world and vouching its stability. The handicapped, the weak and the marginalized are given unshakable rights by Him. They do not have to put up with rations (doles) of pity institutionalized in a "humane" society. At the very beginning of an adult life, everyone naturally expects to be given these rights.

The Father and Maker is present in the world incessantly: His dominion is defined by this presence. Had it not been the case, the world would cease to exist at once.¹²⁷ But He is present in it in a special manner too; not natural, but complementary thereto nonetheless, which was expressed in the words: Ὁ πατήρ μου ἕως ἄρτι ἐργάζεται καὶ γὰρ ἐργάζομαι (J. 5. 17; My Father worketh until now; and I work). Advancing into the future, from the very beginning of his/her life activity, everyone is at least dimly aware of the real effects of God's Providence in the world.

10. The analogy of proportionality animating the progress of science. The "supernatural" "consciousness" crippling it

Proportionality is the most capacious epistemological category. In an exemplary physical equation:

$$F \cdot d = W.$$

some values might be accepted as settled (or constant), and the proportion between the others will appear. Now, experimenting in general consists in assuming some constants so as to retrace the relations amongst the other variables, which is tantamount to assuming the boundary conditions of *an experiment*. However, a more general relation is grasped in *experiencing two* objects (A, B). Experiencing is not, then, to be equaled with experimenting. Albeit, in the scientific experiment, separate objects assume a definite quantity value, they might be first grasped as related to each other rather than to a common denominator (number may be called so). We experience proportions of objects before we experiment on an object.

The notion of the analogy of proportionality was widely discussed by Thomas Aquinas. No distinct proportion such as $A/B = C/D$ is visible in an ordinary mathematical

¹²⁶ Summa Theologiae, I^a-II^ae q. 92 a. 2 ad 4. Ad quantum dicendum quod per hoc quod aliquis incipit assuefieri ad vitandum mala et ad implendum bona propter metum poenae, perducitur quandoque ad hoc quod delectabiliter et ex propria voluntate hoc faciat. Et secundum hoc, lex etiam puniendo perducit ad hoc quod homines sint boni.

¹²⁷ S. Thomas, In Evangelium Joannis, Rozdział V. lect. 2, nr 739.

equation. The equation, by its very nature, allows an arbitrary replacement of its elements. Moreover, although the variables are not related to each other mutually as the formal to the material is, the totality of them is essentially related to *something* indeed, which is called by Thomas *materia intelligibilis*. The material of the objects of experiment is modeled after this mathematical ideatum – the matter proper to mathematics. Thus, the mathematical formal abstraction (*abstractio formalis*) appears at the border of the analogy of proportionality, because all forms thereof correspond supposedly to the uniform matter.

The objects of the experiment (which is in fact a special kind of experience) might be considered from the point of view of the mathematics (and this type of abstraction in fact used), and no other than quantitative relations be sought and expected to be found in nature. Although the scheme is strictly connected with how modern science works actually, its theoretical (general) justification and was provided in the Middle Ages. The uniformity of the experienced (of reality) was originally understood in the terms of the so called univocity of being. It was a philosophical explanation of a methodological problem provided by John Duns Scotus. Tacitly, or perhaps even unwittingly, he equaled the unity of being with the unity mathematics speaks of. In fact, it was assumed that quantitative relations amongst things either *express adequately* the identity of things, or even *determine* what things are. Thomas does not address Scotus' stance *directly*, for he was two generations his older, but addresses the stance of Avicenna, whom Scotus follow there. The stance might be called mathematicism.

As, however, the stance was not so much disavowed in modernity, as rather heralded a discovery (of Galileo) and as breaking one as to underpin the modern paradigm of science, it is worth considering its alleged importance once more (after what was said about it in CHAPTER II, 1) and asking whether the actual progress of science was really boosted by this discovery.

According to Schlick, the progress of science consists in re-cognizing what has appeared to be new in the preexisting categories already known. Accordingly, the progress of science would consist in sheer accumulating of data and extending the applicability of the categories already known. The same pattern of thinking was believed to work in the everyday cognition. The sciences that are not normally called exact (e.g. psychology) operated on the same model. Allegedly, a scheme (matrix) was instilled in anyone's mind in childhood and all the subsequent cognition consisted in cramming the allegedly new into the preconceived ideas. Thus, using the name of mathematicism seems to be justified, for an extrapolation of mathematical method occurred indeed. When an unknown person was met, an individual would ascribe to him/her all what was engrafted in his/her mind in childhood. To be precise: not *the fact* that some are as indolent and not willing to abandon the hackneyed schemes of thinking has been pointed out, but *a principle* meant to describe *all thinking adequately and absolutely*. A special notion of matrix was used in this context. If tested against it, no *absolutely new* cognizance was possible. A grotesque consequence of the stance is that some might be in fact blamed for not yielding to be crammed into the existing "categories of consciousness". Normally, a person is assessed as bad because of his/her actions not fitting into some acknowledged categories of morals. But the same categories might be believed to be independent of nature and not theoretically justifiable to the effect of a person being "bad" because his/her actions not explicable in those categories.

Putting aside, for the time being, the problem of the nature of the “spectacles” we allegedly see the reality through, the undoubted fact is to be enhanced that the analogy of proportionality is actually effective in modern physics. For instance, the force of attraction of two charges is directly proportional to the product of the charges and inversely proportional to the squared distance between them. Now, *the analogical* relation observes as for the gravitational forces. It seems that the actual progress of science consisted in applying analogy in such a way, and that it cannot be called recognition, for *the subjects* of relations are first unknown, but *the relativity* of things instead. No relation can exist without subjects that support it, but the order of cognition is inverse to the order of being. Relativity is known first.

Thus, the identity of objects need not be tackled in science directly (which is the case in *scientia naturalis*), but the possibility opens to *replace* any object with another one and *qualitatively* different. Apparently, there is no common denominator for electric charges and masses; they are qualitatively different indeed. Now, the possibility would be precluded if a uniform substratum was accepted and bereft of all qualitative differences.

The problem of the univocity of being is not addressed in the modern methodology of science. The problem has been regarded as the historical one and bereft of actual importance. The fact corresponds to the aforementioned paradigm of science. There is allegedly no need to take into consideration that which does not regard scientific problem *directly*, i.e. which does not stand just before the matrix. It might be called the economy of thinking, but indolence too. Thus, the paradigm of science mentioned above would work in both directions: it would envisage both the past and the future of science. Both predictions (and hopes) as to the future, and decisive abnegation of the allegedly obsolete would characterize modernity. It would “extend” in time this way.

According to Kant, it are phenomena only which are known in science. Nothing, moreover, could be supposedly known unless subsumed under some patterns of thinking. Kant called them transcendental (pure) concepts. Husserl called them ideas. At the border of nature and consciousness, a primitive intuition of time determined human existence, i.e. human understanding of the future and the past. *Historical facts* were as undesirable as those natural ones. But the historians of philosophy were interested in those facts nonetheless. The existence of what might be called matter (a uniform substratum) is historically founded. The so-called *forma corporeitatis* (corporeity) had been invented by Avicenna before taken for granted by Descartes. The theory of the univocity of being developed thereafter.

Although the problem of the analogy of being is *historical*, it allows using *more universal* categories of thinking. The problem is whether science envisages discrete forms (possibly described as the forms of being) and new names, when imposed, correspond to things qualitatively different, or rather the uniform and possibly monotonically evolving continuum, whose transcendental horizon (devised by Kant) is projected a priori and homogeneous to all acts of cognition that can be subsumed under it. If the latter is the case, no radically innovative thinking is possible for the alleged progress would have consisted in sheer accumulation of “values”.

According to Kant, science had been developing incessantly (which is to say: monotonically) before him until the fact was given due appreciation in “The Critique of Pure Reason”. The contrary was the case in metaphysics. Kant did not admit a possible regress in

it, as it would have contradicted what metaphysics was expected to be, viz. the absolute horizon of thinking and regulative of its all particular acts of thinking. However, from a strictly historical point of view (i.e. taking into consideration *the facts*) something of the sort really occurred after Thomas' death (1274). The anti-metaphysical stance of Ockham is only understandable in, and to be set against, its historical background. Something really changed over the half of the century after Thomas' theses were condemned by the advocates of plain ideas in theology and science. Ockham's minimalism, accordingly, was given the name of the intellectual soberness. Still, the fact remains that some questions had been dropped and even despaired to be settled just in the wake of the Condemnation in 1277. Thus, if the metaphysics it to preserve the meaning it was given by Aristotle and its authenticity be gauged by the ability to answer such like questions as posed in the book *B* of "Metaphysics", the fact that it failed to and thus degraded after Thomas' death cannot be denied.

That any questions be answered, they must be harked first and those written down read up thoroughly. The fact how Scotus read Thomas' texts should be reflected upon too. He addressed some philosophical problems formulated in Summa in such a way that it is almost certain that he himself had not read Summa, but some excerpts instead. The vastness of Thomas' philosophical output might have justified the omission on the part of an independent thinker if the *extension* of the output had been its main value. If scholasticism were to be blamed for anything at all, it would be *particularity* of reasoning rather than addressing systematically *particular questions* which would be blamable. For no matter how broad the scope of interest and how detailed the reasoning, *the analogy* was used by Thomas in solving particular problems. There is no need to learn Summa by heart so as to solve particular questions. Thomas' universalism consists in adopting the first principle of thinking to solving all problems. Manser tried to reduce all philosophical problems to differentiating between act and potency, and the idea was right in a sense. But, to be precise, it is rather the principle of differentiating between what *actually is* and *what is so relatively only* and according to a definite guise of being that is effective throughout Thomas' work. The principle was, nevertheless, lost sight of and the deplorable degradation of philosophy and theology (and of science too) followed. For there was no reason that the same fate should not befall science in general. In fact, the idea of progress as devised by Kant was originally founded on the univocity of being and Scotism underpins (as Honnefelder has it) Kantianism. The idea was a metaphysical one and thus to be understood in the aforementioned historical context.

Accordingly, the problem of the univocity of being and the problem of the modern paradigm of science consequently too, can be, nevertheless, seen from the point of view Thomas most probably could have assumed. The matter of exact science is, as has already been said, to be identified with *materia inteligibilis*, and secondly with any matter able to be modeled according to what experimenting requires. An explanation of the algorithm commonly used must have been given, and possibly more accurate than that practical one. Thomas did not avoid, as a rule, answering any questions at all. The contrary was the case in Scotus. The very form of "Ordinatio" testifies to that Scotus despaired that definite solutions were possible. Instead, he *chooses* some problems and advances along his own thread of reasoning (discarding all the others). Directly, the analogy of being as advocated by Henry of Ghent was addressed. Scotus blamed Henry for advocating a disguised form of the equivocality of being (deadly to science indeed). Ockham, in turn, focuses on the problem of universals.

This mediaeval problem, to be sure, had been central until Thomas put it in a vaster philosophical context, which made it but an accessory philosophical theme. As has already been said, the simplest way to understand a nature common to two individuals (e.g. humans) is to ascertain as to fact of them being *relations*. For a man begets a man, not a daisy. Still, the bonds we are attached to our masters and preceptors with are no less tight than those of blood. For there is spiritual begetting too, and the very possibility of the human communication testifies to that there is something common amongst humans, and they are related in a special way. The form of communication (broadly or strictly understood) is no less important than the form mathematics speaks of. Ideas do not extend or expand over centuries, because they do not live on their own. They are rather *conceived* in our minds and vivid this way. A seed of truth germinates in convenient circumstances, and the fruits it bears might be both unexpected and unpredictable (innovative this way).

Consequently, should formalization be a token of science, the very notion of form is to be elucidated first. For the formality of the “transcendental ideas” devised by Kant does not seem to meet the requirements of science, if the latter is ambitious enough (is to be understood maximalistically). The Kantian form (of being) was anticipated by Scotus’ *entitas* and Avicenna’s *mavjud*, and man oriented “transcendentally” towards it. In the text quoted above, Kant is outspoken of that his “critique” of science should restrict rather than inspire.

Aristotle assumes diverse grades of formality and corresponding to different forms (of being) to be found in nature. The supreme science (the highest cognition) is not to be understood extensively, as Scotus assumed, but is such (supreme) if applying the analogy of relations to all objects universally. Conversely: all new objects can be “recognized” as long as the recognition is about not that much subsuming under one scheme devised a priori as rather finding *diverse* subjects and instances of the universal tension towards the fullness of being to be found in nature.

The intentional being was originally understood as mediating in the cognizance of God. Yet, the very status thereof is unclear in Scotus. For on the one hand, the demonstration of the existence of God (based on it) is stipulated as the philosophical one, but on the other, the intentional being is decidedly not as natural as natural the subjects matters of sciences are. Consequently, a hybrid of theology and philosophy appeared, and “consciousness” as the realm the intentional being is known in. After Scotus’ death, the *esse diminutum* (meant to be a medium of the cognizance of God) has become the object of “consciousness”, and its primitive context marginalized. The “mirror of eternity” existed still, but nothing save *human* future was reflected in it. The eternal was depersonalized. The problem of the demonstration of the existence of God is *declared* by Descartes as pivotal, but Descartes himself was praised by Marxists apparently for some other reasons. Similarly, Heidegger would protest vehemently every time his fundamental ontology was supposed to identify God with Being. The latter was more important to him. Once the main (the primitive) objective had been lost sight of, both the “medium” and the “consciousness” became autonomous (“*nulla re indigent ad existendum*” as Husserl has it). In fact, the latter happened to replace God as a “supernatural” being. Moreover, should a cognition of God be accepted after all in the philosophy of subject, a supernatural being, “consciousness” will imprint on this cognition its own indelible trace of subjectivity (it is, allegedly, more important what things are *for us* than what they are *in themselves*). The “God” of transcendentalism is a “weak” God not prone to

infringe the privileged position of the “enlightened”. Moreover, the very imaging God as “weak”, “humble”, or whatever the like, is boasted a token of a spiritual refinement of illuminati, and contrasted with the “simplistic” idea of the Supreme Judge. Two notions are assumed to contradict each other: those of justice and mercy. They seemed incompatible. Traditionally, judgments were believed (and expected) to correspond to things. The better a judge, the vaster swaths of reality his judgments cover. The Supreme Judge is supremely aware of the misery which affects the judged. His judgments address particular things. This assumption, however, seemed mistaken for Avicenna and Kant. Human judgments were expected to be passed according to depersonalized light of consciousness. General enlightenment prevailed.

The idea of God (elaborated in the era of enlightenment) might seem alluring *for some time* indeed. It might seem enticing *for me* as long as evil does not touch the core of *my personal* existence; my very self. We expect God to be compassionate anyhow. But the *concrete* meaning of being compassionate is only visible when facing a threat about to undermine the very foundations of our life.

According to Thomas, justice and mercy appear in all works of God. Nay, the supreme justice is fulfilled in the act of mercy (STh., I, q. 21, a. 3 ad 2). Mercy is, obviously enough, about helping those handicapped or unhappy. Thus, the supreme mercy is about the worst affected; misfortune and unhappiest. It is about helping them, which is to say: *removing evil* from their life *definitely*. It is a deplorable token of “humanity” that some relish in *helping* so much that they want those helped just to be helped (dependent on helpers) without a prospect of being self-reliant.

Some believe that punishment is the worst evil possible and the incompatibility of the two aforementioned attributes of God happens to be seen in this light. However, punishment *accompanies* the misdeeds only and is *consequent* upon them, so that the latter must be deemed more evil than punishment itself. Some who does evil does it to someone else – no doubt – but first and foremost he/she harms him/her-self; for there is no greater evil than being evil him/herself, which is the immediate effect of the harm done to the others. Consequently, the most splendid act of mercy must envisage *this* human misery. Thus, the supreme act of mercy is the justification of a sinner, and justice and mercy meet here (Psalm 84. 11; STh., I, q. 21, a. 2 sc.). Not only can God *do* justice as all men can. He is able to *make it*, i.e. create it. Obviously, people cannot make the others good just because willing them to be such. Everything they can do is to administer all possible prerequisites to God’s action. In God’s actions, mercy and justice are perfectly harmonized.¹²⁸ Metaphysics is no different

¹²⁸ Super Sent., lib. 4 d. 46 q. 1 pr. 5 ; Super Sent., lib. 4 d. 46 q. 1 pr. ; Super Sent., lib. 4 d. 46 q. 1 a. 1 qc. 3 s.c. 1. ; Super Sent., lib. 4 d. 46 q. 2 a. 2 qc. 2 arg. 1.; Summa Theologiae I, q. 21 a. 2 s.c. Sed contra est quod in Psalmo LXXXIV dicitur, misericordia et veritas obviaverunt sibi; et ponitur ibi veritas pro iustitia.

Summa Theologiae I, q. 21 a. 4 s.c. dicitur in Psalmo XXIV, omnes viae domini misericordia et veritas.

Summa Theologiae I, q. 21 a. 4 co. Respondeo dicendum quod necesse est quod in quolibet opere Dei misericordia et veritas inveniatur; si tamen misericordia pro remotione cuiuscumque defectus accipiat; quamvis non omnis defectus proprie possit dici miseria, sed solum defectus rationalis naturae, quam contingit esse felicem; nam miseria felicitati opponitur. Huius autem necessitatis ratio

here. It cannot save man. Nor is it a “consciousness” of the possibilities created by men. Humans cannot procure the salvation. Neither could it be decreed by men. If metaphysics is a domain of the absolute natural freedom of man it is about removing all possible obstacles which are likely to obfuscate the ultimate possibilities of human existence.

There is something created by God in the soul of the justified and called grace. It is a real being that sustains the supernatural participation of/in God’s life. No substitute of it is to be expected of science and philosophy, as people cannot be “thought of” by their own devices. But they are created by God to a new life indeed.

The God of enlightenment is as refined as completely unconscious of evil. But is he able to succor the *actual* human misery, without a positive acknowledge of it? Is anyone able to introduce a form (good) without knowing the privation (evil)? Being *effectively* compassionate implies knowing evil (a privation) that affects someone’s life including that one that affects it most painfully. As has been said, bearing ill-treatment is a real challenge. Someone’s presence might be difficult to bear just because his/her actions are bound to harm those present. Some situations people live in might be almost unbearable just because of the presence of those who are bound to wreak destruction on human life. Now, it is possible to shun the nocuous, but it is impossible to escape from oneself. An evil-doer has to bear his/her own wretchedness,¹²⁹ and the situation is *unbearable* if one is left to his/her own devices. In fact, if he/she need not to, it is because evil has been removed *definitely* (from without) and a man justified, a new life and new existential possibilities appear. Being *effectively* compassionate consists in removing evil *definitely*. Accordingly, justification is making one *really* righteous, and not just *persuading* him/her being so. There is a deplorable equivocation included in the English term of JUSTIFYING and the influence of enlightenment perceptible in the language.

If philosophy is conscious of anything at all, it is conscious, first of all, of the ultimate possibilities transcending infinitely all natural human abilities. And exactly to the point: the justice of God’s works makes the world we live in predictable to the degree the order of things is cognizable and its Author too. Thomas implies this line of reasoning in STh., I, q. 21, a. 1 ad. 2; 2, c.

No existential possibilities are to be precluded to anybody but shown instead. The common feature of all natural things is tending to perfection, i.e. intending good and being.

est, quia, cum debitum quod ex divina iustitia redditur, sit vel debitum Deo, vel debitum alicui creaturae, neutrum potest in aliquo opere Dei praetermitti.

De veritate, q. 28 a. 1 ad 8.; De potentia, q. 5 a. 4 ad 6.

Super Rom., cap. 15 l. 1. Sic ergo apostolus conversionem Iudaeorum attribuit veritati divinae, conversionem gentilium divinae misericordiae. Contra quod videtur esse quod dicitur in Ps. XXIV, 10: universae viae domini misericordia et veritas. Sed dicendum est quod per hoc quod ascribit vocationem Iudaeorum divinae veritati, non excludit misericordiam, quia et apostolus ex Iudaeis natus dicit I Tim. I, 13: misericordiam consecutus sum.

¹²⁹ S. Thomae, Super Iob, cap. 24

... inordinatus animus sibi ipsi est poena, ut Augustinus dicit in I Confessionum.

Humans just intend the fullness of life in their own manner. The tendency, as has been said, is the subject matter of the supreme science, viz. metaphysics. The entire nature tends towards the fullness of being, and man, in particular, cannot be thwarted in tending towards the fullness of life, as long as he/she acts according to his/ her nature, which is the rational one. The ultimate objective is totally incomparable with any form existing in one's closer environment. Metaphysics is both an outlook and challenge. It opens the possibility (which is to say: makes the possibility visible) to disentangle from no matter how perplexed existential cultural circumstances. It is a challenge; for no particular objective – as might be proved – deserves being chosen as the ultimate good of man.

Science must, by its very nature, categorize things. It is because being concerned with *some types* of things that scientific statements are checkable at all. Now, the same is the case in metaphysics. The only difference consists in that the categories are seized in it generally; i.e. in the terms as universal, as appearing to be the categories of being. The worth of the first philosophy consists in that it identifies the first category of being and all the others related to it. According to Aristotle, there are ten categories of being. The quantity is one of them and perhaps the most transparent. But the quantity is that *of a thing* that can be numbered and measured, which is to say: of the one which must exist before being numbered and measured. In other words: the first category is that of the self-subsistent thing. Being, on the other hand, appertains to all categories, but to *substance* primarily. Most obviously, persons are substances first of all (as them being for their own sake is at least desirable and they must be self-subsistent in this sense), and the being proper to them might be called life, according to the Aristotelian: *vivere est viventibus esse* – “In living things, to live is to be” (De Anima II, c. 4, 415b 13). Now, according to Thomas, *life* signifies the same as *to live*; the only difference consists in that the latter is expressed in abstracto.

Generally speaking, everything tends towards being (there is, in nature, a general proportion of the acting and the acted upon), albeit the perfect things tend to life. This is both in the perfect accordance with the common sense (life is good) and with the observed nature, in which life manifests itself plainly enough. More generally, the commonest feature of nature is preserving and propagating being, which means in particular: perfecting and actualizing the others. The fact is salient in those things whose being is so perfect that possibly called life. Because an individual propagates being proper to it specifically and sometimes at the expense of his/her own life. There is, however, no struggle amongst *different* species, similar to that in the libertarian economics. To the contrary: *different species foster* each other (even if ceasing to exist), according to the Aristotelian: *generatio unius est corruptio alterius* (the corruption of one is the generation of another). The death of an herbivore is good for a carnivore, not because intended by the former (which would have been nonsense), but because intended by the Author of the order of the universe. The Author makes all things ordered harmoniously and foster each other along with making them (creating); i.e. calling into existence. Obviously, the former is first neatly perceptible; the harmony of nature is undeniable and cannot be an effect of accident. Actions are accidental as long as they are competitive and irrational. On the other hand, the action proper to the rational creature consists in *propagating* universal truths and not those connected with particular objectives.

The general tendency of nature is perceptible in inanimate beings too. For if something is moved, it is perfected by a thing moving – to some degree and in some respect. The variety

of things mutually ordered makes for the totality being variegated and its cognizance both fascinating and not hackneyed. Generally, specific matters are ordered to specific forms, whereas the supposition that the “matter of the universe” was related to the “form of the consciousness” is absurd. Nor can the formality mathematics speaks of be the ultimate form of the universe.

There is, however, a difference between the philosophy of nature and metaphysics (the philosophy of substance, as Aristotle has it) in grasping the most natural in things. It is the problem of the natural rest. Physics, in the modern sense of the word, does not admit the possibility of the existence of a body bereft of energy. Thus, the natural rest Aristotle speaks of must be understood not that much as the lack of kinetic energy, but the presence of another one, viz. the potential one. Obviously, the spatial movement of a body results from it being related to the others that form a system of either masses or charges. A SHO, in turn, is a system on its own; the motion issues from this system according to the properties of the system intrinsically ordered; the system is a standing wave. Thus, the natural rest can be interpreted as the potential able to trigger a spatial motion. Now, metaphysics envisages the rest most intimately inherent to individual beings. Being inherent implies being part of a unity, but being (existence) metaphysics speaks of is rather participated in/of and unifying a nature that participates. The transcendent unity (the unity of being) cannot be fragmented into “particles”. A transfer of energy occurs in a substance (a SHO) even if it is at rest. The vital energy, in turn, is both gathered (from the environment) and expended (to it). The activity of what is both a recipient and a giver is proportionate to the state of the proper energy of the system. These physical terms are analogically applicable in metaphysics.

But metaphysics is the science of being, not the science of being-in-motion. Parmenides was the first to see the difference and restrictions of the philosophy of nature. So much so that he denied the reality of motion so as to defend the reality of being. A paradox appeared, but a solution was proposed also. It was thinking which encroached into being so thoroughly that identified with it. Of course no “consciousness” appeared then. For all his skepticism for *ordinary* motion (analyzed by his predecessors), Parmenides focused on a *special* motion in fact, because thinking might be called thus. It might be called a rest also, all depending on the analogous sense adopted there. The sense was precisely elucidated by Thomas. There is something in an existing substance which rests in it. It is its act of being (existence). All things tend to be, and their being rests in them as long as they exist. This is the most general analogous tendency to be found in reality. All things tend towards being as well as rest in the state of being proper to them. Metaphysics contemplates this rest, although the contemplation cannot be called an intuition of being properly speaking.

The problem of contemplation is to be related to what was said above about whether the movement of the human intellect towards God unfolds apart from the realm of physical beings and thus the cognizance we have of Him is that of values rather than the order of the nature. In particular, the question arises whether a prayer (and especially the contemplative one) unfolds in a special spiritual realm. Thus, a Christian philosopher might address God in the flowing manner:

May the First Principle of things grant me to believe, to understand and to reveal what may please his majesty and may raise our minds to contemplate him.

O Lord our God, true teacher that you are, when Moses your servant asked you for your name that he might proclaim it to the children of Israel, you, knowing what the mind of mortals could grasp of you, replied: “I am who am”, thus disclosing your blessed name. You are truly what it means to be, you are the whole of what it means to exist. This, if it be possible for me, I should like to know by way of demonstration. Help me then, O Lord, as I investigate how much our natural reason can learn about that true being which you are if we begin with the being which you have predicated of yourself.

The words quoted above stem from the beginning of John Duns Scotus’s “A Treatise on God as First Principle”.¹³⁰ Now, if the prayer of contemplation unfolds in a realm special to it, it is only due to the *real substratum* able to *sustain* it – the grace mentioned above. But the substratum of the natural contemplation and philosophical thinking consequently too is different; it is the natural habit of science. Its whole essence consists in being related to the real states of matter; opposite to what is supposed to transcend the natural (the life of grace). Should the two kinds of contemplation be undistinguished, the consequence would be that:

- 1) all *natural* intellectual activity (prayer is a super-*natural* one) would result from the rest, possibly identified with “intuition”;
- 2) the activity would be severed from the natural one as an eschatological perspective and called consciousness as both opposed to reality and secondary to the contact with the real world.

The stance leads to idealism, which claims the autonomy of human thinking, but at the expense of making it sterile and bereft of what might be really innovative. Realism opposed to it claims that the vital forces of thinking are drawn from the contact with the real world. Now, should consciousness consist in mirroring (ideal) objects, an idealist (e.g. Ricœur) would compare it to the system of mirrors and the intellectual beam erring unhampered amongst them only, whereas a “realist” (e.g., Stendhal or Lenin) would claim that language should mirror the reality tout court. The latter statement seems (for all its simplicity) to be more in accordance with the common sense. Still, and contrary to what “realists” say, a real source of it is to be sought in abstraction. As for the contemplative prayer, its real basis is that of the real sustenance of the supernatural life in man, viz. the created grace. One might be actually unconscious of the source, but profiting nonetheless. The ignorance does not justify attempts to found human beatitude on “thinking”, “values” or the like (as was said in CHAPER II, 3), and reject the objectively valid proof of the existence of God

The reasoning (motion the intellect) originates from its opposite, viz. the immobility of the intellect only in so far as the intellect is charged with some potential stemming from the principles known empirically. The assumption that motion as such originates from rest is nonsensical; for if the rest of an animal precedes its motion it is only in so far as the animal (called by Thomas *primomotum*) is able to discount the potential energy of the chemical bonds of nutrients in triggering the kinetic one. The apparent difficulty the advocates of the existence of the mythical consciousness must face consists in that it is unclear whence the

¹³⁰ Treaty, 1.1; 1.2.

motion of consciousness could originate. Apparently, it is as radically opposed to nature in this respect that it deserves the name of a “supernatural” being. In fact, it is as mysterious as no other object can be. The “surnaturel”, so highly appreciated by some might sound equivocal. Wikipedia gives the following synonyms of that French expression: *au-delà*; *divin*; *extraordinaire*; *fabuleux*; *fantasmagorie*; *fantastique*; *féérique*.

The sense of being is naturally only visible in the heart of nature. It is visible in becoming; i.e. coming to existence. This is accompanied by perishing but the latter intended *accidentally* only, because the assumption that a predator kills for the sake of killing is absurd. Killing is meant to support life. Even if a cat finds its pleasure in killing, it is only because the game of killing is aimed at obtaining the ability for killing essential for sustaining its life. However, not even this fact is *directly* perceptible. For the first perceptible is the harmony of motions of a predator and this attracts our attention first of all (as Mark Aurelius observes). The finality of nature is originally perceptible in some parts of it being naturally related to their closer ends, and the actions are thus related to their objects. The finality of nature is perceptible in its efficacy first of all. If cruelty should be ascribed to predators (and they regarded anthropomorphically), it is because we suppose that a victim hopes to evade the predator, and the hope is foiled (frustrated) so that its death prolonged and postponed many times. It might be called (as in a story by August de Villiers de L’Isle Adam) “The torture of hope”. Obviously, the efficacy of actions cannot make for them being good in humans. But on the other hand, it is a prerequisite for them being such nonetheless. The softness of character, in turn, is a token of its baseness¹³¹, no less than a morbid fascination with death and killing is. There might be something interesting *in the manner* a predator kills effectively, but killing as such is abhorrent.

¹³¹ STh., II-II, q. 138, a. 1, c. Respondeo dicendum quod, sicut supra dictum est, laus perseverantiae in hoc consistit quod aliquis non recedit a bono propter diuturnam tolerantiam difficultium et laboriosorum. Cui directe opponi videtur quod aliquis de facili recedat a bono propter aliqua difficilia, quae sustinere non potest. Et hoc pertinet ad rationem mollitiei, nam molle dicitur quod facile cedit tangenti. Non autem iudicatur aliquid molle ex hoc quod cedit fortiter impellenti, nam et parietes cedunt machinae percutienti. Et ideo non reputatur aliquis mollis si cedat aliquibus valde graviter impellentibus, unde philosophus dicit, in VII Ethic., quod *si quis a fortibus et superexcellantibus delectationibus vincitur vel tristitiis, non est admirabile, sed condonabile, si contra tendat*. Manifestum est autem quod gravius impellit metus periculorum quam cupiditas delectationum, unde Tullius dicit, in I de Offic., *non est consentaneum qui metu non frangatur, eum frangi cupiditate; nec qui invictum se a labore praestiterit, vinci a voluptate*. Ipsa etiam voluptas fortius movet attrahendo quam tristitia de carentia voluptatis retrahendo, quia carentia voluptatis est purus defectus. Et ideo secundum philosophum, proprie mollis dicitur qui recedit a bono propter tristitias causatas ex defectu delectationum, quasi cedens debili moventi. As stated above (II-II:137:1 and II-II:137:2), perseverance is deserving of praise because thereby a man does not forsake a good on account of long endurance of difficulties and toils: and it is directly opposed to this, seemingly, for a man to be ready to forsake a good on account of difficulties which he cannot endure. This is what we understand by effeminacy, because a thing is said to be “soft” if it readily yields to the touch.

Cruelty, most obviously, is associated with brutality. But a refined and sophisticated form thereof is connected with rendering humans soft and unable to resist the otherwise unavoidable hardships of life.

The apperception of death, accordingly, cannot make our being conscious of what is worthy of humans. The sense of being is to be sought elsewhere. Death accompanies our life, obviously enough. Still, it is preposterous to believe that we can become conscious of the sense of life by contrasting it with what it is not. Most probably, humans feel the approaching death when registering the organs of the body ceasing to work one by one. After the last throb of the heart, most probably, the brain – perhaps for some hours – is conscious of being cut off the nutrients. This consciousness might be somehow similar to being conscious of suffocation. However, the supposition that a positive knowledge can be obtained therefrom is ridiculous. We happen to be conscious of this or that life activity, whereas the consciousness of life as such is impossible. Generally, motion cannot be defined by its privation. The sense of being is originally perceived in motion. We differentiate between the moving and the moved so as to understand anything at all.

The notion of the moved seems to be easier to substantiate. For a considerable time, matter had been believed to be what underwent motion. The matter had been deemed what might be called the bottom of the universe. Still, it exhibited an astonishing tendency to evade any attempt to grasp it definitely. Atoms had been believed to be the matter; then: electrons, protons, muons, pions and others; but the bottom appeared to be evasive every time it seemed to be pinned down. In other words: albeit something elementary was believed to exist, the positive meaning ascribed to the elementary would change nonetheless. Some believed that quarks or strings were more elementary than e.g. electrons were. Still, their existence has not been proved. Consequently, what was believed to be made up of them (the Leibnizian aggregates) shared the lot of their constituents. Matter seemed to be as evasive as the mythical Proteus. Operationism, thus, rejects the very idea of the elementary objects being as real as the aforementioned aggregates; i.e. real in the sense of the word projected by Leibniz.

According to Aristotle, the “matter” of the universe is “unreal” in a sense indeed. For it is real (and realized) due to a form only, i.e. a specific form (of being) that makes things become and (and the other perish *accidentally*). Thus, the stringent notion of the form only can explain the first datum of experience, viz. motion, which has already been said. Avicenna claimed to understand Aristotle albeit acknowledged that the challenge the Greek philosophy posed to him was huge. Now, the formal, according to him (i.e. the formal component of the natural species) stemmed from the transcendent Intelligence. The matter, in turn, evolved so to prepare for more and more perfect forms possibly obtainable. Their being specific consisted in being prepared (evolving) in such a way. His modern followers identified the Intelligence with consciousness. According to Avicenna, the ultimate happiness of man consisted in being joined to that Intelligence. It was, at the same time, the fullness of knowledge, which made people happy.

The notion of happiness seems to imply stability, and the problem might be reworded as that of what the stability (including that of human existence) is to be founded upon. There is, according to Aristotle, a stability to be found *in nature*; for albeit individuals come to existence and perish subsequently, the boundaries within they do so, are absolutely

immovable. Thus, most probably, Aristotle assumed that species are eternal and matter too. Some Aristotelians (Averroists) believed that they were co-eternal to God. Apparently, without something constant in (or above) nature (constant this way or the other) the human cognition of the world would have been impossible.

Thomas does not assume that species *must* be eternal; all the less co-eternal to God. They might be perpetual and consequent upon each other similarly as the points of a direct line do not terminate as to the beginning and the end. Species might be so but *need not*. God might have been creating them from eternity. Still, as the Revelation says the opposite, a Christian must put up with stating a sheer possibility thereof. Yet, there is something constant and stable in things albeit not constant in the sense of being unchangeable in the lapse of time. The most formal in things is not that much a specific form as rather what depends on it (as to its generation) and what originates therefrom in time. The most formal in things is being/existence. No matter how fragile an existence, the fact that all things must intend existence and this *out of necessity* is undeniable. The subjects need not exist, albeit as far as they exist, they are *necessarily oriented* towards their proper acts of existence. This makes for the greatest certainty to be found in nature and expressed in the Thomasian formula of the subject matter of metaphysics – *ens inquantum est ens*. Thus, there is a necessity in existence, and nothing mysterious in it as Wittgenstein imagined. All substances are naturally proportioned to their being (acts of being) and their actions to their objects too. We come to know the substances departing from perceiving their actions. There is nothing mysterious in the motion of natures.

However, the most formal is, at the same time, the least perceptible. It requires a special effort (proper to metaphysics) to unearth the most formal from under the appearances.

Various modes of being manifest themselves in various aspects of the physical world. The plainest one might be associated with the energy a body is endowed with. The energy is proper to a body, and a body is far from being similar to a group of monads without windows. In fact, bodies propagate their forms, analogically as all natural beings propagate (or intend to) their specific forms. The propagation occurs due to the motion of the electromagnetic wave; its source being SHO – the standing wave.

11. The cognitive relation. The a-locality of cognition

The problem of a-locality was widely discussed in science in the middle of the 20th century. Still, as its implications are far-reaching and not restricted to science in the narrow sense of the word, the problem must be discussed in more general terms than those originally accepted. In one respect at least, a-locality seems to be undeniable. Scientific theories are a-local by definition and must be so since applicable to *any local circumstances* whilst none of them restricting their validity. At worst, they might be believed to be restricted temporarily, but it is preposterous to believe that they do not observe in certain parts of the world just because those parts are so distant that their universality cannot reach them literally speaking. Thus, the question concerning the source of their a-locality must be raised anyhow.

The source of the sciences on nature is experience, obviously enough. However, not even mathematics must be exempted from being founded on *an experience*. Edmund Husserl, both the philosopher and a learned mathematician, applied the term of experience to mathematics also. The cognizance called by him the source experience is relevant to science as such. “Every originary presentive intuition is a legitimizing source of cognition”.¹³² The scheme was meant to be as capacious as to encompass philosophy too. The only problem consisted in defining what the “originary presentive intuition” should be. Because, according to Husserl, some types of experience are secondary only. Now, it was up to philosophy to denounce them as such. The target was Empiriocriticism, which pretended to provide the evidence it was unable to. Husserl himself abandoned his primitive stance on the nature of mathematical objects (presented in “Die Philosophie der Arithmetik”). The palinody was tantamount to attacking the empirical character of the basic mathematical concepts, as advocated by scientism. Thus, he differentiated between the method proper to, and adopted unreservedly by, the then sciences and the primitive one and laying the very foundations of science, no matter its actual shape. The method applied widely at the turn of the 20th century in science was experimenting, and the blindness as for its foundations, according to Husserl, was detrimental to its outlooks. It was in fact the alleged universality of experimenting that was the object of Husserl’s criticism. *Something* more elementary than just experimenting had to be found for the sake of science itself. The only problem is whether Husserl discovered an approach *really* different to that incriminated by him as deadly to the development of science. The problem is, then, whether the experience was understood as “originary” as it should be.

The reaction to the stance of Empiriocriticism might seem excessive and ill-aimed, but targeting equating the empirical cognition with experimenting seems to be justified. Now, if the genetic provenience of the entire human cognition *had had to be equaled* to experimenting (as in Empiriocriticism), the value of the former would have exploded. In other words: Husserl only proved that experimenting ought not to be identified with the basic knowledge, but the room left open in science after relegating experimenting from the place unjustly occupied by it, might have been allotted to a wrong owner anyway. Indeed, Husserl spoke of *Lebenswelt* (the world *in which* life can only thrive and the actual progress of science be boosted) and almost *literally separated* from what is normally accepted as proper to the *scientific life*. The problem of *where* does human life unfold had been addressed, but the problem of all its guises not made out distinctly enough. Indirectly, the problem of locality, and that of a-locality of cognizance was addressed also, because science, as commonly believed, makes people independent of the narrow “here and now”

From a strictly practical point of view, experimenting must be connected with the locality of objects, because the apparatuses used are to be located in definite places and be of definite dimensions. Still, as soon as they are where they are meant to be, their very presence is bound to disturb the state of energy of the observed object. Husserl would have called this an “inadequate” presentation of the object. Because, instead of the adequate information about the object, a stochastic one would be given only. But we are not stochastically alive (as the poor victim of Schrödinger’s experiment was), but live in the real world. An advocate of scientism might reply that problem concerned small objects only (and disproportionate to the

¹³² Translation: Internet Encyclopedia of Philosophy

dimensions of both apparatuses and our bodies), whereas as for those as big as our body is, the problem is a sham. Now, if the specifics of the human existence had had to be connected with what we know intuitively, we would have to admit to know intuitively the objects comparable as to their dimensions with those of our body. But the problem is that sense organs are incomparably more minute than e.g. our inner organs. Nature operates in them in a special way. Moreover, in Schrödinger's cat experiment a certain transition was projected to be possible from "small" to "big" objects. The transition was an imaginary experiment. The mental experiment concluded what was called a "stochastic existence" of an aggregate of particles which, admittedly, are endowed themselves with a stochastic existence only. A cat was such an aggregate and "statistically alive" object.¹³³ Now the point is that some transition might be at work in nature, albeit different to the transition an experimenter accomplishes. The cat's body is teleologically integrated (without experimenting). But is so, human cognition (to be distinguished from experimenting) will consist in retracing elementary relations nature operates leading to the integration of the feline body.

Contrary to intuitionism stipulated by Husserl, the validity and restrictions of the experimental method appeared to be founded on the *particular discoveries* science gained at the turn of the 20th century. Apparently, the microscopic objects disavowed the validity of experimenting as it had been understood previously.

The problem how to differentiate between "small" and "big" bodies was addressed by the theoreticians of science (John Steward Bell). Is the border between them distinct or conventional only? The collapse of the wave function occurs every time an object "small enough" is observed. Should the wave function describe the objects *adequately*, the very presence of the means by which the object is observed will misrepresent the objects. Thus, it seemed that the means (media) should be bracketed and an immediate *presentation* of the object sought. This was the sense of Husserl's eidetic reduction. Once the means be removed and what stands on the way to the direct cognition of things too, an adequate information about the object would appear. The only problem is whether the intuition (or whatever the name of the basic experience) is possible after departing from the objects as presented by the "free variation in imagination", because objects are determined as soon as imagined. No definite difference between the two kinds of objects appears. If the imagined is "bracketed" by the imagined, the bracketing will make the outcome but indirectly knowable.

Contrary to what Husserl claims, the problem is, in fact, that of the difference between real and phenomenal (the appearing to us) bodies, and Einstein understood it in this way indeed. Arguing against the Copenhagen School he would ask "whether the moon ceases to exist every time we cease to look on it?" In other words: we are not entitled to expect the "big" bodies to behave predictably just because comparable to the dimensions of our bodies or exceeding it. Apparently, both reality and locality of objects was questioned by the advocates of the Copenhagen School. Without measuring no quantities were to be obtained, and, as being endowed with quantities seemed to be tantamount to exist tout court, the object were not real before being measured.

¹³³ Actually, the transition takes place in an apparatus in which the particles become deadly to the cat, but the scheme of reasoning remains the same.

Quantum mechanics discoveries happened to be interpreted in two ways. It was tried to rescue the locality of objects along with their reality (EPR theory), or the reality defended and the locality sacrificed. The latter stance was announced in the theory of the pilot wave (De Broglie-Bohm) and developed by Bell. The extreme guise of the theory of a-locality, in turn, is that of holism, which, albeit possibly inspired by Bell, bears no characteristics of science in the normal sense of the word. The statement: “everything is connected with everything, and it is impossible to know parts of the world separately”, seems to undermine the very foundations of the European science. However, the assertion that their “where” and “how much” do not define things as they really are chimes in with what Thomas says about the unity of being which is different to the unity mathematics speaks of. Being-endowed-with-quantities does not equal being as such.

Now, lest the theory of the a-locality of objects yield to such like interpretations as proposed by holism, the very problem of the a-locality of objects is to be rethought in the light of the Thomasian distinction and other elements of his system equally relevant to the problem. Experience, broadly speaking, and in the sense accepted throughout the present book, is only possible due to what makes things present, similarly as the pilot wave does. Thomas calls the latter species *sensibilis* – the transparent medium of cognition.

First of all, the sensual cognition is to be analyzed and species *sensibilis* as proper to every animal cognition. The sensual perception must be connected with a-locality of objects. An animal must be able to transport itself into different spatial temporal circumstances, which would have been impossible without transcending those immediately given. On the other hand, being *primomotum* (auto-kinesis) is connected with the aforementioned perception. An animal must anticipate new local circumstances, and elicit the motion from within, which would have been impossible without grasping (i.e. interiorizing them) them after e.g. seen at distance, i.e. a-locally. The animal existence must be dependent upon the a-local sensual perception. The human one, in turn, must be that and more, as the way humans transcend the spatial temporal is different not only as to the extent of the objects concerned, but as to the way they are concerned also.

If an animal’s survival is at stake when the animal’s sensual perception presents things adequately (i.e. meets the natural requirements of the animal’s existence), the same *a fortiori* must observe in humans. The survival of man is incomparably more difficult as unfolding in the environment threatening the human existence incessantly. No natural means to defend against the destructive influence of nature have been provided. Human body (and the skin especially) is more susceptible of any damage than that of the other animals. It would have been really quaint if human nature had evolved in the direction of depriving itself of natural means of protection the other animals are obviously endowed with. According to Thomas, instead of all those natural protectives, one and decisive factor exists in humans capable of replacing them all, viz. the intellect. It is due to the intellect that humans are able to anticipate the threatening circumstances of the natural environment. It is the intellect that makes up for the debility and susceptibility of human body. Its activity is marked with more pronounced a-locality than that of animals. The activity spawns the human being-in-the-world quite different to that of animals. First of all, this being is founded upon the ability to build science. Science transcends, as has been said, the spatial temporal, and the other activities proper to man (such as art, technics, and the like) do this to some extent also. Consequently, the objects

we live amongst must be grasped a-locally; for grasping things with hands only is irrelevant to being human. The human relation to the outer world is specific and founded upon the way science is related to the world. A particular thing can be grasped literally speaking, but the nature of our muscles does not permit to grasp it firmly enough. Now, things are grasped *firmly and immovably* (as Thomas has it) when known, which is tantamount to grasping not particulars (as they are possibly infinite and evasive) but classes of them instead; i.e. universals. They do not exist on their own save as relations amongst the real individuals. Consequently, science is a relative too, and it (its essence) might be defined as “being relative”. Its subject matter happens to be substantiated by individuals *indirectly*. The abstractedly known human nature is confronted with an individual supposed to be a human person. The relations must be founded on individuals really, but the fact is systematically reflected upon subsequently only (and of pivotal importance in ethics and acting).

The statement that we live truly amongst individuals only and the intensity of our life is measured by the strength of the affirmation of their personal dignity is undeniable. But the question *whence* the life originates is no less important. The “whence” is defined by the cognition of nature sharable by the individuals; by knowing their nature abstractedly (a-locally) first. “Abstractionism” happens to be assessed pejoratively though. Apart from the old philosophical tradition responsible for it, an apparent misapprehension of ideas might be shown, following Aristotle’s Categories (Part 10):

We must next explain the various senses in which the term “opposite” is used. Things are said to be opposed in four senses: (i) as correlatives to one another, (ii) as contraries to one another, (iii) as privatives to positives, (iv) as affirmatives to negatives.

Λέγεται δὲ ἕτερον ἑτέρῳ ἀντικειῖσθαι τετραχῶς, ἢ ὥς τὰ πρὸς τι, ἢ ὥς τὰ ἐναντία, ἢ ὥς στέρησις καὶ ἕξις, ἢ ὥς κατάφασις καὶ ἀπόφασις. ἀντίκειται δὲ ἕκαστον τῶν τοιούτων, ὥς τύπῳ εἰπεῖν, ὥς μὲν τὰ πρὸς τι οἷον τὸ διπλάσιον τῷ ἡμίσει, ὥς δὲ τὰ ἐναντία οἷον τὸ κακὸν τῷ ἀγαθῷ, ὥς δὲ κατὰ στέρησιν καὶ ἕξιν οἷον τυφλότης καὶ ὄψις, ὥς δὲ κατάφασις καὶ ἀπόφασις οἷον κάθεται—οὐ κάθεται.

In science, a special opposition (ἀντικείμενον) is at work. It is the opposition of the relation (i). The other species of ἀντικείμενα are listed by Aristotle in the inverse direction they trigger our cognition, according to the text of Physics quoted in the preceding Section.

(i) Pairs of opposites which fall under the category of relation are explained by a reference of the one to the other, the reference being indicated by the preposition “of” or by some other preposition. ... Knowledge, again, is the opposite of the thing known, in the same sense; and the thing known also is explained by its relation to its opposite, knowledge. For the thing known is explained as that which is known by something, that is, by knowledge. Such things, then, as are opposite the one to the other in the sense

of being correlatives are explained by a reference of the one to the other.

(ii) Pairs of opposites which are contraries are not in any way interdependent, but are contrary the one to the other. The good is not spoken of as the good of the bad, but as the contrary of the bad, nor is white spoken of as the white of the black, but as the contrary of the black.

(iii) “Privatives” and “Positives” have reference to the same subject. Thus, sight and blindness have reference to the eye. It is a universal rule that each of a pair of opposites of this type has reference to that to which the particular “positive” is natural. ...

To be in a state of “possession” is, it appears, the opposite of being in a state of “privation”, just as “positives” and “privatives” themselves are opposite. There is the same type of antithesis in both cases; for just as blindness is opposed to sight, so is being blind opposed to having sight.

(iv) ...

By “affirmation” we mean an affirmative proposition, by “denial” a negative. ... For as the affirmation is opposed to the denial, as in the two propositions “he sits”, “he does not sit”, so also the fact which constitutes the matter of the proposition in one case is opposed to that in the other, his sitting, that is to say, to his not sitting.¹³⁴

In the order our cognition, potentiality of the intellect realizes: we grasp (1) the principles (being and non being; the non-contradiction principle) first (iv); secondly (2) we ascribe a non being and being to some subjects (iii), and call them good and evil; thirdly (3) we grasp contrary properties of natures without considering particulars (ii); but then (4) a science (a relative) is begotten in our mind, whose whole nature consists in being related to: (ii) contrary principles of nature; (iii) the same properties existing in individuals (i.e. affecting their existence); (iv) the principles of differentiating in general.

The stances of both idealism and Operationism (both negating the autonomy of objects) must be refuted. A universal (the human nature first of all), is reflected upon, as applicable to this or that individual, and the validity of the common notions checked. Thus, things exist *before* the knower, and pose a challenge to his/her responsibility. On the other hand, but originally in fact, things exist *before being grasped* as universals; for the

¹³⁴ Categories by Aristotle transl.by E. M. Edghill.

<http://classics.mit.edu/Aristotle/categories.html>

aforementioned reflection cannot advance at random. Things (according to what they are) exist before being understood as such.

The problem, as Einstein plainly put it, is not of the objects “small” or “big”; for both categories are far from being as exact as the subject matters of exact sciences are. The categories might be *pragmatically valid*, but this does not amount to that they are *objectively so*, and in fact the opposite is at least suggested.

A situation might be imagined in “big” objects as corresponding to the uncertainty principle (not very sophisticated though). A student might try and check whether a lecture has already commenced. No matter how cautiously the door opened and how circumspect in peeping inside the student is *bound to disturb* the course of the lecture. Every lecturer knows how irritating such like “experiments” might be. The very observation is reflected upon to the effect of being observed. Naturally, we do not suppose inanimate objects to observe each other, but on the other hand, it goes without saying that they re-act as far as acted upon. The apparatus acts on the object observed. The problem is, then, of being both, as it were, invisible to the things observed, and being capable of observing. Animals observed by environmentalists are, as a rule, conscious of being observed, and it is extremely difficult to observe a habitat without disturbing its status quo. Animals happen to react differently and according to the possible and anticipated aggression of the observer. Still, the observer disturbs the state of objects not that much as *foreign* to it as rather as possibly re-acting in the way undesirable to the object observed. Now, the essence of (the original) science consists just in that: in observing things as foreign; as they are; without *any practical objective* retraceable in it; in observing them *theoretically*. Such like attitude is completely *not-understandable* to animals, and they cannot no react to it. The same *mutatis mutandis* must hold true as for all objects *experienced only*. Humans do not disturb their state as long as being *personally disengaged* and aim at knowing things *for the sake of knowledge only*. Some prerequisite for this attitude to the objects known must exist in human mind.

The nature of experience can be gathered from mere physical data seized analogically. There is something material in it (an object perceived), and the immaterial carrier of information about the state of energy of this object. Although the sense organs are as “big” as scientific apparatuses are, their inner structure (which has been analyzed in science recently) shows that they are *naturally adjusted* to “small”, i.e. natural objects. A closer look at how they work convinces that their elements are small enough to inform adequately. The problem was given some explanation in the analysis of the smell perception carried out at the Ulm University in Germany by Susana Huelga (which will be addressed in CHAPTER IX. 7) Quantum tunneling occurs there and the sense organs serve as nodes of the harmonic oscillator, viz. human body.

Thus, the physical sense of sense perception becomes clear. No mythical consciousness has to exist so as to justify the autonomy of the human existence. Due to the electromagnetic wave (light) propagated in the air, or another transparent medium, we can grasp a-locally the adequate information about the state of energy of a material object. We grasp the vicarious form of this object. The same *mutatis mutandis* holds true as for other channels of the sense perception, because the electric forces are equally present in propagating all kinds of waves (e.g. the acoustic ones). Metaphorically, we can speak about “seeing something in a new light”. But the metaphor is justified just because the propagation

of light is an archetype of any “insight” at all. No enlightenment opposed to the natural state of existence is definitive of human cognition.

The cognitive form (species sensibilis) *might* represent an object adequately. It *does* so actually when reflected upon and the information abstracted from the sense data by the active intellect obtained.

The statement that concepts stemming from vicarious forms represent physical objects when reflected on, and judged, is a stumble block for the tradition of the German idealism. The tradition, at the same time, advocates the idea of purely spiritual light (Bewusstsein) so as to substantiate the license in creating a human world arbitrarily.

Although both humans and animals can be called primomota, the human being-in-the-world is a special one. Human life can unfold in the natural environment, but *beside it* to some extent too. Thus, humans can fall prey of an illusion that their existence is as autonomous as radically opposed to nature. True, human acts *happen* to transcend the spatial temporal, but if they do so, the direction is definite, because the Other Side of the material world is definite too and independent of what might be fancied, wished or imagined about its nature.

As has been said, the specific of being primomotum consists in the ability to turn towards the source of a motion. Animals, do so at least when searching for nutrients. All the more so, humans are able to turn to the source of the motion, and even the First Source might be known. However, they can both hit and miss the mark, all depending on how accurate the cognition and how precisely the steps on the Way (we are speaking of) are measured.

We do not expect e.g. a stone to turn whither not thrown. Humans, however, can reflect upon the source of motion (after accepting the first stimulus towards good as such called synderesis) more or less appropriately. They can boost the intensity of the first stimulus and tend towards the ultimate by their will. They can reflect upon it and build a proof of the existence of the First Source of motion. Still, just because more perfect and left to its own devices, human cognition can be believed to unfold without the contact with nature. Thus, the reflection can be reflected upon and the outcome reflected upon subsequently too, and so on ad infinitum, just as Fichte stipulated. The consciousness becomes a deity.

Albeit the reflection can turn in a wrong direction or turn round in a vicious circle of “consciousness”, normally, the closest (inner and innate) source of motion of primomota must exist in nature. The ancient Greeks called it ψυχή – the innate principle of vital motion. It lies within an animated body and sustains the principles of motion (cognitive forms) accepted from without and interiorized more or less perfectly, all depending on the grade of a life. But, as has been said, humans grasp species sensibles most intimately. The principle of motion of plants (the least perfect primomota), in turn, is uniform and unchanged; not “sensed” in the normal sense of the word, albeit most recently some scientists have spoken about the “consciousness” of plants too.

Species sensibles are *natural* means of cognition and accompany the physical interactions of bodies. The *practical* actions of humans, on the other hand, are less predictable just because being more autonomous, i.e. capable of both good and evil; of choosing any direction whatsoever and any means leading to it. Seeing is not practical in the proper sense of the word and the cognition too. Praxis might follow, but need not.

Thus, two kinds of means are to be distinguished: the natural ones and unyielding to be modeled just because being natural, and the artificial (practicable) ones (e.g. the scientific apparatuses). The difference between experience and experimenting becomes visible: in the former, e.g. a seer and the seen are naturally adjusted, whereas in the latter, a means (an apparatus) is shifted between what is otherwise naturally adjusted. The cognition becomes mediated, and no matter how elaborate and sophisticated devices to “bracket” it (e.g. in Husserl) the artificial means cannot be annihilated by the others, no less artificial. The vicious circle of “consciousness” must round up.

The form of a natural thing is specific, which is to say: related directly to its matter only and not referable at whim (as artifacts are). It makes up a natural unity of the object known; the unity not imitable by the artificial objects unless imperfectly only. In other words: the individuals (the natural ones) are naturally indivisible; the relation between the specific form and matter is necessary, whereas the existence of individuals (“particles”) *within* these natural boundaries is not. The unity of definitions should correspond to this unity. The real definitions of things are meant. A thing cannot be defined as an aggregate of “particles”. Nor can it be understood as such. A real definition concerns what is naturally indivisible.

Thus, the objects of experiment exhibit a twofold character: they are both material objects and means of cognition. The two features fuse into one *artificially* only. But they are to be neatly distinguished in nature. So, and according to Thomas, the difference between two kinds of natural actions appears. There are those purely material ones and those intentional ones, viz. consisting in propagating the field of the potential of an object. The sensual perception is possible due to the latter form of action. “Intentional” means here “not stumbling upon any material object”. The natural intentionality (as proposed by Aristotle and Thomas) is defined by the state of energy of an object not being dissipated. Experimenting, in turn, consists in both acting and reacting; for the apparatuses react when expected to reflect an object only. Thus, we are provided not that much with the information about an object solely but about the observed and the observing *indiscriminately*. Now, it was believed that they both can be discriminated anyhow, and the attempts undertaken as obstinately as uninterruptedly.

According to Aristotle, the object seen and abstracted is grasped *indiscriminately* indeed. (CHAPTER VIII. COGNITIO CONFUSA). But it is proper to experience only (not to experimenting) to discriminate and to distinguish between the moving and the moved adequately. The sense organs are no similar to apparatuses at all, because they are not “macroscopic objects” bound to disturb the natural state of the energy of the perceived objects. What makes humans different to e.g. cyborgs is the ability to discern adequately between the moving and the moved. The ability is unachievable to the artificial means of cognition.

The relation between the moving and the moved is asymmetrical and the relation of cognition too. The fact of asymmetry in nature is proved in the Special Theory of Relativity; the theory of, so to say, natural relativity of objects. Accordingly, the human being-in-the-world distinguishes between right and the opposite; between the shallow and deep, and so on.

The asymmetry need not be understood anthropomorphically, as it apparently underpins the very foundations of nature.¹³⁵

Accordingly, the directions privileged might be called rights and the right action supposed to correspond to natural laws. That human action might be what it should, i.e. right or righteous it must unfold according to the basic rules existing in nature.

An animal can know its owner, but is incapable of a disengaged pursuit of truth about human nature. Usually, the knowledge it has is sufficient, but in some perplexed circumstances it might prove not to be so. It is because its cognition (its being related so) is not based on the (absolutely firm) non-contradiction principle (is not abstract). A dog can discern between what is good and bad *for it*, but is incapable of discriminating good and evil in fundamental terms of opposing being and non being. Similarly: shallow *human* sensuality identifies good with pleasure, but is blind for the ultimate end of human life, any good must be tested against. The animal cognition is existentially engaged, in the sense of its “existence” being here and now. Existing in the ordinary sense of the word might suggest being active in this way, but the proper sense of existing (the sense of being) is given in the formula of metaphysics: *ens inquantum est ens* signifies tending to being as such. Contrary to that of “other animals”, human existence is engaged in the perspective of the Absolute Good and Being humans only are capable to discern. Human existence originates from being related to some objects; human acting and science, in general, too. But science can be used both *for* and *against* humans; e.g. military weapons can be both means of defense and aggression. A physician, normally, cures people, but the same knowledge he/she possesses opens for

¹³⁵ In *Physic.*, lib. 5 l. 8 n. 9 *Deinde cum dicit: manifestum est autem etc.*, manifestat idem per inductionem. Et primo in alteratione corporali: quia aegrotare est contrarium ei quod est sanari, quorum primus est motus a sanitate in aegritudinem, alius vero ab aegritudine in sanitatem. Hoc etiam patet in alterationibus animae: quia ei quod est addiscere, contrarium est decipi, non ab ipso, sed ab alio. Hi enim motus sunt in contraria ex contrariis; quia addiscere est motus ab ignorantia ad scientiam, decipi autem a scientia ad ignorantiam. Quare autem addit non per ipsum, ostendit subdens, quia sicut in scientia contingit quod aliquis per seipsum acquirat eam, et hoc vocatur invenire; quandoque vero non per seipsum sed ab alio, et hoc vocatur addiscere; ita contingit quod aliquando aliquis decipitur a seipso, aliquando ab alio; et hoc proprie opponitur ei quod est addiscere. Et hoc etiam apparet in motu locali: quia motus sursum est contrarius ei qui est deorsum, quae sunt contraria secundum longitudinem; et motus qui est ad dextrum, est contrarius ei qui est ad sinistrum, quae sunt contraria secundum latitudinem; et motus qui est ante, est contrarius ei qui est retro, quae sunt contraria secundum altitudinem. Sed considerandum est quod hic loquitur de istis differentiis positionum, scilicet de longitudine, latitudine et altitudine, secundum quod sunt in homine: quia sursum et deorsum considerantur secundum longitudinem hominis: dextrum autem et sinistrum secundum latitudinem eius; ante et retro secundum grossitiem eius, quae dicitur altitudo vel profunditas. Item considerandum est quod secundum sursum et deorsum invenitur contrarietas etiam in motibus naturalibus: sed secundum dextrum et sinistrum, ante et retro, invenitur contrarietas in motibus, non secundum naturam, sed secundum motum qui est ab anima, quae movet in has contrarias partes.

him/her a possibility to harm people incomparably vaster than that of a layman. Departing from universal principles (being and non being) man is free in doing good and evil alike. But there is a science exceptional in that respect. There exists a science called by Thomas “wisdom” because its conclusions are closest to its principles. Metaphysics departs from the cognition of being and advances towards the Fullness of Being. The Way it treads is a relation in the fullest sense of the word.

CHAPTER V. MEASURING MOTION

The time of natural events is essential for the kinetic proof of the existence of God. But neither the time physics normally speaks of nor the historical time so. If the world had been perpetual (and the infinite potential sequence of events had occurred in it), the value of the proof would not be affected in the least. The proof analyses the *ordered* sequence of events, not the imaginary infinite series of *incidental* facts. The proof demonstrates the existence of Eternity, for only God is eternal: His life is an everlasting “now” encompassing (and ordering) every possible number of facts. As was noted in PREFACE, 8., the historical time humanity lives in is only relevant for the rational assessment of the veracity of Revelation: there was, indeed, a point of time when God showed up physically in the human history. But the time we ordinarily live in, is – first of all – the time of natural facts which we see with our own eyes. Now, it seems pivotal to see them acutely enough, which is to say: to “number” them adequately.

1. The beginning in time. Numerus numerans and numerus numeratus

The minor premise of the demonstration of the existence of God (In the chain of the moving and moved we cannot advance (*procedere*) in infinite) involves the notion of measuring. Even the outstanding modern theoreticians of science (e.g. John Steward Bell) found it necessary to revise the idea of measuring. All the more so, the philosophy of nature must do this, since, over the centuries after Thomas’ death, the way the natural processes have been analyzed has changed so radically that it has seemed to some that the medieval approach has proved completely outdated. In particular, measuring has been associated with using apparatuses and contrasted with that obtained by e.g. naked eyes, which admittedly were not as perfect and accurate as the senses armed with artificial aids. This “artificial” type of cognition has been believed to be a privileged kind of measuring, whereas the natural one, by its very essence,

not as minute as that availing itself of artificial devices. Now, should the very term of measuring be maintained after all, a type of “measuring” proper both to the everyday experience and to *scientia naturalis* ought to be distinguished. As has been said, it should be distinguished between experiencing and experimenting and their order (the priority) settled too.

PROCEDERE used in the premise of the proof might be translated as both “proceed” (advance) and “trace back”. Apart from how they both might be evaluated, they are neutral in Aristotle and the term “go on to” (infinity) might be safely used. Perhaps the only difference consists in putting the stress either on transcending (i.e. removing) what appears insufficient to fulfill the desire for (the cognition of) the ultimate, or directing the desire straightforward towards the absolute. The difference between *via (modus) negationis* and *via eminentiae* (*Summa Theologiae* I, q. 13 a. 8 ad 2.) can be seen in this context. *Via eminentiae* is used in the Fourth Way: the one leading to the fullness of being. The Eminent, however, is not so because of its dimensions. Being is situated at the apex of all perfections (qualities), and the Supreme Being encompasses them all.

God is infinite, because the cause of what *must be finite* (things which perish and come to existence are no doubt finite) must transcend the finite (every possible one). A line geometry speaks of is no exception: it is but *potentially* infinite, because being potentially divisible: its division (a motion) *precedes* its “infinity”. It is, thus, finite in some respect. The proof from motion proceeds in the direction opposite to that of the mathematical abstraction: a metaphysician advances towards the *actually related* in nature and eventually towards its Ultimate Cause. Thus, every attempt to model metaphysics after the fashion of exact sciences must result in destroying the validity of its conclusions and the certitude of the proof in question in particular. (Transposing mathematical categories, e.g. the category of infinity elaborated by Cantor, onto a field essentially foreign to them might lead to serious misunderstandings). The certitude was attacked in the Middle Ages already in the context of the problem of infinity. Avicenna claimed that the infinite can exist actually provided it was incidental. Thomas rejects the stance: being actual is incompatible with being incidental: the very essence of the proof of the existence of God consists in retracing what is actually related, and related to its Transcendent Cause in the end. An infinite sequence of events unrelated actually (existing potentially only) is theoretically possible. The world might have had no beginning in time. Augustine thought it possible (for those who ignored the Revelation it was acceptable); Aristotle thought it probable. If the Book of Genesis says the opposite (there was a beginning in time), the truth is revealed and not demonstrable. A linear sequence of events might have been possible, but God decided to create the world in time, not from eternity.

Generally, the objects of mathematics are proportionate to (a disciplined) human mind, whereas the subject matter of metaphysics is so disproportionate to it (to its *ordinary* actions) that some despaired it to be graspable at all. All the more, is the *Cause* of the subject matter of metaphysics (God) disproportionate to human reasoning. Indeed, God cannot be subjected (*subiectum esse*; ὑποκείμεθα) to any reasoning; the proof in question consists in subjecting human reasoning to what appears eventually to transcend it infinitely. John Duns Scotus thought that the so-called virtual being was proportionate to both human and divine mind so that it was a convenient means to demonstrate God’s existence. But Scotus himself testified to that the “demonstration” was not going to be what it had been before: in his *Theoremata* (a

mature work of his) he is outspoken of that “God’s existence could not be demonstrated”. Kant’s critique was anticipated; the Greek naturalism rejected and a blind alley of Apriorism blundered into.

Human concreteness (and human history too) is opposite to the certitude of the proof in question. Human affairs are affected by incertitude and the circumstances of moral actions are difficult to assess adequately (are potentially infinite). The reasoning Aristotle adopts in his *Metaphysics* is a methodical approach, but no “idea of God” is approached therein. To the contrary: ancient readers of the text had to abandon preconceived ideas of divinity and to proceed into the unknown. Thus, they got to the threshold of Revelation unable to proceed further. Neither philosophy nor science in general can save men (approach their concreteness). Perhaps, at the threshold of the Unknown, the frailty of human mind is just more painfully perceptible. Thomas speaks of *angustia philosophorum* in this context. Angst is not (as Heidegger claimed) the beginning of philosophy; it is rather an awareness of its limits; but an awareness of the limits of the world we live in first of all. Aristotle’s first philosophy is the most general science, and that it why, most probably, it is not very much to the modern taste. The concreteness of the human bondage is commonly accustomed to, and the anxiety of losing the acquired dominates. Still, there is, according to Plato and Aristotle, a “fear” at the beginning of philosophizing, for astonishment is a species of the genus “fear”. It is, nevertheless, a quaint fear: a philosopher abhors the mundane and the concreteness of human existence in the pursuit of the Universal Cause of good. However, the philosopher (in the Platonian Myth of Cave) shares his attitude with the others similarly affected by the blight of the concrete (and tethered to the earth). A perspective of the liberation operable by God only looms then.

Some believed that the status of metaphysics might be defended by allotting Aristotle a certain place in the history of philosophy and safely separated from the “modern” interpretation of motion and the way it could be measured. Thus, it would be about identifying the “historical Aristotle” and the history would have determined Aristotelianism as such. Now, “historical Aristotle” has never existed and must not exist at all. The notion is simply oxymoronic. The human life cannot be defined in temporal terms; all the less the worthiest one can be so – the life of a philosopher (let us remind that, according to Thomas, Aristotle was *the* Philosopher with the capital “P”). The human existence in general and the existence of the outstanding minds (of philosophers and scientists) especially transcends the spatial temporal.

Consequently, it is up to the philosopher to determine what the real principle (of motion) is. The Greek notion of ἀρχή means both the principle and the end, whereas the latter term is equivocal (and significantly so) in English, Latin (*finis*) and Greek (τέλος). The term of ἀρχή can be thus applied to both the starting point and the objective of reasoning. The term “line of reasoning” might be understood almost literally, and the line supposedly corresponding to the set of objects (points). However, and figuratively speaking, the “line” of reasoning proper to mathematics (and comparable to a set of elements) might be supposed to be but a subsection of a more encompassing one and proper to Physics (sentences – premises and conclusions – might be imagined as “points” also). In other words: besides and beyond (*viz.* both *before* and *after*) the termini of this subsection, *something more* might be expected to be found nonetheless. Moreover, the assumption might be all the more justified as

exploring the very “subsection” might have led to finding the boundaries the nature of which appeared something of a mystery to the science called exact. This was the case with the interpretation of the discoveries of quantum mechanics. When John Steward Bell argued “Against measurement” it was admittedly about the “before” and the “after” of “the line reasoning” proper to mathematics. Bell’s objections are all the more valuable as not concerning the problem of the demonstration of the existence of God *directly* and not liable to be suspected of being “existentially engaged” (taunted of indoctrination and being biased). The objections are objectively valid (neutral) and thus usable in the demonstration as its firm and objective footing.

The problem of the “line of reasoning” might be understood in terms of its generality too. Generalization had been a characteristic feature of the progress of science until, say, the middle of the 20th century. Thus, it might be believed that the more general a principle (and the “line of reasoning” protracted towards the sources), the more general the conclusion (and “line of reasoning” protracted toward the ends).

Some principles (e.g. those adopted by Descartes) had proved pragmatically valid for some time at least, albeit, if seen from a broader perspective, they may appear even naive (e.g. his notion of matter). From the strictly practical point of view, the experimental method was assessed as efficient and the progress hoped to issue uninterruptedly in the future. Still, the conviction exploded when some interpretations of the discoveries of quantum mechanics appeared. For those espoused by holism, were simply detrimental to science.

So, the problem how to “protract” the “line of reasoning” adopted in science appears to be not historical at all; nay, it was, so to say, anti-historical, because the problem how to distance the history was in fact faced.

Aristotelianism was blamed for hampering the progress of science and the paradigm adopted by Descartes and Bacon is marked with idiosyncrasy towards it. However, every now and then science proved to be hampered, so to say, by itself, which was, parenthetically speaking, a mark of its verifiability. It was expected to proceed nonetheless and it could indeed, provided the nature of obstacles is – paradoxically – understood after having reassessed the Aristotelian paradigm of science. Normally, if losing the way in the wilderness, one turns to the point where the bearings had not yet been lost. Thus, the problem of Scholasticism and Aristotelianism is as a-historical as no other can possibly be. It was the problem how to distance history; how to bracket the romantic idea of time and progress deadly to science. Thus (as was mentioned in PREFACE), the supreme science must be tackled a-historically. No one problem can be as a-historical as the problem of the ultimate (and transcending the temporal); and no solutions as profitable as these rashly rejected out of unjustified reasons in the past.

First of all, Aristotelianism had been rejected because being ignored (as was mentioned in the preceding CHAPTER). The definitions important for how Aristotle understood motion and the way it might be “counted” are to be adduced first.

Time is a measure of motion, but time itself seemed always something of a mystery to man. Obviously, we exist in time; but is it good or bad to exist so? Ancients did not harbor the romantic idea of progress and the magic power of time. We read in “Physics”:

A thing ... will be affected by time, just as we are accustomed to say that time wastes things away, and that all things grow old through time, and that there is oblivion owing to the lapse of time, but we do not say the same of getting to know or of becoming young or fair. For time is by its nature the cause rather of decay, since it is the number of change, and change removes what is.

Especially, the human existence cannot be defined in temporal terms. A senile decay of power comes in the life of *each individual*. Should humanity be any different, it was, supposedly, because of its collectiveness only. However, if we expect our existence to transcend time, it is because *any person* (each of us) is able to contemplate his/her own humanity (nature):

... to be in time does not mean to co-exist with time, any more than to be in motion or in place means to co-exist with motion or place. For if 'to be in something' is to mean this, then all things will be in anything, and the heaven will be in a grain; for when the grain is, then also is the heaven.

Hence, plainly, things which are always are not, as such, in time, for they are not contained time, nor is their being measured by time. A proof of this is that none of them is affected by time, which indicates that they are not in time.

Human being-in-time consists in the ability to be conscious of the fact (and thus the old age need not be identified with senility); we can reflect and count the time, i.e. assume a distance towards it; we can define time for:

Time is a measure of motion and of being moved, and it measures the motion by determining a motion which will measure exactly the whole motion.

It seems that not only science but the everyday language can advance toward a better understanding of time relations. Thus, the human existence is not that much stamped with the mark of temporality as rather with attempts to master its lapse.

The historical development of Proto-Indo-European language bears a testimony to the fact. There were, at some stage thereof, but three tenses in it: present, perfect and aorist. Historically, the language developed in Greek towards considerably more complex system of tenses. The same tendency is visible in Italian and French. Some new categories were elaborated.

Moreover and just to the point: there was no passive voice in the Proto-Indo-European language. Thus, the sentence: "omne quod movetur" might have been understood as: "everything that moves itself" (the medial voice existed and the verb could have a reflexive meaning). The difference (essential for the kinetic proof) between the moving and the moved was not clear then. Thus, the development of the everyday language prepared the room for philosophical thinking. There was no evolution. There were discrete stages of development, as human actions are discrete and dissect the current of time. The motion is marked by the continuity of its own. But the way we approach it is opposed to continuity and that is why motion can be understood at all.

Verbs describe actions first of all and human actions in particular. Thus, if BE could describe human life in general (Aristotle equals perfect being with life), no passive

counterpart of it would be conceivable save a complex one and built with the prefix NON or the similar one; e.g. “the human soul *is immortal* and human existence *is not* restricted to the material world”. But the idea that verbs in general can describe passions too might have sounded bizarre and the discovery of the passive voice appears the breaking one.

The differentiation between actions and passions is somehow connected with humans’ being-above-time, which is mirrored in the ability to form real definitions. In a definition, IS must be used and the complement of the passive voice (a participle) replaced by a predicate; e.g. the sentence: “man IS an animal” must have been preceded by such as: “man is hurt; injured; stunned”, and – generally – all complements that characterize *apparently* the susceptibility of his animal nature. Being an animal is in fact tantamount to being subject and susceptible of actions affecting what can be described as the animal nature. True, some active participles could follow the IS, e.g. “working”, “walking”, and, first of all, “thinking” (the only one *purely* active doing), but the most formal in things (being) is indefinable. Being *something* is always less than to exist formally. Things are only definable because *being in potency* to exist. Human thinking advances from potentiality towards the fullness of being.

The science on nature assumes such an approach. The approach is a kind of measuring broadly speaking, and thus the way we number the motion should be determined too.

Further, there is the same time everywhere at once, but not the same time before and after, for while the present change is one, the change which has happened and that which will happen are different. Time is not number with which we count, but the number of things which are counted, and this according as it occurs before or after is always different,¹³⁶ for the ‘nows’ are different. And the number of a hundred horses and a hundred men is the same, but the things numbered are different – the horses from the men. Further, as a movement can be one and the same again and again, so too can time, e.g. a year or a spring or an autumn.

Not only do we measure the movement by the time, but also the time by the movement, because they define each other. The time marks the movement, since it is its number, and the movement the time. We describe the time as much or little, measuring it by the movement, just as we know the number by what is numbered, e.g. the number of the horses by one horse as the unit. For we know how many horses there are by the use of the number; and again by using the one horse as unit we know the number of the horses itself. So it is with the time and the movement; for we measure the movement by the time and vice versa. It is natural that this should happen; for the movement goes with the distance and the time with the movement, because they are quanta and continuous and divisible. The movement has these attributes because the distance is of this nature, and the time has them because of the movement. And we

¹³⁶ The two adverbs adduced at the end of the sentence clash with the preceding words. There a dissonance, but in fact, only natural to Aristotle. Normally, and according to usual collocations, we could have expected NUMBER to be defined in the way entries in a dictionary normally are. We could expect it to be as uniform as definable. But there is no plural “nows” to be found in any dictionary. Aristotle shuns the simplicity of collocations and advances his own understanding of time; the one that bear no marks of the acclaimed Heideggerian Stimmung (moods). Words do not simply harmonize (stimmen) in Aristotle. These remarks are all the more to the point as Heidegger appreciated that much Aristotle’s “Physics”.

measure both the distance by the movement and the movement by the distance; for we say that the road is long, if the journey is long, and that this is long, if the road is long – the time, too, if the movement, and the movement, if the time. (Aristotle, Physics IV. Ch. 12; translated by R.P. Hardie and R.K. Gaye).¹³⁷

The definitions in Greek are as follows:

Phys. IV, c. 11, 219b 1

τοῦτο γὰρ ἐστὶν ὁ χρόνος,
ἀριθμὸς κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον.

οὐκ ἄρα κί-

νησις ὁ χρόνος ἀλλ' ἢ ἀριθμὸν ἔχει ἢ κίνησις.

Phys. IV, c. 11, 220a 24

ὅτι μὲν τοίνυν ὁ χρόνος
ἀριθμὸς ἐστὶν κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον, καὶ
συνεχῆς (συνεχοῦς γάρ), φανερόν.

Phys. IV, c. 12, 220b 8

ὁ δὲ χρόνος ἀριθμὸς ἐστὶν οὐχ ὥς ἀριθμοῦμεν
ἀλλ' ὁ ἀριθμούμενος, οὗτος δὲ συμβαίνει πρότερον καὶ ὕστε-
ρον ἀεὶ ἕτερος· τὰ γὰρ νῦν ἕτερα.

Thomas comments the distinction between the number of nature and the number of their quantity in the following manner:

In Physic., lib. 4 l. 19 n. 2. Dicit ergo primo quod manifestum est ex definitione temporis prius data, quod tempus est numerus motus secundum prius et posterius, ut supra expositum est; et iterum manifestum est ex praemissis, quod tempus est quoddam continuum. Licet enim non habeat continuitatem ex eo quod est numerus, habet tamen continuitatem ex eo cuius est numerus: quia est numerus continui, scilicet motus, ut etiam supra dictum est. Non enim est tempus numerus simpliciter, sed numerus numeratus.

594. He says therefore first [420] that the previously given definition of time makes clear that time is “the number of motion according to before and after,” as was expounded above, and that time is a type of continuum, as is likewise manifest from what has gone before. For although it does not have continuity insofar as it is a number, yet it has continuity by reason of that of which it is the number: for it is the number of a continuum, namely, of motion, as was said above. For time to not a number absolutely but a number of something numbered.

¹³⁷ <https://ebooks.adelaide.edu.au/a/aristotle/physics/contents.html>

In Physic., lib. 4 l. 19 n. 4. Et primo quomodo sit idem vel non idem simpliciter; secundo quomodo sit idem secundum quid, ibi: amplius sicut contingit et cetera. Dicit ergo primo quod tempus simul existens, est idem ubique, idest respectu omnium quae moventur ubicumque. Non enim diversificatur secundum diversa mobilia; sed diversificatur secundum diversas partes eiusdem motus. Et ideo tempus prius et tempus posterius non est idem. Et hoc ideo, quia prima mutatio praesens, cuius primo et principaliter numerus tempus est, una est; sed huius mutationis altera pars est, quae iam facta est et pertransiit, et altera, quae futura est. Unde et tempus alterum est quod prius fuit, et alterum quod futurum est. Et hoc ideo, quia tempus non est numerus simpliciter, sed numerus alicuius rei numeratae, scilicet prioris et posterioris in motu; et huic numero semper accidit esse alterum, et prius et posterius, propter hoc quod ipsa nunc, secundum quod se habent prius et posterius, semper sunt altera. Si autem esset numerus simpliciter, tunc esset idem tempus et mutationis quae praeteriit, et eius quae futura est; quia numerus simpliciter est unus et idem diversorum numeratorum, ut centum equorum et centum hominum. Sed numerus numeratus est alius diversorum: centum enim equi sunt aliud quid a centum hominibus. Et quia tempus est numerus prioris et posterioris in motu; quia alia sunt quae in motu se habent prius et posterius secundum id quod praeteriit de motu, et alia secundum id quod sequitur; propter hoc est aliud tempus praeteritum, et aliud futurum.

He says therefore first that the time existing at a given moment is the same everywhere, i.e., it is the same in respect to everything that is being moved anywhere. For it is not diversified by reason of the diverse mobiles, but by reason of the diverse parts of the same motion. For which reason a prior time and a later time are not the same. Why? Because the first and present motion, of which time is primarily and principally the number, is one; but one part of this motion has already taken place and is past, and another will be in the future. Hence there is one time which is past, and another time which is future. This is so because time is not number absolutely but the number of something numbered; namely, of the “before” and “after” in motion. And this number always varies and is “before” and “after,” because the “now’s,” as before and after, are always other. But if time were number absolutely, then the time corresponding to the change which is past and the time corresponding to the change which is to come would be the same, for number absolutely is one and the same of different things counted as, for example, in the case of 100 horses and 100 men. But number numbered varies with different things. For 100 horses are not the same as 100 men. Since time is the number of “before’s and “after” in motion; and since the “before” and “after” of a past motion are not the same as those of that which follow, therefore the past time and the future time are other and other.

In Physic., lib. 4 l. 17 n. 11. Secundo ibi: quoniam autem numerus etc., manifestat quod dictum est per distinctionem numeri; et dicit quod numerus dicitur dupliciter. Uno modo id quod numeratur actu, vel quod est numerabile, ut puta cum dicimus decem homines aut decem equos; qui dicitur numerus numeratus, quia est numerus applicatus rebus numeratis. Alio modo dicitur numerus quo numeramus, idest ipse numerus absolute acceptus, ut duo, tria, quatuor. Tempus autem non est numerus quo numeramus, quia sic sequeretur quod numerus cuiuslibet rei esset tempus: sed est numerus numeratus, quia ipse numerus prioris et posterioris in motu tempus dicitur; vel etiam ipsa quae sunt prius et posterius numerata.

Et ideo, licet numerus sit quantitas discreta, tempus tamen est quantitas continua, propter rem numeratam; sicut decem mensurae panni quoddam continuum est, quamvis denarius numerus sit quantitas discreta.

Secondly, [411] he makes clearer what has been stated by distinguishing number, saying there are two. First there is that which is actually numbered which can be, as when we say ten men or 100 horses, and this is called “number numbered,” because it is a number applied to the things that are numbered. Then there is the number by which we count, i.e., number considered absolutely, such as two, three, four [the counting numbers]. Now time is not a counting number; otherwise the number of anything would be time; rather it is a number numbered, because it is the number of before and after in motion that we call “time,” or else the things that are counted before and after.

Therefore, although number is discrete quantity, time is nevertheless a continuous quantity on account of the thing counted, just as ten measures of cloth is a continuous quantity, even though ten is a discrete quantity.¹³⁸ (translated by Pierre H. Conway, O.P. College of St. Mary of the Springs, Columbus).¹³⁹

Only the number inherent in things is the real one and defines motion as analyzed in scientia naturalis. Now,

- 1) The Aristotelian statement regarding the nature of time *seems* to be similar to the Heideggerian one, and connected with both philosophical subjectivism and idiosyncrasy towards reasoning and analyzing as understood by Aristotle. Had time not existed before humans appeared on the earth? Aristotle avoided seizing philosophical problems in historical terms (as history “is the least philosophical of sciences”, whereas philosophy is most scientific), but the very possibility of motion existing without being counted in the way proper to humans must have been taken by him into account, after all. It is proper to humans to grasp motion by senses (motion is the proper object of the common sense – *sensus communis*) and to analyze it (in the rational manner) subsequently. Now, before man had appeared on the earth, and possibly after the mankind will have been peremptorily wiped out of its face too, time existed and will so, albeit not analyzed and sensed in the way proper to humans. Another way of counting it must be possible too. The latter, however, is not to be understood anthropomorphically, and an “absolute seeing” advocated by subjectivists, such as Berkeley (and Heidegger). Berkeley tried to save the “reality” of things when they were not accompanied by the benevolent presence of the human mind, which apparently rendered them both sensed and “real”: God’s “seeing” made things real. A difference exists between how man and God grasp the motion, but not as simplistic as that. The motion is *sensed* by humans, whereas the real number of it and inherent in things is *understood* by God. Thus, the conclusion of what is to be demonstrated in the

¹³⁸ The problem of the moral values addressed in CHAPTER II must be seen in this context. There is no continuity; no evolution in them admissible, otherwise e.g. the theft could have become, and evolve towards being, morally acceptable. Time does not account for morality; neither does modernity of customs. Actions are moral to the extent they are “anachronist” and aimed at mastering the lapse of time.

¹³⁹ <https://dhsprory.org/thomas/Physics.htm>

present book is anticipated. It might be provisionally expressed in the poetic Platonian: “God is the measure” of laws (“Laws”). Let it suffice, for the time being, to state that the order of the universe (the world as possibly “analyzed”) is retraceable to its Source, and to the paradigm of the order (God’s “seeing”) existing first in the Source. For both the existence of the first Cause can be demonstrated and Its being able to grasp (to “count”) the motion triggered by It. Moreover, the Source does not need to be understood as a “weak” one and able to foster mathematical ideas only, whereas unable to substantiate them in the material world (the Great Mathematician). The way God measures motion is as efficient as able to spawn creative actions.

- 2) The lack of the distinction adduced in the title of the Section is plainly visible in Kant and his followers. Time was connected with the a priori form of sensuality which enabled us to count things, whereas the problem
- 3) how to differentiate amongst them emerged and was, in fact, insolvable. The problem is *what is known* properly speaking. Moreover,
- 4) the problem of the modalities of being cropped up. The past events are, obviously enough, necessary. The future ones – as it seems – are possible. Now, how is it possible that the uniform measure of temporarily renders the possible necessary? The fact that the WWII had broken out is, for all we know, necessary (it cannot be annihilated *now*). But the fact is by no means equal to that it was going to be inevitable at the turn of the 20th century. It is the aforementioned problem of the natural necessity. The problem was not, in fact, solved in modernity.

According to Thomas, things are measured in mathematics simpliciter. But this does not add up to that the absolute necessity of things is measured thus, and, all the less, wrought by it. The conjunction of both notions is, in fact, oxymoronic, as being wrought is contrary to being absolute (i.e. not worked out). Once a certain type of cognizance and its possibility is precluded, the ultimate possibilities of the human existence and the ultimate object possibly knowable happen to be reduced to *some* measure. The Great Mathematician is a deity, because mirroring naively the way of reasoning accepted as the only workable and valuable, though inflated to cosmic dimensions. Nor is God a “Mind of nature” for that matter, albeit the way scientia naturalis analyzes motion is less likely to deify a particular gauge of motion. For scientia naturalis analyzes motion in the way different to how the (exact) physics does, and the formalism accepted is less prone to lead to some guises of reductionism. Is, then, man a measure of everything, and especially when accepting the allegedly perfect mode of measuring? Should it be so, the very complexity of the human nature (and its cognizance not being homogeneous) testifies to that the measure (and the measured also) cannot be grasped uniformly too. In particular, it is impossible to grasp the Absolute Measure of everything without realizing the restrictions inherent to the human mind.

De Trinitate, pars 3 q. 6 a. 2 co. 4. Et ideo in divinis neque ad imaginationem neque ad sensum debemus deduci, in mathematicis autem ad imaginationem et non ad sensum, in naturalibus autem etiam ad sensum. Et propter hoc peccant qui uniformiter in his tribus speculativae partibus procedere nituntur.

[Neither imagination nor senses should be used in the first science; whereas in mathematics – imagination without senses; in Physics – both. Therefore, it is an error to try and proceed in the three sciences in the same manner].

Man should be defined as animal rationale. Now, according to Thomas, *rationaliter procedere* is proper to *scientia naturalis* and the way it counts motion is such a proceeding. It is, at the same time, and as suggested in the adduced definition, the way most natural to human understanding. Contrary to beings that might be deemed bereft of body and sense, but intelligent nonetheless, humans draw the matter of the cognition from their senses. If an animal intellectuale existed (the probability mocked by Kant), his/her intellect would “see” things in a simpler way than humans do. That is why angels are intellectual rather than rational. For being rational (reasoning) implies deduction. No naked essences of things are visible to our minds. They are clad with appearances, i.e. with how they appear in natural motion and in their natural interactions. The reasoning (if adequate) mirrors the way natures act on each other. It is proper to humans to pass from one object to another; not, however, casually and without any objective in mind. The natural motion of the human mind corresponds to how things are naturally related in the world. The definition of a nature, as Aristotle has it, is a shortening of reasoning. Thus, the definition of man adduced above results from analyzing how he/she interacts with his/her closest environment. What man really is appears from the way he/she acts, or at least tries to.

Before being analyzed in the way proposed in the Aristotelian *scientia naturalis*, motion had seemed indefinite and appeared to some (e.g. Zeno of Elea) a non-being. After rejecting the Aristotelian paradigm it was about to be seen as vague and evasive, and the modern relativism followed. There is semblance of truth in this BEFORE and AFTER, but the primitive data of experience are in fact not that much vague, as rather indiscriminate, i.e. encompassing both the moving and the moved indiscriminately. Now particular sciences differ according the aspect of the experienced world enhanced as relevant and drawn (abstracted) from the primitive data of experience. The aspect, however, might be grasped either strictly and a science built, or with some probability only, and the aforementioned demonstration through a sign (proper to the everyday cognition) obtained (as was mentioned in PREFACE). The demonstration proper to science is that accomplished by (definable) notions rather than signs.¹⁴⁰

Kant failed to make out the difference between *numerus numerans* and *numerus numeratus*. Number was seized intuitively (in the *Anschauung*) and the only difference amongst sciences consisted in the type of *Anschauung* (intuition). The applicability of

¹⁴⁰ De Trinitate, pars 3 q. 6 a. 1 c. 3. Primo quantum ad hoc, quod sicut anima rationalis a sensibilibus, quae sunt nota magis quoad nos, accipit cognitionem intelligibilium, quae sunt magis nota secundum naturam, ita scientia naturalis procedit ex his, quae sunt nota magis quoad nos et minus nota secundum naturam, ut patet in I physicorum, et demonstratio, quae est per signum vel effectum, maxime usitatur in scientia naturali. Secundo, quia cum rationis sit de uno in aliud discurrere, hoc maxime in scientia naturali observatur, ubi ex cognitione unius rei in cognitionem alterius devenitur, sicut ex cognitione effectus in cognitionem causae. Et non solum proceditur ab uno in aliud secundum rationem, quod non est aliud secundum rem, sicut si ab animali procedatur ad hominem.

mathematics to the cognizance of the natural world was possible due to that both mathematics and physics grasped things intuitively first, the only difference being that of pure (mathematics), or empirical (physics) intuition applied. In short: the entire cognition was grasped in formal terms of consciousness (intuition was an element thereof). As, however, reasoning unfolded in the realm of consciousness, no definite differences among natures could be spotted, and both consciousness and “mater” were understood, consequently, as uniform. As a consequence, the difference between the *physical* cause and its effect waned. The formal mathematics speaks of makes the proof from causality impossible.

At the same time, it seemed to be obvious that the difference between mathematics and physics consisted in the former being more exact and formal, whereas the latter approaching the ideal to a greater or lesser extent. Kant claimed that some sciences are closer to *Anschauung* than the others.

Thus, the cognition of what is – to use the Aristotelian terms – formally inherent in natures would have been impossible and the only formality possibly achievable – that of concerning quantity. Any objects would have been cognoscible to the extent they can be numbered. All other relations, in turn, would have been reducible to those deemed paradigmatic ones.

It was at least implied that all relations, and the human relations in particular, can be analyzed into simple elements, and the latter were real only. The word of analysis would be used in this context literally (*ἀνάλυσις* means: “loosing, releasing, dissolving, retrogression, retirement, departure”) as science would resemble a gigantic dissecting-room with no room left for more complex forms of being, e.g. those triggering a vital motion. Moreover, as life manifests itself in morals prominently, values similar to those normally measured would be allotted to ethics (CHAPTER II. 3).

Still, as thinking is a vital motion too, the question arose whether it can be described *adequately* in quantitative terms also, and its relation to the material world accordingly. Once more the problem appeared of the nature of the relation of mathematical objects to material things. Is the relation countable also?

These questions were answered by Aristotle. The relation of science to its objects is real and asymmetrical. That is why e.g. mathematical objects are both a-local (their form is indiscriminately referable to all local objects) and objectively valid (the form is an accident of being).

According to the uncertainty principle, the relation of the mathematical objects to the material ones could be safely elucidated as for those “big” enough, whereas those “small” were describable in stochastic terms only. In fact, both were such, but the probability of observing those “big” ones approached $P \rightarrow 1$ with such a good approximation that the statistic unity was to be taken pragmatically for the “real” one.

When carrying out an experiment in general, a sheer probability of elementary events occurs, and the sum probability results from the product of the probability of particular events. The state of a system was believed to be describable as the tensor product of the states of its parts.

The stochastic interpretation of the discoveries of quantum mechanics was unacceptable to many (e.g. to Einstein). It seemed unacceptable that measuring affects the

identity of objects. It was believed that besides the values actually measured, *something* existed that would render things as stable and “real” as had been accepted previously.

The discoveries added up to denying the locality of objects as understood before. The problem was how radically (if ever) a-locality characterizes (affects) nature. Einstein assumed that it affected the actual state of measuring only, because there was something at the bottom of the universe, albeit possibly *actually* not measured. Einstein advocated the existence of the so-called “hidden variables”, which would preserve the absolute applicability of the formalism valid in mathematics unreservedly. The variable had not yet been disclosed and measured, but were going to, anyhow.

For instance, the probability of two events A, G , measured by apparatuses with proper vectors $\hat{a}, \hat{g}$ would equal:

$$P(A, G | \hat{a}, \hat{g}, \lambda) = P(A | \hat{a}, \lambda) \times P(G | \hat{g}, \lambda).$$

The adequacy in describing the events would have been guaranteed by the hidden variable λ – the one not yet actually measured. But on the other hand, if the hidden variables waned, the system would be not-cognizable as one and definite.

The Copenhagen interpretation of quantum mechanics assumed the uncertainty as characteristic and inherent in the observed nature. It might be called *an* indeterminism, whereas the stance of Einstein – determinism tout court. To Einstein’s mind, the alleged indeterminism resulted from an observation being incomplete; but being incomplete was not that much proper to the world seen, but to its being seen in certain circumstances. Determinism could be rescued after all.

In the thought experiment EPR (the authors were: Einstein, Podolsky and Rosen) the theory of hidden variables was presented. The theory implies that an adequate measuring was possible; the objects were something definite and not only behaved in such a way as the Copenhagen School assumed. The theory of hidden variables implies using instruments as accurate as enabling “absolute measuring”. But in fact their existence had already been implied by the advocates of the traditional determinism (Leibniz).

Now let us assume that a hidden variable really exists, although not possibly subsumable under the scheme of determinism as proposed by Leibniz. There is a determinism in nature and presented in the book II of “Physics”. There is a *conditional* necessity in nature. It might be called a final necessity too, or – to use a modern term (about to be elucidated on the following pages of the present book) – a retro-causality: nature is directed to its end, so that some means appear to be necessary to achieve it. Analogically: the statements of a science are necessary just after accepting a certain aspect of the experience data. It is impossible to *direct* the objects of experience in the way measuring permits them to. In fact, it implies a contradiction as the very directing is an action performed in the world and cannot be exempted from the rules governing it. To the contrary: science is unilaterally directed to the subject matter thereof. Moral directions can follow science (prudence), but moral actions are not similar to experimenting in the least.

Experience (to be distinguished from experimenting) is a kind of co-existence in the world. That the coexistence be possible, the adequate information as to the state of energy of the environment is necessary. The statistic information does not suffice. The adequate

information about the object sensed is essential to become part of the environment in which an object (knowing and alive) is expected to exist.

Schrödinger's Cat is statistically alive just because of falling prey of "experimenting" i.e. fragmenting it into the elements "small" enough to be expected real. "Nature" as devised by Darwin is no different to an ordinary (which is to say: bereft of innovative thinking) experimenter. Both Schrödinger's Cat, and Darwin's Animals ("Species") are but statistically alive. Both deserve their existence to a lucky coincidence of circumstances. Naturally, the problem is not that of things losing their reality, just because, and in the moment of, being observed or forming part of the human environment. Humans are able to contemplate the beauty of nature without disturbing it by practical objectives. It is about things being seen as fragmented only and their identity being ignored and disrespected. In this sense, the human "environment" might prove destructive indeed, but it is preposterous to believe that humans can safely destroy it and profit from it at the same time. The destruction wreaked upon it must turn against humans sooner or later. The problem of a cat might seem banal, but the same *mutatis mutandis* observes as for humans and the fragmentation of the human life is tantamount to its destruction. In fact, the destruction is being wreaked every time the integrity of human life is disrespected.

The conditional necessity of nature Aristotle speaks of consists in that the parts of a system form a totality and are only understandable as parts thereof. For instance, the "essence" of the human hand is relative in the sense of the hand being what it is if related to the human body only. The "objects" that form the human body are a-local in the sense of the place being first allotted to the totality, but to its parts subsequently (secondarily) only. The latest scientific discoveries confirm the fact of the a-locality of the parts of living organisms. The special theory of relativity is not violated, if two parts are entangled in such a way that they "communicate" faster than the speed of light. It is not violated, because they are *not different objects* but one and the same, and its parts do not exist apart from the totality in such a way that it would be possible to construct the totality out of these parts.

If absolute determinism had to be maintained, the human activities in the world would have to unfold according to the same necessity, and experimenting too. Fichte understood the problem perfectly, so that his "liberty" was in fact a desperate attempt to exempt human life from the necessity of nature. If the variables (Einstein speaks of) had been hidden in the sense of being actually undisclosed, the very disclosing them would have permitted manipulations with objects and tampering with the human liberty (e.g. experimenting on it) too. Both "freedom" and "necessity" fused in Hegel into a bizarre hybrid called Absolute Spirit. Some evolution of the human civilization was postulated. But Hegel was honest enough to determine the point of convergence of the evolution of man. The absolute state of consciousness was meant to be that pivot.

As, however, the conclusions seemed ridiculous to many (e.g. for William James) and the end of history proved to be bogus, the scheme of Hegel's reasoning was transported into the realm it would thrive for a considerable time because of its absurdity not as blatant as that of the archetype. Nature, according to Darwin, was an experimenter, and various possibilities explored in the lapse of time. Tacitly, the real existence of parts ("matter") was taken for granted, and all systems ("species") built of the parts deserved their apparent identity to a lucky coincidence of material interactions of the elementary bodies. Naturally,

that the “origin” of them might have a definite sense and advance instead of erring, a certain ideal horizon of reality was to be assumed. Mathematical thinking was such a horizon. Nature experimented “bearing in its mind” the ideal paradigm of mathematics; the progress aimed at what things ought to be according to their absolute value assessed in mathematical terms. What is really interesting here is that errors were possible, but reflecting upon them (experience in the normal sense of the word implies being experienced, i.e. a positive knowledge having obtained from mistakes) impossible. But experience appears in nature indeed; a perfect life is impossible without it. There are no blind alleys nature happens to blunder into, but experience data reflected upon so as to escape undesirable actions experienced previously. Admittedly, if animals *reflect* upon the sense data to some extent at least (as far as the animal instinct permits it), they cannot not be “machines” as Descartes imagined. All the less, humans are similar to the objects they produce with their own hands. The very possibility of producing objects involves regarding them from without i.e. in objective terms. Now, observing them from distance implies not being one of them.

It seemed to many that the human being-in-the-world must be similar to being present in it like e.g. a gauge is present in a glass of water. As the gauge has a definite volume and if emerged in the water makes its level rise, it must disturb the identity of the object measured. Similarly, human actions would have to be connected with disturbing, destroying or whatever the name of acting in the natural environment and *had to be so* because being allegedly proper to humans. Some, consequently, thought it advisable to “defend” nature against man. But is that defending exempted from the general rule (of destruction)? If man, in general, is an “invasive species” and must remain so, will *any men* be able to act not destructively just because claiming so? (Defending against destruction will be destruction itself if man as such is defined as an intruder). Now, man need not be a gauge (this or that way) after all. The gauge distorts and destroys *by its nature*; man need not so, because his nature is defined by contemplating nature and its Creator. Natural laws exist and human actions must conform. But nature is variegated and splitting a stone is not similar to killing for pleasure, albeit both a stone and an animal are natural beings. All the more, the most perfect nature is to be defended. Human rational nature (human individuals existing in this nature) must be respected and given the rights to develop. The way of the life of any person should be protracted to the ultimate. *Some* nature must be defended against *some* men. The spiritual nature of men must be defended against the irrational affecting human actions. Natural environment, commonly so understood, is not, moreover, likely to be destroyed by the one who admires its beauty before using it and without abusing its resources.

Man happened to be regarded as *homo faber* and defined as such also. The fact was overlooked that human experience of the outer world is first of all connected with perception of its beauty and the peace of mind that follows upon reflecting on it. It is perceived due to the hidden variable acting behind the scenes of experimenting, which is species sensibilis – the transparent medium of cognition. All acting that follows is both free (for it is up to an individual to decide which part of the universe to explore) and determined in the way the scientific demonstration demands. Thus, both freedom and necessity are present in the human life, but in the way quite different to that imagined by Hegel. The finality of nature accounts for both the stability of human existence and for its authenticity also.

2. Aesthesis - perception

Differentiating between objects big and small (mentioned above) is far from being as exact as an exact scientific assessment could have required. However, there is a clear difference between phenomenal and real objects. These divisions, according to Wichmann, overlap, and the former need not be taken literally. Wichmann's distinction seems to be definitive of objects, whereas the first one seems to be incidental to them only. At the turn of the 20th century, microscopic objects were thought to be discovered in physics, but in fact *real* objects were re-discovered and were called microscopic ones incidentally only (they happened to be named so). The importance of the discoveries of quantum mechanics consists in making out a blank spot in science which was, subsequently, allotted to the objects called microscopic. Still, the problem remains to what, and to how many, objects the place could be allotted to; what the nature of the objects that could occupy the place is.

What is, then, the adequate gauge of the reality of objects? How could they be identified and defined to be real? Now, as for such like objects as e.g. a stool, screwdriver, or hammer, their identity is obviously defined by the possibility of them being possibly usable. A screwdriver damaged significantly is a screwdriver still for a person clever enough to use it despite its deficiencies. The same holds true as for all objects made by the human hand. In a sense, their identity can be "decided" or, at least, enhanced by man.

A considerable amount of objects we live amongst are wrought by the human hand and human industry. The remnant, on the other hand, might seem inconspicuous (and "tiny"). But it might prove more important than the majority of objects nonetheless (the artificial ones make up this majority). Nature and will are, according to Aristotle, two principles present in the world. The artifacts depend, obviously, on the human will; nature does not, but it *sustains* them nonetheless. The growth of the artificial world might be, accordingly, demanded to be sustainable. But nature, which can only sustain them, must be, for this purpose, known theoretically (a-practically) first. The extent to which the progress is sustainable must be gauged by the respect of the laws of nature. Things are what they really are before being used (and experimented on) according to the will of who uses them.

It seems preposterous to speak about objects "statistically real". But there is nothing unbecoming in assessing the *probability of being used*. In this sense, all artifacts are statistically real, as they could be used to a lesser or greater extent. Still, the problem of – queer as it might sound – the statistically real objects, cropped up in science nevertheless.

A cat was locked in a steel chamber, along with a tiny bit of radioactive substance that can with equal probability decay within one hour or not. If decayed, however, it discharged a container of poison. The first atomic decay would have poisoned the cat, but the probability equals 50%. Thus, the cat was 50% alive. This was (in short) the famous Schrödinger's Cat.

The chamber the cat was locked in was an artificial means, and the efficacy of using it can be statistically assessed. So, arraying all instruments of the aforementioned experiment (they were defined more minutely in original) is *statistically effective*, just as all human actions are. The actions concern individuals only, and there is but probability that they have been addressed adequately. The science concerns universals. Their identity cannot be affected

by science, but particular things, used according to how science permits them to be, can be destroyed after all.

According to Thomas, there is always a margin of uncertainty in human actions, which can be – as it seems – called their probability. Actions cannot affect universals (the object of science) save *accidentally* only. The fact the aurochs had existed before the last specimen of the species was killed, is *absolutely unchangeable*. The misunderstanding concerning the allegedly “statistical beings” consists in transporting the categories of the set theory unto natural world. The individuals were believed to be but elements of sets. Now, the set theory does not say anything *directly* about real objects. The reality cannot be defined in quantitative terms.

A man can decide about using objects, but cannot decide about the identity of those real ones. The apparatuses used for observation are used more or less effectively, which, however, does not amount to that the natural objects *are* (exist) “more” or “less”. Gabriel Marcel’s famous saying is, obviously, but a metaphor. Man cannot *be more or less*, albeit he/she can live more or less intensely depending on how active the life and how dynamical the innermost principle (the intellect) from which the activity issues forth. In this sense, the distinction is relevant. It is *also* about using things as effectively as they only can be. But it is, in addition, about fostering the very ability to do things resting with man’s power to some degree. The degree can be measured, no doubt. Still, it is preposterous to believe that the principle of measuring could, or had to, be measured too, and human nature similarly. Quantity is *an aspect* of the relation of the principle to the end. “How much” is valid in-between principles and ends only.

It is the human freedom and creativity that makes for the identity of artifacts. The apparatuses used in observation and objects usable in general have in common these characteristics. The objects seen are, obviously enough, real. But if seen through artificial lenses, they are seen “artificially” too. The artificial aids do not affect the identity of real objects, but do affect the way we see them. The artificial means of cognition are just means and can *never become objects*. They cannot (make us) see objects as perfectly as senses can. An apparatus cannot see a cat’s life. The senses, to the contrary, can provide a material for such a cognition. In this respect, the artificial means of cognition are poorer than those natural ones.

The difference between objects big and small came into light due to the simple fact that humans can produce objects comparable with the dimensions of human body only. Some are too “small” to operate on them. Others, on the other hand, are too “big” to be significantly affected by human activity. Both are, consequently, not phenomenal objects because not yielding to human reshaping. However, as for objects comparable with the dimensions of human body, they might have seemed to be absolutely subservient to man, perchance in the way Hegel and Marx dreamt of. Although the possibility of “salvation” through the science they devised has been precluded, the possibility of auto-destruction of the human race by extending the scope of objects affected by the humane activity – paradoxically – appeared. It is, then, the problem whether the place discovered by science in the 20th century could be allotted to the objects not only comparable, but – generally – related in any way to the human body. A cat or a specimen of endangered species can be such an object. In fact, all species can

be so, as far as they have “originated” in human mind, which is to say: a mode of *using* them has been discovered.

The reality of natural objects is defined all by itself, but becomes disturbed every time man tries to intrude nature with pragmatic objectives in mind. To be precise: not *species* of things can be so, but individual real substances. The intrusion, accordingly, might be as subtle as that of an observer and affect the way he perceives species only, but it can infringe the integrity of individuals of those species also if practical objectives follow the observation. The observation is carried out for its own sake or subservient to its practical use, but it is a voluntary act nonetheless. A disorder can appear in the environment if a disorder in the human will precedes.

According to Aristotle, the voluntary in man is originally preceded by the contemplation of the beauty of nature (the very beginnings of science are founded thereon). The intellectual sustains the voluntary. It is preposterous to believe that “Nothing can possibly be conceived in the world, or even out of it, which can be called good, without qualification, except a good will”,¹⁴¹ because good is to be found primarily in the relation to nature. Indeed, evil is defined by Damascene in terms of being against nature.¹⁴² Nature, however, must not be taken as a monolith or conceived in a reductionist manner. Good will must follow the most natural in man, because the intellect is definitive of his/her nature. The relation of the human will to the existing world makes human objects good, honest and possibly usable. The relation of the Divine Will to the-objects-about-to-be makes them come to existence first (in every possible way) and is definitive of goodness as such. If human will conforms, it can reach beyond the existing world.

The objects created by human hand are aimed at protecting humans before the destructive influence of nature. As, however, the very process of producing might be lost control of, the artificial objects can turn against man no less vehemently than those natural ones. The opposite of what was expected of them might appear. They are able to endanger the very existence of man on the earth. Aware of the fact at least indistinctly, man tries to return to the nature uncontaminated by human greed (the irrational appetite bound to miss the intended mark). The contact seemed to be something of an antidote for the alleged blessings of civilization.

¹⁴¹ Fundamental Principles of the Metaphysic of Morals, by Immanuel Kant (1785), translated by Thomas Kingsmill Abbott.

<https://www.gutenberg.org/files/5682/5682-h/5682-h.htm>

¹⁴² Summa Theologiae II-II, q. 65 a. 1 arg. 1.

Damascenus enim dicit, in II libro, quod peccatum committitur per hoc quod receditur ab eo quod est secundum naturam in id quod est contra naturam.

Summa Theologiae I-II, q. 82 a. 3 arg. 1. Videtur quod peccatum originale non sit concupiscentia. Omne enim peccatum est contra naturam, ut dicit Damascenus, in II libro. Sed concupiscentia est secundum naturam, est enim proprius actus virtutis concupiscibilis, quae est potentia naturalis.

The problem of the alienation of man might be seen in this context. The problem was given pivotal importance in Phenomenology and Marxism. A perspective of an eschatological liberation loomed before the eyes of the contemporary consumer of the goods of civilization, because the consumer appeared to be enthralled by them. Humans happen to be rather entangled in, than helped by, the objects created artificially. Instead of a safe abode, a kind of imprisonment was created. The hope for liberation might have assumed supernatural dimensions, and assessed as definitive for humanity. Still, no matter how much “spiritualized” the artificial *means* can never become *ends*.

The ecological movement is apparently less ambitious, albeit its objectives might prove to be no less illusory. For trying to distance artificial means using them at the same time would resemble a wild goose chase.

Some inventive devices appeared to restore the immediate contact with nature. The more sophisticated, however, the more blatant the fact that they must prove to be the opposite of what they were (declared to be) intended. They cause not that much transporting a civilianized man into uncontaminated nature, as rather transporting civilization into nature (and thus contaminating it). Obviously, the identity of natural objects is damaged or at least impaired every time it is intruded. This does not amount to, as was said above, that nature ceases to be what it was. This means that natural objects are being removed from the place they can only occupy. Aristotle deemed those places to be eternal and immovable, and the individuals in them perpetuate to infinity. The latter however, proved to be false. Man can destroy nature, and, for all we know, can wreak auto-destruction too. Although the possibility of existence is eternal and need not be substantiated, Scotus was wrong in assuming that the possibility of existence must *precede* the actual existence. It might follow it, after the existents have been destroyed. Still, the rational plan of the universe, cognoscible as such, cannot be destroyed anyhow. Moreover and contrary to what Scotus claimed, the plan is not *directly* cognoscible. The order of nature is cognoscible in the core of nature only.

The reason why some objects are hardly perceptible is easy to retrace. The identity of those artificial ones is defined operationally. That makes the difference to the natural objects, which cannot be defined so. If tried to, nonetheless, they are seized through artificial means, which affect their alleged identity.

The problem is that of whether an environment exists as *close and natural* to an object as able to define its proper place in the universe. The artificial means of cognition are not such, obviously enough. But on the other hand, natural objects are adjusted naturally so that no discrepancy appears when they face each other. A natural object is relative to its closest environment only, and cannot be defined in the background of the set of all objects and events seized *a priori*.

For a considerable time, it had been believed that an absolute container of events exists in the way Wittgenstein tried to define it at the turn of the 20th century. The same thought *mutatis mutandis* was included in the statement advocated by the Copenhagen School concerning quantum superposition. A quantum system such as an atom or photon could supposedly exist as a combination of multiple states corresponding to the different possible outcomes of observations. Thus, a possibility existed first (*esse diminutum*; the Arabic *mavjud*) before being actualized in the interaction with a particular object. The core of the argument consists in claiming that an object can be defined in relation to any objects

indiscriminately; not in relation to its closest natural environment. In particular, the idea appeared that nature could *sustain* some states of the actuated possibilities, and the only problem consisted in profiting from the possibilities; i.e. exploring them cleverly. The problem was how to use things and preserve them untouched at the same time.

In eco-tourism, objects are defined operationally. People are told what to do (and what to *feel* for that matter also). The algorithm of operations is strictly observed. In fact, people perform the same operations as if not having moved from home. Thus, they are not that much brought to contact with pure nature as rather bring to it all facilities deemed proper to a civilized man.

Both artificial objects and apparatuses are meant to facilitate interaction with natural objects. Apparently, a short-sighted person profits from using lenses. Still, no matter how skillfully made, they can never replace sound eyes. They always *stand between* us and nature and cannot do anything save obstruct and distort the world seen.

The natural perception, to the contrary, is not mediated save by a transparent medium called species sensibilis. It can be grasped with naked eyes only. The sensual perception is described in Greek as aesthesis, as hinted in the title of the Subchapter. The etymology of AESTHESIS had been yet perceptible before Kant. His transcendental aesthetics was part of the theory of cognition. Thus, as the very term suggests, the experience called aesthesis plays the pivotal role in human cognizance in general. Moreover, the immediate contact with objects was especially postulated by Husserl, although the means proposed might proved insufficient. This immediate contact is in fact expected of fine arts. Technics used by an artist is subservient to the main objective of fine art – bringing a spectator to the immediate contact with objects that otherwise might go unnoticed.

The notion of artifact might be applied to all objects wrought by human hand. Still, it applies especially to those testifying to the rational presence of man on the earth. Thus, e.g. ancient artifacts bear a testimony to the beginnings of the civilization. The practical side of them is, obviously, of little interest to a contemporary man. What appeals to us, and transcends the span of centuries at the same time, is their aesthetical shape. This only has a universal character.

It might be attempted to try and define the way the artist sees objects. Apparently, a picture stands between an observer and the crude nature in pretty the same way any artificial objects do. But there is something special *in the way* it does so. Pictures and museums can be defined operationally for the benefit of a sightseer. But the very essence of fine art consists in seeing objects a-operationally; i.e. as if no other artificial objects surrounded them. The artist is someone who sees things a-practically, i.e. isolates them from the artificial background and sets them in their closer natural surroundings only. The majority of people are unable to see things in such a way. When searching for an object a person is, commonly, instructed how to get to it. The artist's approach is different: an object seen is unique and not definable in practical terms. The artist grasps the uniqueness of an object and conveys it to the public by means of the artificial technique. It is about stripping an object of the practical side and approaching its pure essence. The paradoxical approach of fine art is not reproducible in any other human making.

A special kind of cognitive attitude appears at the same time and not restricted to fine arts only, but definitive of THEORIA in the ancient sense of the word. If man can be defined

at all, he/she is not that much a worker, or a consumer, but rather the one contemplating objects with no practical objectives in mind. One can put up with mere contemplation, but can advance further and reflect methodologically upon the sense data and abstract the intellectual purport therefrom. He/she can build metaphysics (a science for its own sake) and be defined (as in Gilson) as the animal metaphysicum too.

Being intellectual is, at the same time, by no means tantamount to being *conscious* of the entire world we live in, to the effect of being completely engaged in creating it. The attitude proper to an intellectual creature is that of irony (Socrates) and distance (Plato). They both can define man also. Taking into account the complexity of human nature, and both the praxis and theory present in it, man can be defined as a rational animal, i.e. able to understand the world and create his/her own place in it (Aristotle).

It was attempted to define man in terms of consciousness nonetheless. A very sophisticated depiction was given of how consciousness appeared in the history. According to Hegel, human activity consisted in exteriorization and interiorization (Entäußerung and Erinnerung). The motive was drawn from the mediaeval Arab-influenced, *Liber de causis*. “*omnis sciens qui scit essentiam suam, est rediens ad essentiam suam reditione completa*” (*Liber de causis*, prop. XV). Consciousness became what it was hoped to be as soon as reflected in the mirrors (of the minds) of those who could partake of it. Thus, cognition became a social function and man had to be defined accordingly. It was not sufficient to know, it was indispensable to be acknowledged (anerkent) as such by the others. An individual gained the “identity” when mirrored in the minds of the others. The essence of consciousness consisted in reflecting and mirroring the beam of intellectual light erring between those expected to become humans. In fact, they were so as soon as particular desires were sacrificed on the altar of the *volonté générale* (Rousseau). It is *an* interpretation of Islamic thought. However, the interpretation might appear to some (Muslims) completely unjustified and inappropriate, and the reaction that is bound to follow – irrational and brutal.

There is no doubt that Europeans are indebted to Arabs for preserving the bequest of the ancient culture. Our civilization originated from antiquity, but was helped in it by open-minded Arab thinkers. Thus, the attitude of mutual respect shows up to be indispensable, because Arabs themselves had been uncivilized until they accepted the bequest of the pagan and Christian antiquity. The respect, however, is not the same as yielding uncritically to the influence. One can be patiently harked without being given the right to obtrude one’s own sentiments (especially if not rationally justified). The aforementioned Parrhesia is the openness of mind. The relation of Islam and Christianity unfolded in exemplary manner in the Middle Ages when this attitude was a norm. Unfortunately, the attitude was lost and both cultures influenced each other in the way far from being rational.

The state of gaining consciousness was originally described by Averroes in the terms of monopsychism. Latin Averroists spoke of attaining the state of *intellectus adeptus* (an acquired consciousness). There was a common psyche, whereas individuals as such were simply brutes. The problem was how to become melted into the blissful common psyche departing from the bestial state of existence. There is something between the principle and the end, which could be – as it seemed – called civilization. It could be supposed that a step in the wrong direction would render all steps that follow strayed from the desirable path. Apparently, emotions are characteristic of animals. There is no dissimulation possible in

them; they are as authentic as no other man can be. According to Rousseau, a reasoning man is a debauched animal. Thus, for attaining the bliss of communication in the common psyche, an individual was expected to resign from reasoning and be as authentic as only emotions permit. Instead of reasoning properly so called a kind of insight, intuition, or whatever the name might be postulated. Heidegger attacked the traditional definition of man: animal rationale (ζῷον λόγον ἐχόν). The authenticity of “thinking” was guaranteed by a “mood” (Stimmung).

Not only thoughts do direct our utterings; sometimes words are directive of thoughts suggesting or hinting the path to be advanced. STIMMEN means TO ATTUNE also. Thus, at least indistinctly, the fact was spotted that there was, at the bottom of reasoning, a perception of *harmony*, and of the natural *concordance* of things. The aesthesis underpins the reasoning anyhow.

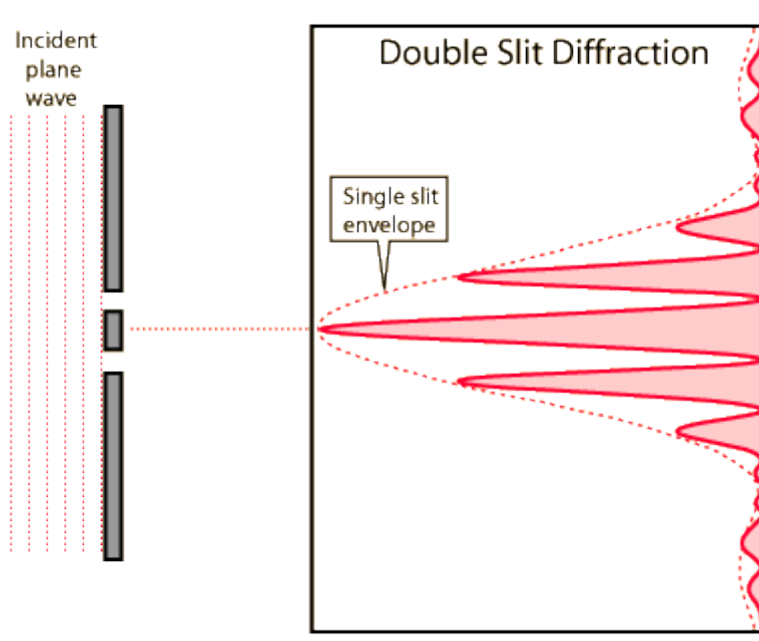
Thus, the problem of what is really perceived first appears in all its ramifications. The problem is whether objects can be defined in relation to the totality only, or rather defined according to the natural properties manifested in the interaction and relation to what their natural environment is. Aesthesis – perception is concerned with objects that attract our attention. They are mutually adjusted and that is why they can be contemplated first and known theoretically next. Harmony is perceived first. According to Aristotle, it is proper to man to focus on the sense data as intensely as no other animal possibly can. This marks the starting point of the activity properly called human. Science, art and technics originate from the esthetical perception of the world. No animal can see the beauty of the universe.

There are many types of human activity and it is really difficult to subsume them all under one common denominator. Consciousness was expected to be this. But the term is both vague and – paradoxically – exclusive of innovative thinking. There must be something *at the bottom* of the interaction with the environment that makes man what he/she really is. There is a special kind of perception that triggers as manifold types of activity as only possible.

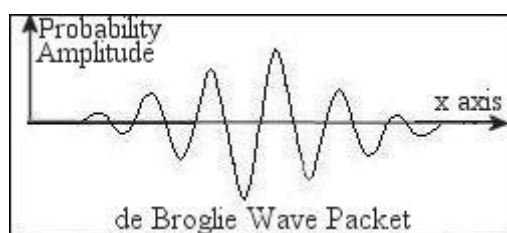
We can expect the activity of an individual entering a society to be as dynamic and profitable for the society as the principle thereof allows him to. The firmer a basis (and more resilient too), the more efficient an action. A child grows up in his/her natural environment. The nature of the homeland is such an environment. There is no need to search for uncontaminated nature on the outskirts of the civilized world. It is rather natural to restore the integrity of the closer environment to its natural state. Man learns to name things according to how they present themselves to him/her in the nature of the home country. But there is a closer environment besides. The family is such an environment and the mother language is the most natural one. Things are named according to how they commenced to be in the language and minds of ancestors. If cut off his/her natural environment, one becomes alienated and spell-bound in the circle of artificial objects. The attempts to break the circle might be as desperate as those of a cornered animal. The reconciliation with how natural things are given to us by the Transcendent Cause (in the way described above) might be despaired to be obtainable also. Enthrallment and “liberty” might melt into a bizarre hybrid. The bequest of Hegelianism could dominate.

3. Perceiving and Reflecting

Sense perception is, by its very nature, rather evanescent. It seems easier to grasp its effect, i.e. the image of the object sensed in our mind. All the easier is to try and delineate it on a sheet of paper. The delineated, however, might appear, at the same time, simplified (i.e. “one-dimensional”) image of the perceived. Thus, provisionally only, we might depict the perceived as a wave. The image of a wave diffracted on slits presents itself as follows:¹⁴³



Waves are readily perceptible if diffracted. Let us, consequently, equal two terms: “diffracted” and “perceived”. We might suppose that the envelope of the wave represents the outlines of a *perceived body* (a particle). It are bodies indeed that we expect to see, so we might reverse the line of reasoning: a particle – generally – can be viewed as a single wave-packet, and the dimensions of the image as presenting the probability of finding a particle in the area described by the coordinate x – for a single maximum of the wave.¹⁴⁴

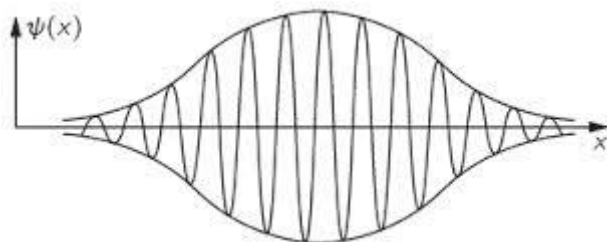


¹⁴³ <http://hyperphysics.phy-astr.gsu.edu/hbase/phyopt/imgpho/dslit.gif>

¹⁴⁴

https://www.google.com/url?sa=i&source=images&cd=&ved=2ahUKEwjXrrW_8cziAhUNAhAIHTV4AKcQjRx6BAgBEAQ&url=http%3A%2F%2Funiverse-review.ca%2FF12-molecule02.htm&psig=AOvVaw3QoThy4S-T2ssXKRazyTP3&ust=1559636669939751

A single wave-packet, in turn, with its symmetrical envelope can be plotted thus:¹⁴⁵



The problem is whether the image depicted in this manner is adequate, or – which adds eventually to the same – whether it is the image of a *real* body with its proper place. The wave function Ψ is supposed to describe the state of energy of that object adequately, whereas the three-dimensional space is but a container of probability. We might be interested in what a body *really* is, not just in what it appears to be. It might be unsatisfactory to know only how things are mirrored; reflected in our imagination. Traditionally, it was philosophy which asked the question on *the nature* of the perceived bodies. Probability might prove insufficient.

Diffracting grating (a system of slits) might be an element of an apparatus used for measuring. Measuring, in turn, as known, due to the simple fact that the apparatus itself has a certain dimension and mass too – must lead to some disturbing of the Ψ function (must affect the state of the energy of an object when interacting with it).

It might be supposed that the human eye is *an* interferometer and its retina is *similar* to a diffracting grating. Still, the way these “apparatuses” are used *in nature* makes for the difference to the ordinary apparatuses for measuring. Contrary to apparatuses, senses do not infringe the identity of the objects, because they do not intrude their proper places. Cognition is a-local, as said above. The proper place of a body, if seized in purely mathematical terms, is the point where the second derivative of the envelope of the wave function equals zero. The wave function corresponds to the proper state of energy of a given object. This place (“point”) is not affected when sensed.

The object is similar to a SHO, as has been said above. Described in the terms of classical mechanics, the place in question might be called a nod; e.g. a place where a violin string is clasped. Now, using apparatuses instead of naked senses is tantamount to “clasping” “strings” beside their natural nodes. Obviously, both frequency and energy of the object will be affected then.

The sound of e.g. a music instrument is heard due to the fact that oscillations issue from it and the acoustic wave permeates nodes. As for macroscopic nodes, their physical properties (springiness and inertia) account for the quality of the sound. The process inverse to emitting a wave occurs when the sound is heard. Tympanic membrane is a nod. It is

¹⁴⁵ https://cdn.shortpixel.ai/client/to_webp,q_glossy,ret_img,w_525/http://www.physics-assignment.com/wp-content/uploads/2012/11/189.png

permeated by the wave. The nod can be called a barrier too, and the term will be addressed later on.

Something similar occurs in transmitting and receiving radio waves (e.g. in mobiles). A sender works at a definite frequency, identical to that of the receiver. Transmitting occurs because the antenna (transmitting aerial) is a nod and permeable by radio waves. Receiving is a reverse processes. The wave is propagated in a medium, and its properties define the speed of propagating. The most natural medium is that which defines the speed of the electromagnetic wave (the “springiness” and “inertia” of the void: ϵ_0 ; μ_0 , define the speed of light).

Human eye might be *similar* to a receiver. The difference to that artificial one, however, consists in that, contrary to all artificial devices, natural objects are not adjusted by human hand. Artificial objects must be so, and the relation of a sender to a receiver seems to be paradigmatic to all human artifacts – they are “simultaneously” adjusted so as to correspond to each other. The human eye and the object seen are adjusted or, if you like, attuned also. But they are infinitely more accurately so. Nature might be imagined to “attune” natural cognitive faculties to natural objects.

The sender and receiver are adjusted because made in the same manner. In other words: they are equally artificial, or “artificial in the same manner”. On the contrary, the eye and the object seen by it are equally natural. Although apparatuses and instruments must be tried to be adjusted, they must eventually prove disproportionate to natural objects. The observation carried out by means of them is never adequate.

Artificial means must be produced in the same manner, as they are only relevant to those who *know* how to use them. Some believed that the same holds true as for natural objects and the same *rational* order is to be found in nature, but the word of MAKING or CREATING is more appropriate than the word of PRODUCING. The notions in question were not neatly distinguished by Plato, who used the name of DEMIURGE (Artificer) to describe the efficiency of the First Principle, underestimating, at the same time, the harmony of (perceived) nature.

The problem Plato faced was in fact that of being and of a theory that should deal with being as such. The “produced” by the Platonian Demiurge was a *deficient* being modeled after the fashion of what *really is* (exists as such). The same problem assumed in Avicenna, the form of the *modalities of being* (the possible-the necessary). In Plato, Demiurge’s activities do not advance towards exploring all possibilities of being, but are restricted to the possibilities of the material container of things (titchene), so that Avicenna’s considerations might seem really sophisticated however inconclusive. The problem of metaphysics and the modalities of being it tackles (ens inquantum est ens) was addressed two centuries after Avicenna death, because Thomas’ Third Way (from necessity) analyzed it, but sank into oblivion shortly thereafter. The relation of the contingent existents to the necessary being remained unclear. Consequently, some of Avicenna’s modern followers (e.g. Leibniz) underscored the primacy of the necessity of being, whereas the others enhanced the value of the contingent (“existents”). The philosophy of life relishes in the contingent, but *real* life can never flourish without a firm relation to what *really is*. The relation in question must be explored anyhow.

In Thomas, metaphysics regards both the possible and the necessary. Both are intertwined in nature, but the task of metaphysics consists in severing them. Scotus assumed

that the modalities were simply given a priori. He failed to substantiate the abstract in the natural world. The algorithm of substantiation had been proposed by *scientia naturalis*, but the Aristotelian science was incriminated by Scotus as pagan and its importance disregarded. Moreover, the problem of possibility and necessity was about to be reduced to that mathematics if applied to the crude (contingent) nature.

Possibilia naturae, according to Thomas, are all objects characterized by excluding what is beyond the potency of prime matter. But the factual relations and natural cognition are adjusted too in the way a potency to its act is. The relation is asymmetrical and can be reflected on (in science). What is *reflected upon* is the proportion of a potency to an act.

The paradox of simultaneousness becomes visible. It are artifacts only that could be supposed to exist “simultaneously”, whereas no natural objects can so, which has been made clear in the special theory of relativity. The natural relations are asymmetrical, and the inversion of the relation of a cause to its effect would have violated its principles.

The Augustinian statement: *Deus creavit omnia simul* could not be understood save in the theological context (the only relevant one for Scotus). Normally, the order of nature makes for its diversity and asymmetry. From a strictly naturalistic point of view, the *sequence* of events can be explored and analyzed, which makes for the logical *consequence* (necessity) of scientific conclusions. Human senses are similar to those animal ones, but human cognitive powers in general are more efficient in retracing the order of events. The human sense data are open to a rational analysis.

An artificial receiver is apt to attune to a given frequency of an object. Still, not that much frequency as such but energy of an object is relevant to the animal existence (they are related according to the equation $E = h \cdot \nu$). The survival is only possible if the energetic equilibrium of a system and its environment exists. The equilibrium is the same as adjustment; finding the proper place for an individual in the changing universe. Although the notion of adjustment implies that the environment exists *first*, the adjustment is not to be understood in temporal terms. An animal adjusts to the *anticipated* circumstances possibly threatening or fostering its existence. The order of nature is not explicable save in purely teleological terms. The history of the universe (if real) is not *relevant to its order*. Should adjustment be seen so dynamically that no constants in nature existed and nature as such evolved, the adjustment would have been transient and fleeting along with the present “now”. The objects would be adjusted because equally present. Nature would be conceived anthropomorphically, and its objects similar to artifacts.

Edmund Husserl fell prey to an illusion that an object can be made present to the human mind. A sophisticated procedure was invented so as to make objects *originally* present. Still, no matter how carefully elaborated, the cognition can never render objects present as such. They all exist *before* being perceived. They can be only *re-presented*, but never present. The representing, equating, adjusting or whatever the name, makes for the possibility of the animal existence (and the human one especially) to endure, i.e. to chime in with the chain of causes and effects.

The definite proportion between causes and effects must exist. Objects blatantly *disproportionate in magnitude* cannot make up a system. But the inverse is not the case: the proportion of magnitude and number does *not suffice* for being *existentially attuned*. The *equilibrium of energy* is more important than the proportion of dimensions.

The animal existence and survival in the world too is only possible if the proportion of energies of the objects that make up the natural environment is perceived first. However, it was believed that the human existence was different in this respect. For it was supposedly mathematics (seizing quantitative proportions of objects) that made for the uniqueness of the human existence. Obviously, animals are not “mathematicians” and can survive nonetheless, but the human “survival” was expected to be more than that (which is perhaps true).

The most striking feature of the Thomasian thought (underscored by Gilson and Gogolewski) is expressed in the words: *causa prima et universalis, non excludit causas medias* (the first and universal cause, does not exclude intermediate causes)¹⁴⁶. Nay, the causality of God is only visible if retraced departing from the causes and effects closer to our natural environment. They are *adjusted* and present themselves to our senses (and the mind) as such, because the finality of nature cannot be denied. There is no cipher or tongue of nature, but there exist objects which follow upon each other in a definite order and can be named according to this order. As for animals, the animal instinct accounts for the ability to act and react with their environment. A matrix of cognition exists in animals. What, then, does the difference of the human life to that animal one consist in? Is it the issue of *a* matrix? Is there in man a matrix more efficient than the animal instinct? Is mathematics (seeing the world in quantitative terms) such a matrix? Does it explain the human preponderance over animals and the possibility of “mastering the world” (whatever the meaning of the phrase)? If so, and man “evolved” from the bestial past, what rendered men capable of using mathematics at a certain point of their (pre-)history?

The quantitative relations of natural objects are not *directly* relevant to the human survival. It is energy that matters. Energy can be described in quantitative terms, but indirectly only. Everything depends on a reflection. Animals are incapable thereof, but humans can reflect upon sense data. The only problem consists in retracing the specifics of the human reflection. The dimension of objects is not principally relevant to the human existence; the very word “dimension” used figuratively testifies to that man transcends the material world in a specific way.

That humans are capable of building mathematics, is only explicable in the light of the fact that they can reflect upon the imagined and petrify it in the concepts called exact. Images as such are rather dynamical (and evanescent) than static (and similar to “pictures”). It is mathematical reflection that makes them stable. Animals are incapable of retaining images in such a way. It is the difference of *how*; not of *how much*. The ability of reflection is a specific quality of man; he cannot be defined as an animal mathematicum, but rather as “a reflecting animal”. The complexity of his nature makes, at the same time, for the variety of possible reflections.

Mathematics is relevant to the human existence *indirectly only*. A kind of reflection *must precede* it, so as to profit from the sense data to the extent (and the *manner*) animals are incapable to. A proportion of the human body to its environment is seized, no doubt. But it is rather the proportion of *energies* than of magnitudes. So as to find his own place in the

¹⁴⁶ Summa Theologiae I, q. 17 a. 7 ad 2. *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province.

<http://www.newadvent.org/summa/>

changing universe, man must be able to reflect upon his own state of energy (the energy of his body first of all). Then (and no sooner), the possibility appears to adjust to the environment.

Some importance is to be allotted to human instincts, and some activities are explicable in this light. Children naturally shirk the nocuous, whereas adults do not. They are far more capable of auto-destructive actions and prone sometimes to manifest their being adult seizing for drugs, alcohol and the like. There is something that makes up for the drawbacks of the human instincts; something that makes people really mature. It is the intellect. Due to the intellect only, man is capable of finding his own place in the universe. Due to the intellect man is capable of reflecting on the sense data. Due to the practical intellect, humans are able to re-flect if de-flected from the right way.

Other animals have innate in them in the line of natural discretion certain specific conceptions necessary for them, as a sheep has a natural realization that a wolf is its enemy, and so on. But in place of these there are implanted in man certain naturally understood universal principles by means of which he can go on to [figure out] everything that is necessary for him.¹⁴⁷

The reflection upon nature is indispensable for human existence. The reflection unveils a *stratified* structure; the structure of *different* natures that make up the universe. The proportion between different species and the “proper place” of human species in it (its uniqueness) can be settled in science. However, apart from theoretical considerations, there is moral reflection possible in humans too. No matter how perplexed, the line of life can be redirected also, because reflected on.

Moreover, what might be called the “family instinct” is marked by the equilibrium between the sensual perception of the harmony of bodies and the intellectual activity of propagating *values* (*education*), which all raises the human existence above a narrow circle of material objects.

Nature might be imagined anthropomorphically as making up the natural organisms out of small “bricks”, similar to those used in building houses. The similarity might be of some value, provided not clung to rigidly. It is an image, but it is proper to humans (and the history of civilization bears a testimony thereto) that man searched deeper and deeper for the true nature of objects that constitute his environment so as to make his existence more stable. Mathematics is of *some* value there. However, the equilibrium (the energetic one) of natural

¹⁴⁷ De veritate, q. 22 a. 7 co. Sed homini ista provisa sunt in generali, in quantum sunt ei datae manus a natura, quibus sibi valeat varia et tegumenta et munimenta praeparare; et hoc ideo quia ratio hominis est ita multiplex et ad diversa se extendens, quod non possunt determinata instrumenta ei sufficientia praeparari. Similiter etiam est ex parte apprehensionis, quod aliis animalibus sunt inditae secundum naturalem aestimationem quaedam speciales conceptiones eis necessariae; sicut ovi, quod lupus sit ei inimicus, et alia huiusmodi; sed loco horum homini sunt indita universalialia principia naturaliter intellecta, per quae in omnia quae sunt ei necessaria, procedere potest. Et similiter etiam est ex parte appetitus. (translated by Robert W. Schmidt, S.J. Chicago: Henry Regnery Company, 1954).

<http://dhspriory.org/thomas/QDdeVer.htm>

objects requires another kind of cognition (and reflection); the cognition of the discrete states of energy of natural objects. The conceptual language must precede mathematics. There is no matrix in the human cognition. There was something that made human existence on the earth more stable; and something that is infinitely more valuable than any matrix at all. It is the natural language. LOGOS defined the beginnings of the Greek civilization (our civilization). But hand in hand with the reflection on nature (its cognizance), the reflection on the principle of cognition unfolded, according to the postulate: Γνῶθι σεαυτόν (know yourself).

It were Pythagoreans first who put a special stress on the harmony of the world. But at the same time, as Thomas has it, they unduly identified the unity of being with the unity of number. The order of the Pythagorean universe had to share this characteristic. It goes without saying that *a* proportion is originally grasped in mathematics. However, it is by no means certain that the *number* proportion is the only perceptible and thinkable. Perhaps it is just *an aspect* of the factual we live in.

An image of the world is workable by means of lines, planes and the like. Marxists deemed depiction the adequate presentation of objects. Lenin used the word “photography” in this context. Practically, some objects of this “image” happened to be really disconnected, but crammed into it nonetheless. The aspect they were supposedly seen from decided about their relation and the locating made them “real”. Things were not related to each other *directly*, but via a medium, which proved more often than not a crooked mirror. The insight was given to a privileged elite and the mirror was modeled so as to render facts “correct”. Marxists had supposedly an insight in what they called “matter” (matrix) of the universe. The advocates of the co-called scientific Weltanschauung felt free to utter blatant misconstrues denying the traditional definition of truth (ad-equating statements to facts). A person accused e.g. of spying for the West was not given the possibility to falsify the charges, because the “naked facts” did not matter at all.

The similar pattern of thinking is repeatable ad libitum and visible nowadays too. Clichés are in vogue, because thinking without them is demanding. The scorn and disdain towards “naked facts” is a dominating feature of the modern world view. It are not facts reflected upon methodologically but rather “insights” into the totality that matter. Accordingly, it seemed that when emerging from the bestial past man reached an insight, gaining a matrix enabling to see reality as it could only be seen by a privileged “animal”. Images were supposedly reflected in the matrix and the reflexing made for being initiated. This leads to drawing the fundamental distinction between

Reflexing and reflecting.

The actions of a responsible member of a society are supposed to be at least adequate to the stimuli he/she receives. In behaviorism, the actions were called even sheer reflexing. Anyhow, everyone reacts when offended, hurt or injured; the only problem is *how* he/she does it. Some reactions are obviously inadequate, and it seems pivotal to eliminate them and to point out to what is responsible for them. Jean Jacques Rousseau found a culprit. It was the individual intellect that tampered irresponsibly with sense data (reflected on them). The only

way out was to relegate the individual intellection from society and replace it with the common consciousness. Thus, the individual desires would be deprived of their toxicity.

People, no doubt, harbor resentments and react perhaps inadequately when a casual stimulus hits a sore spot. Some happen to be scapegoated not for being culprits but because being unable to react and prove their innocence. Thus, the problem consists in how disarm the toxic emotions without discharging them on a casual and susceptible victim. Difficult as it may seem, the only possible solution is to *address them appropriately* i.e. reflect and analyze them unemotionally. They cannot be decreed or decided to be anonymous. The individual reflecting is indispensable therefor. The reflexing and psychoanalytic séances either on smaller or bigger scale cannot shift the *individual* responsibility indefinitely. Reflexing cannot replace reflecting. A mere consciousness of the fact that an action is noxious to the others without a *repression* (provided by the law) might be rather an incentive to similar actions than a repellent. The individual responsibility cannot *be shared*, because the attempt amounts to its being shifted on the others.

The solution the Revelation offers is an exception; it surpasses pure human possibilities. Moreover, all facts the Revelation speaks of are relevant just because set in this background. They are *equally* valid (and valid as a totality only) just because the veracity of Who revealed them is equally present in them all. This is the only situation in which an authority matters. There is no place for the authority in science. All its conclusions must be certain and proved, and if believed in only, they have but a didactic value.

All other facts related by humans might be adequately or inadequately so. It is only the Revelation as a *whole* that guarantees the proper place of any part included in it. Normally, no natural insight can guarantee that a partial statement is adequate. The statements must be proved to be so. If believed to be only, they are but provisionally valid. Every human authority is fallible and cannot usurp the right to be otherwise.

Diverse as he might eventually appear, man is similar to animals in one respect at least. A safe abode for the individual life is to be found in his/her closest environment first. This existential milieu is not literally speaking a dimension or a space. Science has confirmed the concept of the natural place of the body as espoused by Aristotle. According to the general theory of relativity, space is not an isotropous container of bodies. It may be believed to be “curved”, should the idea of the straight line be preserved as elementary. But in fact, lines, planes and all mathematical objects result from the direct contact of two bodies and the natural place of them both is marked by this interaction. Neither time, nor space are homogenous and isotropous materials that could make up the tissue of the universe. Asymmetry is the most important feature of nature. In particular, the relation of a cause to an effect cannot be reversed as a vector joining two points can.

That no matrix exists reserved for those initiated might be somehow discomforting for those unwilling to take pains to understand the world as it really is. But the fact is a chance for those who are willing to build their own existence and the realm for social existence without destroying the existing: to explore the yet unperceived possibilities. Intellection triggers the maximum of existential possibilities and maximum of freedom too.

An animal is unable to perceive the beauty of nature. A man is able to this and more: contribute to the common good (harmony) of the society he/she live in and to the common good of humanity perhaps indirectly too. Everything depends whether, and to which extent,

the individual creativity is interwoven in the tissue of the causal relations of the universe. A special focusing on sense data enables man to do this.

Humans differ from animals in that the drawbacks of the instincts animals are endowed with are (with usury) compensated by the intellect. The animal instinct (matrix) works almost infallibly in a narrow realm of reality. To the contrary, when broadening the extent of the personal existence and leaving off the state of immaturity, a man harks to his/her instincts less and less. Customs can replace them, but they are valuable only to the extent they are established by the intellect. Due to the intellect, man is able not only to get to know some bodies (as animals normally are), he/she is able to know them all, and this testifies to that the world of bodies not his/her ultimate destination (as Thomas has it). They all might be conditionally relevant, but are eventually irrelevant in relation to what transcends them all.

The human existence, consequently, is different to that animal one not in the sense of “more” but in the sense of “in another manner”. The sense data attract our attention in the way quite unachievable for animals.

The harmony of the universe cannot be reduced to its quantitative aspect. The latter might be a prerequisite of what is normally deemed beautiful. It might constitute a backbone of an artistic masterpiece (e.g. of Bach’s *Kunst der Fuge*), but the essential in it is decidedly something beyond. Let us try to define the essence of music. Is it about the sequence of sounds only? Why animals (which hear obviously the same sequence as we-humans do) are unable to hear the harmony of them?

The key-concept seems to be anticipation here. Animals can only anticipate what is convenient or pleasant. Animals’ anticipation and desires too are tethered to the earth, whereas the human one is rather an ascension.

According to Maurice Merleau-Ponty, Husserl uses the terms protentions and retentions for the intentionalities which anchor us to an environment. Still, the time does not seem to be most important here. The essential is the *relation to an end* about to be achieved, which is but *accidentally* connected with the sequence of time.

If listening to Bach or Tallis, one is confident that every sound about to follow would touch and soothe some strained nerve of his/her bruised psyche. One false note can ruin a masterpiece. A master never puts is down. We trust him that he is not going to. That is why music raises the human mind to the ultimate, and why e.g. Socrates appreciated it so much in his last hours of life. Neo-Platonists, juxtaposed music and philosophy as both uplifting the soul towards the ultimate. Music is not a ratiocination, but is an alleviation nonetheless. It is especially the case with the religious music.

Contrary to animals, man is able to protect his/her existence in no matter how perplexed material circumstances. Due to the original perception of its beauty, man is able to find his/her proper place in no matter how rapidly changing universe. The universe is not foreign to him/her, or his /her being possibly definable by being thrown into it (geworfen as Heidegger has it). The natural environment can appear eventually foreign in the perspective of what surpasses his/her natural condition but no sooner. Only after stating the existence of the Transcendent Principle of the universe, and regarding his/her own life from this coign of vantage, the earthly life might appear unworthy and mundane.

Mathematicism was (according to Thomas) espoused not only by Pythagoreans, but by Avicenna too. Still, there was something different in that Arab one (and that of his followers:

Kant, Hegel, Husserl and Heidegger). The numbers were for them not that much essence of things (as Pythagoreans claimed), but rather superadded to the crude nature. Numbers were “transcendental”, “supernatural” or whatever the name of what renders the matter intelligible. In other words: nature “evolved” towards the “super-natural” and man was supposed to participate of the process in a special way in the moment the “super-natural” was “reflexed” in his mind. At a certain point of the history of the universe, man gained a privileged insight into the allegedly essential feature of the universe.

One fact speaks decidedly against the “harmony of numbers” and the exclusive role played by it in the universe. Mathematical thinking allows man to build artificial devices. Now, their very presence and especially the noise they produce (a pollution of the environment no doubt) convinces that they might be disharmonious for the universe if the end they are made for has been ignored. Singing of a lark is soothing and pleasing our esthetical tastes. Buzzing of an engine is not. The optimistic idea of mathematics explodes when confronted with how mathematics has happened to be used. It is only natural for man to forget about an end when focusing exclusively on the means leading to it. The possibility of using mathematics this way loomed as soon as Avicenna’s thought had been assumed in modernity: numbers had been believed to be “transcendental”, and not just present in nature. Still, it is by no means clear why the beauty of a mathematical theorem becomes, as it were, “contaminated” by a sheer contact with the material world, or vice versa: nature contaminated in the moment it is used, because such a contact seems to be essential for producing things.

Use (*usus*) is in Thomas an element of human acting. It is preceded (should be so) by considerations, the intention of an end, and ultimately by the contemplation of this end. Without the end, things we deal with are rather *abused* than *used*. Harmony is first to be found in man, especially in relation to his Ultimate End.

The natural environment of man is that of nature untouched by his hand rather than that of artifacts. In consequence, the path of an individual life is to be directed departing from these natural foundations (the family; home country; the mother language) with the perspective of the Ultimate before our eyes. On the other hand, trying to “humanize” people according to some matrix and a transcendental ideal is typical of ideologies in general and totalitarianism in particular.

In the perspective of the honest end to be achieved, the natural environment proves not only profitable, but readily “legible”; i.e. pellucid to the human eyes. No animal can relish in the perception of the crude nature, e.g. thunderstorms and the like. Man is an exception here (as was pointed out by Mark Aurelius). Once, however, strayed from the perspective of the Ultimate looming *beyond nature*, man becomes, as it were, spell-bound in the magic circle of artifacts, feeling at the same time, at least indistinctly, being imprisoned and enthralled by them.

The “outlines” of the natural objects present to the human eyes the harmony of the universe. However, this disinterested attitude to nature followed by the deepest interest in Who-is-beyond-nature proves unsatisfactory for the advocates of materialism or the similar kinds of schematizing ideologies. Matter might be believed to be a “barrier” to surpass (Fichte), whereas man called for realizing the transcendental ideal *on the earth*. However sophistically described, the very existence of “matter” is by no means obvious for those non-initiated, at least in the way proposed by Avicenna, Descartes and Marx. Marxists pretended

to have an insight into that mythical matter, which was supposed to justify the actions otherwise called simply criminal. Ordinary people can only see material *things* and can tell between one thing and another. People are not naturally monists. Neither is monism more scientific than any other simplification. Both the nature of physical substratum and the “barrier” (i.e. the place where bodies interact) must be carefully examined. No such an examination was carried out by materialists.

Genuine science chimes in with what the common sense tells about nature. Due to quantum tunneling we see the continuity of the displacement of energy in the place which might be called “barrier” or – more precisely – the natural place of a body. The place can be described in purely mathematical terms, as the point where the second derivative of the envelope of the wave function assumes zero-value. This, however, does not add up to defining it in natural terms.

The fact that the “barrier” is – as it seems – moveable and thus the place of a body possibly infringed upon, explains why it are only humans that can damage and destroy nature. All animals respect the natural places of bodies. They can destroy an individual only for the sake of another one (a “better” one) occupying its place. Man is different here. He/she can destroy the natural place in the sense of threatening the possibility to occupy it by *any animal at all*, which amounts to degrading the perfection of the “barrier”. No animal can do this. The fact issues from man’s special attitude to “matter”. Things can *be measured* when *related* to some ends. For the “how many” is an aspect of the relation of means to ends. No animal can *use* things in the way humans can. Moreover, they can only be used because measured. The use of things, however, cannot define man. Means are only understandable in relation to ends. Ends are first expressed in the everyday language, but seized thematically in philosophy.

Things can be used – which seems to be obvious – in a masterfully manner, because one and the same end may be obtained in different ways. In this aspect, these means can be incidental to each other and those “things” appear to be “contingent”. The mutual relations of things are not seen save in the context of ends. Scotus admitted the fact openly. Natural objects were disconnected and presented themselves to our eyes at random just because they were almost *nothing when compared with the ultimate* presented by the theologian.

Obviously, the objects of the everyday life are ordered in the way that they might be used effectively. Thus, the artifacts are (or at least should be) ordered by man. But what about natural things? Is the *sequence of the objects* before our eyes casual or not? Do things *occasion* our cognition only or do they *trigger* it? The followers of Scotus opted for the former. Is, then, the harmony only to be expected of artifacts? The claim is blatantly false. The contemporary man happens to shun the civilized world to restore the inner harmony of the mind troubled by artifacts. There is, however, something quaint about *how* he does it. If we direct our steps *towards* something, we expect to find something of a definite value (means are definable and assessed in this way). But the modern man directs his/her steps *just outside* the civilized world. Normally we do not expect to find something definite just because *shunning* something else. The contemporary man, to the contrary, expects to find the desirable *directing his/her steps just beyond* the world of artifacts.

This testifies to that man cannot be defined in terms of using things and measuring them too. That is why John Steward Bell spoke “Against measurement”. Science occasions new possibilities to be used. Still, a margin of uncertainty is created at the same time. Things

readily usable can be easily abused also. Moreover, a special ideology can be created so as to justify the proceeding. Scientists themselves saw the fact. Scientism can impoverish both human life and science.

That apparatuses should be something of an obstacle, sounds a paradox. We set them between our sense organs and the natural objects so as to perceive better, but *the way* we do this might be a problem of its own. Human senses are not apparatuses (they do not measure the world)¹⁴⁸. If they had been, it might always be asked *what* (or: *who*) set them in the presence of natural objects in the way apparatuses are normally set *by humans*. This “positioning” seems to define artifacts and apparatuses, but cannot define natural senses. Neither do objects present themselves to our senses at random, nor are we “thrown” into a hostile world. There is a deep harmony in the natural world hardly imitable by artifacts. Artifacts will be always out-of-place if no continuation to the honest end about to be achieved has been guaranteed.

Art – in general – might be defined as “*victoria formae super materiam*” (Thomas). Art (in the ancient sense of the word) could vanquish the matter, but should not tyrannize nature. Formalization seems to be proper to the rational being (the one able to accomplish art), but what sense of formalism is to be accepted as the original one? Are things formalized due to being set against the formal background proposed by the mathematics of scientism? The assumption was denied by science itself. The objects are originally *related as binary*. A cause corresponds to an effect. The fact can be easily lost sight of in a certain type of formalization proposed by mathematics, but the everyday language bears a testimony thereto. Verbs are formal in respect to all other parts of sentences. Each one sentence, in turn, must be *neatly distinguished* from all the others. Otherwise we would have been unable to communicate any thoughts at all – the mathematical definitions included. Another kind of formalism appears, and no less important than that commonly taken for granted. The original one.

Kant associated mathematical thinking with what might be called intuition (*Anschauung*). Things were “depicted” before our eyes, and images were understood as rigid outlines of objects. According to Hume, they are preceded by “vivid” impressions, but they themselves are just similar to pictures. Several images, in turn, superimposed on each other, formed an image of a class of objects. In pretty the same way, a light-sensitive film (traditionally used in cameras) consisted of several layers exposed to light.

Plain as the idea might appear, it is no less simplistic. A sheer introspection convinces that imaginations are rather motions than outlines. The fact is perfectly known to, and used by, those who aim at profiting from manipulating human imagination, viz. those advertising. The Aristotelian definition of imagination reads: *phantasia est motus factus secundum sensum, ut dicitur in libro De Anima* (fancy is movement produced in accordance with sensation) (*De Anima* III, c. 3, 428b 10-17).¹⁴⁹

¹⁴⁸ The problem will be addressed in CHAPTER V. 4.

¹⁴⁹ *Summa Theologiae* I, q. 84 a. 6 ad 2. *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province.

<http://www.newadvent.org/summa/>

The motion of imagination is similar to the motion of a SHO. Analogically, senses and mind too can be understood as somehow similar to SHOs. Thus, the problem is not how the “outlines” superimpose on each other, but rather how imaginations come to rest; i.e. where the “nods” of the standing waves are to be found. For sense data stem from natural objects via mediums just like travelling waves do. They rest in the human mind, because we are able to depict the images of the objects we see. Moreover, they rest in the human intellect quite immovably, which makes for the difference of man to other animals. Eventually however, man finds his rest in God only (in the Immovable):

Therefore, down from the higher place fortified and protected, he, to whom the Lord hath been made a refuge, he, to whom is God Himself for a fortified place, hath regard to those whom he hath leaped over, and looking down upon them speaketh as though from a lofty tower: for this also hath been said of Him, “A Tower of strength from the face of the enemy:” he giveth heed therefore to them, and saith, “How long do ye lay upon a man?”. By insulting, by hurling reproaches, by laying wait, by persecuting, ye lay upon a man burthens, ye lay upon a man as much as a man can bear: but in order that a man may bear, under him is He that hath made man. If to a man ye look, “slay ye, all of you.” Behold, lay upon, rage, “slay ye, all of you.” “As though a wall bowed down, and as a fence smitten against;” lean against, smite against, as if going to throw down. And where is, “I shall not be moved more”? But wherefore? “I shall not be moved more.” Because Himself is God my Saving One, my taker up, therefore ye men are able to lay burdens upon a man; can ye anywise lay upon God, who protecteth man? (Augustine IN PSALMUM 61 ENARRATIO Sermo ad plebem: Terrena omnia nos transilire oportet. Sub Deo simus, non contra Deum.)¹⁵⁰

The simplistic idea of “images” led to a caricature of man in Condillac. All human faculties and knowledge were supposed to be but transformed sensations, to the effect that a man was a “statue” organized of imaginations. If the premises of the so-called empiricism could have been conceded, the origin of *firm* concepts would be something of a mystery. Concepts would have changed along with the world, and no definite cognition thereof would have been possible, or else the concepts would have been given a priori only and idealism would have been the only alternative for relativism. Things would have only occasioned forming concepts. Occasionalism, as was said above, is a sentiment regarding the relation of the language to the outer world.

Neither stance can be proved, and both idealism and relativism are deadly to science and human existence. Aristotle described the relation in question in precise terms in Physics (VII, c. 3, 247b – 248a). The intellection is *a rest*. Animals participate of it imperfectly only as thus are only relatively free. Images are petrified in the human mind and this is

¹⁵⁰ The Christian Church. Volume viii St. Augustin: Expositions on the Book of Psalms translated, with notes and indices edited by Philip Schaff

formalization we have been speaking of. Mathematics provides *a formalism; the formalism of its own*. The images are petrified in the mind in such a rigid and “uncomfortable” way that for the majority of children mathematics is something of a horror. In fact, it must be so, if natural point of departure is lost sight of. Both matter and form are to be taken into account in the Aristotelian “theory of cognition”. The matter is provided by senses and purified, or, if you like, formalized, on several stages, but abstracted from imaginations ultimately. Science is – generally – about the abstract; not to be sure in the sense (the colloquial one) being “dry”, but in the sense of being *freely applicable* to no matter how many individuals. This makes for the difference man exists in the world: he exist in it freely because of perceiving it in a special way.

4. The problem of the absolute measure of things and the sensual perception

When an object is measured, nothing but statistical values are obtained. No measuring apparatus can measure objects disproportionate to it. Its dimensions (properties) are averaging so that the objects must be statistical (approximate) also. It is not necessary to count all molecules of an instrument to obtain the required observable. E.g. an indicator of an ammeter has an average number of molecules, which perfectly satisfies the requirements of measuring, provided the objects concerned might be classified as macroscopic. The problem arises as for those called microscopic ones.

Naturally, when using an instrument for the first time, i.e. in the way it was originally devised (destined for measuring) the problem of *what* it really is does not exist (is both unimportant and unheeded). Using things implies, as it were, forgetting about what they might be apart from being just used (their usefulness seems to be more important than their whatness). We can measure the temperature without knowing the nature of heat; and we can measure it *effectively just because not being interested in its nature*. It might sound preposterous to demand and count the energy of each particular molecule and to sum them up subsequently. Still, objectively speaking, i.e. taking into account of what energy really is, the approach might have seemed realistic, which is not to say practical, as those two concepts contradict each other in this case.

However, it might be supposed that counting of the constituents of material things is theoretically possible for a mind more perfect than the human one. The stress might be put just on “more”, because the idea of unachievable horizon appeared for some e.g. for Lessing more alluring than the concept of the definite end. John Duns Scotus tried to define the end nonetheless. The absolute horizon grasped in his philosophical terms was called *ens infinitum*. Still, what is important here (and pointed out by Gilson), no neat border between the human intellect and the divine one showed up. Thus, the essence of the Supreme Being was *defined* in terms of “how much”; i.e. the quantitative ones, albeit the conclusions that was about to follow in the modernity were not anticipated and quite undesirable besides (for the

theologian). The theory of the univocity of being was about to take on quite an expectable twist.

The problem is not whether God knows e.g. the number of sand grains on the bottom of a sea. It is not necessary to espouse the theory of the univocity of being for believing in the omniscience of God. It is about describing the very omniscience *anthropomorphically*, i.e. imagining that God counts the grains one by one just as people do. Using quantitative terms in this context implies the idea of continuous accumulation of knowledge. Moreover, the very idea of the (positive) existence of this absolute horizon happened, in the centuries to come, to be disposed of and replaced by the idea of continuous accumulation of cognitive data.

In this context, the problem of the supreme science appears to be the problem of the so called ontology; i.e. the science of what “is possible to exist” (Ch. Wolff: *quod possibile est ens est*). Ontology bears a certain resemblance to the Aristotelian metaphysics, but differs therefrom nevertheless, because, according to Aristotle, science considers the necessary only. According to Thomas, “in science not just any kind of knowledge is sought, but the certainty thereof”.¹⁵¹ The statement might be understood: (1) subjectively, and the certitude might have a plain *physical meaning* of the *rest* in the object contemplated; or (2) objectively: as advancing along discrete stages of necessity to be found in nature (the “scientific facts” of Second Analytics) and reaching the Absolutely Necessary ultimately (the Third Thomasian Way). Needless to say, the certainty in question is far from being just psychological; the latter is bound to explode sooner or later. There is a germ of decay in it, whereas the contemplation, albeit possibly interrupted, might be so *from without only*. There is nothing to contradict it; no rational objection can be raised against it, whereas an emotional certitude can be opposed by any other. It is, nevertheless, all the more deplorable that the rational certitude can be *tried* and opposed *out of irrational* (emotional) reasons too. Pragmatically speaking, the opposition is denounced as irrational, as it were, all by itself then. Nonetheless, Hegel appreciated “dialectical” opposing of statements, believing, at the same time, in the existence of what positively resulted from them (a certitude of the Absolute Knowledge of his). In postmodernism, no such positive knowledge was granted, because the idea of the end of the history exploded.

Each science, according to Aristotle, utters necessary statements. They are, however, stringent at the expense of dropping all that is not directly included in a particular aspect of being concerned in that science. The aspect might be called a level of the perfection of being also. Beyond this aspect, all statements become illegible, mushy or downright senseless. The obvious problem is that of the supreme science; i.e. defined as not particular (metaphysics is a universal science). Its being so equaled for some to its regarding just the non-necessary. The so called ontology tackled the mere possibility of being. The problem of ontology transformed in modernity (due to Kant) into the problem of the absolute measuring of things. The Transcendent was replaced by the transcendental; the infinite horizon of cognition was humanized and a weak deity of Immanentism called into a precarious existence. No necessary

¹⁵¹ In *Physic.*, lib. 1 l. 1 n. 7. [...] quia in scientiis non quaeritur qualiscumque cognitio, sed cognitionis certitudo.

judgment about the existence of the Supreme Being was accepted so that no Supreme Judge of the universe was believed to exist. Judgments are about relations, but the relation of the creature to the Creator is that of what participates (deficiently) in/of being to Being Itself. That a participation in God's life might be possible for a creature, all non-being (sins judged adequately) must be removed. Still, the advocates of the "meek deity" do not believe in such a lofty calling of man.

Christian Wolff was the last traditional advocate of the Scotian ontology; a hybrid of theology and metaphysics. The "Christian" character of this knowledge might appear somewhat equivocal, because Immanuel Kant disavowed its scientific value just for being *this* – not observing the requirements of the *ordinary* science. The Wolffian supreme science was relegated by him into the sphere of ideal thinking and metaphysics shared the lot of its "poor relative". According to Mieczysław Gogacz, the differentiating between theology and philosophy is a cornerstone of Thomism and of philosophy in general.

Despite being the supreme science, metaphysics envisages a certain aspect of the real world too. The aspect expressed in its subject matter is the general tendency towards existence. The problem was already addressed in CHAPTER IV. 5. in another context.

The Aristotelian claim that science regards the necessary only was rejected as soon as science had become to be regarded in the perspective of the infinite knowledge (in Kant). Kant admitted as reasonable (possible) the determinism of nature. In fact, it was a natural counterpart of the absolute measuring of things.

In the book II of "Physics", Aristotle argues *as a philosopher* against the determinism of nature. John Duns Scotus, out of the reasons *deemed theological* claims that the order of the possibly of being issues forth, out of necessity, from the divine intellect. Apparently, it was possible, so to say, to snatch something from the absolute knowledge (to have a glimpse into it), even if a comprehension was impossible. A way was paved for intuitionism, albeit Scotus tried to *demonstrate* the existence of God in his "Treaty on the First Principle". The word of intuition seems to be at the proper place nonetheless, as at the crucial point of the reasoning a fallacia consequentiae was committed (3. 19.). Moreover, Scotus accepts the Anselmian ontological proof of the existence of God (4. 65.). It seems that Scotus deem them both *equally* convincing. According to Thomas, the line of the argument of the ontological proof does not meet the requirements of science. Kant too deemed the Anselmian reasoning flawed, but the problem is that he saw no other reasoning possible. This distrust of reason is – paradoxically – characteristic of both rationalists and those who felt compelled to admit some limits of "reason". The author of the medieval Theoremata is outspoken about non-possibility of the *stringent* demonstration of the existence of God, and the majority of historians ascribe the work to Scotus. It was Avicenna already who claimed that no demonstration of the existence of God is possible, but signs of His existence intuited only. Avicenna's *mavjud* (being) is an archetype of Wolff's subject matter of ontology.

The paradigm of the supreme science has affected that of science as such. For it was believed that besides the actual state of knowledge (and the "contingency" or "probability" of the statements) a certain absolute horizon was to be expected "in the future". Still, *the future* was not to be understood just as a definite point of time. Loyal to its "theological" heritage, ontology envisaged the future in eschatological terms and the messianism of science was implied. The modern idolatry (the cult of science) appeared.

If quantum mechanics faced the uncertainty, it could be expected (“in the future”) nonetheless that the uncertainty would yield to some *more* perfect guise of knowledge. The hidden variables (the actually not measured) would rescue the determinism of nature. It was hoped that the absolute “seeing” (Berkeley) or measuring reserved for the superior would justify the validity of scientific statements. The existence of the superior is desperately needed. Thus, if Augustine claimed: *solo Deo fruendum* (Everything but God is to be used; God is the end and the bliss of life), the modern thinkers would claim that the “idea of God” must be profitable, useful or something of the sort, to the effect of *using* it, as if it had been said: *Deus est solum utendus* – God is only needed (but not real).

Science itself proved to be resilient to this romantic ideal (and must prove to be, so as to be what it really is). Quantum mechanics falsified the possibility of “absolute seeing”. This, however, does not amount to that God “throws the dice” (It was Einstein who abhorred such a possibility). The existence and the facts too are not to be described in the terms of “throw-ness” at all: they both are *relatively* necessary, which accounts for the *absolute* necessity of the statements concerning the facts (neither existence nor facts are contingent, casual or alienated from the essential order of things). Nor, consequently, should the liberation (from the “throw-ness”) be expected of science; of the “weak god” of rationalists. Their “god” was expected to be compassionate for the perplexities of reason (and created by it). For those not entangled in them, “he” would be useless. All this necessitates clarifying the relation of means to the end. Could God be tried to be used; or, conversely, man should serve Him? As for Christians, the answer seems to be plain. As for non-believers, it is at least to be required that they act according to the good will, which is to say: according to the naturally knowable order of things. Violating this order amounts to injuring the most vulnerable, which is not only morally bad, but ignominious too. No one’s life (existence) could be deemed casual, albeit the life of the weakest seems to be most susceptible indeed.

Man cannot expect God to work for him/her unless the end of the activity absolutely transcends his/her natural possibilities. Obviously this is not the case with science. Humans are responsible for uttering the scientific statements (and all statements for that matter too). We-humans choose but one aspect of the world and advance it consequently so as to obtain the necessary statements. On the other side, God chooses one variant out of all possibilities of being and all that follows does so out of necessity, because it is impossible for a being not to intend being as such. It is in accordance with the common sense; being as such is good, desirable; life is to be cherished and fostered. The absolute necessity of scientific statements is founded upon the conditional necessity of nature.

Existence or being – the subject matter of metaphysics, has nothing “mystical” or “mysterious” in itself. Using those terms might seem, to be sure, understandable, since individuals are not *directly* knowable indeed. A person might appear something of an abyss to the eyes of a *casual* observer. However, it is to be neatly distinguished between an existence proper to an individual and the tendency to being which is no less universal than all other objects of the intellect. Perhaps it is just as well that individuals are not directly knowable. For should they be so, the possibly of manipulating them would arise. The reflection that enables to understand an individual (the ethical reflection in particular) requires a certain effort, and the studiousness might be a token of the moral uprightness. According to the scholastic definition, life is the most perfect guise of existence (*vivere est viventibus esse*). On the other

hand, the life activity (the other meaning of the word in question) aims at preserving the individual existence. Now, the subject matter of metaphysics is in between them both. A thing does not intend being in the sense of creating itself, but exhibits a natural tendency towards *accepting being*. In this sense, metaphysics is one and only “philosophy of life” as all the others are but some guises of utilitarianism and prone to manipulating individuals. The universal tension toward being is the subject matter of metaphysics. There is certain proportion (relation) of natures to their existence. Metaphysics “measures” this relation departing from the observable phenomena (things existing in multiple ways).

As has been said, it is about the relation of means to an end. It is about measuring life activities and facts in this manner. Measuring in the ordinary sense of the word always poses a risk of manipulating people. Once the Ultimate End (and Measure, as Plato has it) has been ignored (the possibility of proving its existence precluded a priori), all things appear to be contingent, casual and bereft of their proper nature.

John Duns Scotus did not anticipate the possibility of substantiating the absolute knowledge with measuring. Still, the paradigm of science elaborated by him left the possibility open. As has been said, it is about regarding cognition in terms of measuring. In other words: it is about the relation of the parts to the totality. Is the latter to be known only after knowing the former? The problem appeared distinctly when *the nature* of the elementary constituents of the universe was faced. They were supposedly totalities of their own, and, which is particularly important, they “summed up” so as to form other (secondary) totalities. Feynman claims that man is such a sum of particles, but something more nonetheless. Still, the problem is what man *really* is. Apparently, a scientist is something more than a student. But so as to be students, scientists and whatever else, people must have a definite nature first which supports their being such and such. The problem in question regards this what-ness of man. Modern science at least implied an answer: man is made up of *entangled parts*, which is to say: the parts do not exist really apart from the totality of the human nature.

As for the objects called macroscopic the very nature of measuring instruments decides about what can be measured and *the way it can be*. It is practically impossible to measure the diameter of the sun with a ruler; it is altogether impossible to measure the diameter of a bacterium therewith. But it is far cry from seeing *distinctly enough* the fact that measuring as such is of restricted value only. Yet, the fact was spotted. It was observed, which is to say, the measuring as such (its nature) was tried to be reflected upon from a certain new point of view, which is, obviously enough, not measuring itself. Measuring cannot be measured, but can be reflected upon nonetheless, which was attempted some hundred years ago.

Thus, measuring was, at least indirectly, acknowledged to be different from seeing. Moreover, it must be assumed that seeing (and the sensual perception in general) precedes measuring. This adds up to undermining the absolute value of measuring. Some objects are *disproportionate* not only to *dimensions* of the apparatuses used for measuring but to their *nature* too.

No matter whether the theory of evolution is true or not, it is certain that at a certain point of the history man, after having been bereft of all measuring instruments, invented them. Stanley Kubrick pictured the moment: a man picked up a bone and threw it up; the bone was an archetype of all no matter how sophisticated instruments. Still, the question is *why* and

how he did it. Time is not relevant here: the same problem of using instruments (“inventing” them in a sense) is faced by a child. He/she learns to use artificial objects, but his/her personal existence is not made “anonymous” and “constructed” then; the meaning of artificial objects is interiorized in the manner proper to, and on the conditions of, an individual. Thus, a child *discovers* the outer world and can be no less inventive than adults; in fact he/she is always more than this. Humans as such are, or at least should try to be, just “beginners”.

The nature of the aforementioned “why” and “how” is not readily knowable. The majority of people assume that senses measure the world. Scientism modeled modern thinking persuasively enough to abandon such like “naïve” questions. Nevertheless, the following questions *must* be posed:

- 1) Do animals measure the world, as they are endowed with the senses similar to the human ones? Do they accomplish scientific thinking in a primitive form?

A development, or at least the possibility thereof, seems to be the essential feature of science. According to Hegel, the animal world has no history and cannot have it. It is not about the validity of the theory of evolution. Hegel simply observed (and was right there) that different species are “conservative” in the way humans are not. Hegel contrasted the human existence with that guided by, and thus restricted to, instincts proper to animals. An animal accumulates experience up to a certain point only; humans can do the same, at least potentially, *ad infinitum*. The specific boundaries are non-transgressible for specific beings. Still, the problem was tried to be avoided by assuming that the specific was just irrelevant, and the continuity and transgression of borders characterized the essence of nature (an evolving monolith). In other words: the same (or at least similar) continuity as that connected with human progress, was to be found in nature.

Thus, it remains to prove that Hegel saw just one side of the problem, and human existence is, albeit being different, in some respect similar to that animal nonetheless. In other words: the development is just one side of human existence.

Falling prey of mathematicism, Hegel understood man as “measuring animal”, and the accumulation of the information as essential to, and definitive of, man. Hegel tried to rescue the objective character of good (not to be found in measuring anyhow) by introducing the idea of “good infinity”. However, the notion seems to be oxymoronic.

The *aspect* of the theory of evolution addressed here might be summarized in the statement that the accumulation of sense data led monotonically to the perfection of knowledge, and the cognition became more and more “intellectual” when approaching the mathematical ideatum. The sense data would accumulate and, at a certain point of the history, the so called “consciousness” appeared. Still, the preceding cognition would be just a material for the subsequent one, as illustrated by Condillac.

The idea of nature evolving monotonically might appear suggestive and satisfy the need for imaginative thinking. However, even assuming the unity of nature and the intellectual in it in some primitive guise, a serious problem arises, connected with what human intellectuality really (specifically) is. Human intellect is *active*, whereas nature (albeit built rationally) only *implements* the rational plan instilled in it from without (human artifacts are, analogically, “superadded” to the crude nature). The “primitive” to be found in nature is

not a proto-science; for albeit, according to Aristotle, “God and nature does nothing in vain”; nature cannot reflect upon its finality, as it is normally required in science.

Looking back at the history of civilization we see not only continuity but discontinuity also. The history happened to be interrupted by the barriers of language. Some languages are (probably) irretrievably lost and the civilizations they appeared in might be but superficially known. If Acadians had not known the language of Sumerians they would have remained as barbarian as all those beyond the direct influence of the language. The very (Greek) word of barbarian is an onomatopoeia expressing being inarticulate. Now, even if *Homo sapiens* could have been denied the status of being an immutable species, the fact of the immutable existence of, so to say, *Homo loquens* is undeniable. The communication amongst humans is altogether impossible without accepting some constant (immutable) meaning of words and dismissing the other ones as totally irrelevant and senseless. It is a *discrimination*, no doubt, but humans cannot live without it. The only problem is *what* they discriminate. For a flat nose or black skin does not seem sufficient for it. Some statements (and the actions they are supposed to justify) are to be discriminated for the sake of human good. The senseless is to be discriminated from the rational so as to *preserve* and *multiply* the valuable. Both terms characterize human existence and nature: preservation (and *constructive* discrimination) and creativity. Most probably, women are rather “conservatives” by nature, whereas men are rather creative. However, the both features of human intellectuality are equally important and are complementary. The history of e.g. Greek mentioned above (CHAPTER V.1.) is marked by the same discontinuity. Human Logos is a constant; the development of the civilization is not possible without a nature that supports (sustains) it.

It goes without saying that different languages exist on the earth and discriminative of the others. Joseph Conrad wrote about a man who spoke five languages at the same time (mingled them). It is hardly possible that anybody could understand him properly. Similarly, a child learns a language (the spoken one or that of a science) and the one already known is an instrument for learning the others. Without different stages and different grades of knowledge and discriminating the irrelevant humans are unable to tell e.g. a tree from a man, which is to say: they are bound to treat a man as a thing.

Within the borders of a language only the information can be accumulated monotonically. (The language of science in the sense proposed by Second Analytics is more than just a set of statements, but it is another question). Now, it was believed that one universal language could exist; e.g. the language of the set theory that was supposed by some to underpin mathematics. And, as its values vary monotonically, the same might have been supposed as to the human rationality. Children are forced to learn the set theory, but do not seem to profit from it when learning mathematics. Moreover, no mathematician can communicate his/her thoughts without using a *natural* language. The existence of the universal language has proved to be bogus. Nor can metaphysics (the supreme science) claim the right to possessing such a language. True, Gilson tried to define man as animal metaphysicum. However, it is hardly believable that a child can learn the language of metaphysics. Concrete things are named first, albeit they are really ordered due to the first principle tackled thematically in metaphysics – the non-contradiction principle. Moreover, it seems implausible that an adult can use this language so as to replace the mother one with it.

To sum up: albeit man is really different to animals in that he/she can accumulate knowledge, he/she can so within definite borders only. And the borders are just similar to different animal matrices of knowledge (proper to particular species). Animals communicate with each other with a language *bearing a certain resemblance* to the human one. They communicate, however, within a species to the extent only the animal instinct permits. There is a similarity in it, and the rational in nature mentioned above. Yet, animals participate only of the language in the human sense of the word. They cannot create it; whereas humans can.

Evolution is *a fact*; but it is not *factuality*. A fact takes place when a continuity of motion is marked by the starting point and the end. The problem was addressed above (CHAPTER IV. 3.).

An animal is able to amass the sense data up to a certain point only. For all we know, some information really important to men is completely uninteresting for e.g. a dog. Moreover, the very canine existence depends upon discerning the (subjectively) relevant and irrelevant. “Subjectively”, i.e., in relation to a definite subject i.e. a species. That a dog be interested in what all others before have been not, it must have become something else, which is to say: to cease to exist first. Nature cannot aim at autodestructing, and the assumption it could is another guise of anthropomorphism. Autodestructing seem to be proper to man. Freud the evolutionist amended his optimistic idea of evolution with accepting the fact from bitter personal experience.

It seems that subject (considerably more than just subjectivity) must exist first so as to change at all; a subject of a definitive an immutable nature. However, the difficulty was avoided by supposing the existence of a substratum that remained untouched by the “destruction”. The substratum “evolved” approaching closer and closer the mathematical ideatum mentioned above. Moleschott believed in the existence of the evolving matter. But nowadays it seems preposterous to believe that elementary particles (electrons, myons, pions and the like) assume more and more perfect forms. Moreover, even if we had assumed that “matter” did so, the animal matrix of cognition and the sense perception subordinate to it must remain at least relatively constant.

The borders of the animal matrices of cognition must be neat. There is an analogue of them in the human language. For verbs, nouns are obviously definite too; i.e., they might be entries in a dictionary, similarly as species are so in an Encyclopedia. Species are distinguishable because of the perceptible instinctive actions. No *ens infinitum* (infinite being) can absorb the *definite forms of being* all so as to form one universal language.

As has been said, the two notions: viz. that of the infinite progress and the life are organically opposed. Life as such must be *conservative*. The instinct of self-preservation is the first one and sustains the life. Bergson was fully justified in assuming that all definite guises of life had to be opposed to what he called “evolution”. *Élan vital* sweeps away all petrified forms of life. It might be, consequently, compared to a cosmic pollution that leads to the degradation of all forms of life, because Bergson’s optimism as for the development of nature cannot be substantiated. Only the possible continuity of changes was stated, in fact. But the same continuity of changes must be opposed to any forms of life and, consequently, to life itself. Evolution is in fact tantamount to destruction.

As, however, the life is sustained by the sense perception, the continuity must be opposed to sensuality too. So, the accumulation (or degradation) of the information must be

opposed to the sense perception. The accumulation can possibly follow the sense perception only. Consequently, the sense perception cannot amass the sense data in the way e.g. a counting machine can. So, *the senses do not measure the world*.

2) The second difficulty concerns the origin of the measuring instruments. Apparently, the human hand conditions the existence of them all. The very use of the decimal system testifies to the importance of this *natural principle*. For people are endowed with just ten fingers. The binary system, on the contrary, is “more natural” for the artificial, measuring “intelligences”. The human hand would be quite ineffective in producing artifacts, if it had had just two fingers. The natural system of “cognition” of machines, on the other hand, could not have been another than the binary system. Lest a thing slip out of the grasp, the hand must be endowed with what can embrace the thing. The hand must *touch* a thing both in the sense of being in touch literally, and (what is presupposed to it) sensually. The firm grasp on a thing requires its being sensed first. We are normally ascertained as to the reality of a thing just in the moment the fifth, the most necessary (and the least perfect) sense, the sense of touch, is used. And, without being sensed first a thing cannot be produced. So, sensing is different from gauging things about to be produced.

3) If the sensual perception had equaled measuring, it might be supposed that, conversely, the measuring apparatuses can become living someday. Cyborgs would have been humanized. The literary phantasies by Stanisław Lem would come true. But they were apparently a joke.

4) The most salient characteristics of the living (and perceiving) organisms is the ability for reproduction. The stress must be laid on the prefix; for re-production differs greatly from production. The very word of NATURE applies first of all to living organisms, and Aristotle pointed out to its possible etymology. NATUS means BORN. PHYSIS (nature) stems from PHYEIN – to bear. If the most primitive organisms exhibit the ability for reproduction, humans must so too and eminently. The ability must be connected with the *human nature*. We will try to demonstrate that the *rational* nature is concerned.

Human begetting is quite different from producing. Men cannot be produced for all phantasies and dreams of the social engineering. The rational in man works differently in producing and reproducing. The idea of e.g. a car conceived in the mind happens to be substantiated in the material world (which is *some* life activity). As for what is *naturally conceived* (and *begotten*) the rational manifests itself just the other way round. Material objects, if sensed, happen to be understood to be connatural and then desired. A natural (non-artificial) process begins with matter and senses, whereas its consummation comes from the rational and formal. The sensual in man is preceded by some less perfect guises of life and completed by some more perfect too. It is in between the vegetative and the rational. It was the German idealism only which identified unhappily life with sensuality (the notorious Erleben). Husserl the mathematician understood, at the same time, the experience (Erleben) in the same way as Kant had done. But plants live (leben) obviously too (and *bear* some fruits), although they cannot experience (er-leben) anything. The vegetative in man is supportive of some more perfect guises of life: there must be a definite order in them, which defines the human nature. Neither the sensual nor Erleben is definitive of man. The sensual in man must be subordinate to begetting. Fertility much more than sensuality is definitive of man. There is some animal begetting in a human family, but spiritual begetting in it too. For intellectual

values are conceived in the human mind in the way analogous a child is conceived in the maternal womb. Thoughts, if matured, generally speaking, become conceptions. This spiritual begetting is a defective similitude of the perfection of the First Being, Who conceives the Word of His intellect from eternity.

Without the rational component the human begetting must be crippled. Amoebas do not take care of their progeny, and if humans do so, it is because of the intellect that imbues *values, virtues, wisdom* and all what is considered by parents valuable for their progeny. Even more perfect animals exhibit some participation of similitude in *upbringing* the progeny. For e.g. squealers are taught to fly. The upbringing is the integral part of the human begetting and a complement of the sensual in man too. People happen to share their life this way.

It is only natural for man to share what he deems valuable. The fact is salient as for the most wretched ideas deemed valuable just because being unbearable for just *one* individual. Miscarried ideas come to the world this manner. But they might be an excessive reaction for the denial of the right of expressing ideas also (the denial must be called ideologization). The very word of propaganda stems from propagating, and propaganda seems to be an Ersatz of natural propagating. It seems that the more odd an idea (or the more obstinately contradicted), the more nagging the need to exteriorize it. A wretched idea is an evil, and hardly anybody is able to bear evil alone. The wretched ideas are, for being just that, tried to be “shared” with others, and the burden of iniquity believed to be alleviated. But the “arithmetic of nature” is different to the ordinary algebra and measuring. The evil tried to be shared with others (the scandalized) become more and more unbearable.

According to Aristotle, men happen to be dearly attached to the offspring of their minds. The fact might be granted for the ideas matured and contemplated before uttered. However, some ideas happen to be just (literally) miscarried, and the “clashing” of those ideas supposed to be profitable for knowledge. Yet, they are not that much the words of the intellect as rather the progeny of the unbridled imagination. Once they break free from a “nonconformist” mind they blunder unhampered and aimlessly through the history.

However, the right for expressing as such cannot be denied to men. If “it is natural for a man to share what *he* deems valuable, it is a “*she*” who accepts, trusts and believes almost unreservedly. No one is a consummate scoundrel if there is a “*she*” who believes so firmly the opposite that she is willing to share her life with him. Thus, the most natural way of expressing ideas leads through the human family. It is only natural to a woman to try and share the values with her husband, and for a man with his wife. They propagate the values to their progeny and are responsible for it. Neither the right nor the responsibility can be denied to them. No “social enginery” can claim the right, nor can it take the responsibility. The sensual in man (a person) triggers the rational. The “ideas” about to be substantiated in the material world are matured sufficiently in the natural environment of man: the human family.

At the beginnings of the mature period of the Greek philosophy, Socrates occupied himself with a spiritual midwifery (maieutic). As we can read in Plato’s *Apology of Socrates*, he was upbringing his fellow citizens so until they felt sickened therewith. Indeed, upbringing is always demanding and poses a constant challenge to human complacency. However, societies are in urgent need of those uncompromising. At the beginnings of the critical period of the Latin Civilization, the idea of maieutic was resuscitated. Families first, but monk families next became educators of Europe. Monastic living matches the two aforementioned

aspects of human existence: solitude (“monos” means “alone”) and fraternity. Thomas Aquinas was a Dominican monk devoted to the uncompromising pursuit of truth.

The most precious in man is, at the same time (and understandably enough), the most susceptible and most vulnerable. The more precious an object, the more fragile it usually is. The dignity of the human begetting (and sensuality) happens to be mocked; taunted or abused (predominantly in the so called advertisements), or “explained” in a “scientific” (which is to say: ideological) manner. The intellectual in it is tried to be trampled. Conversely, preserving the human dignity requires fostering even the feeblest forms of life. The rational in man is responsible for spotting the least perceptible outlooks of the human life about to appear in the natural world. The word of DIGNITY is at the proper place. The human begetting (the integral one) is a participation of the similitude of the divine one. For in God TO BEGET equals TO SAY (the Word of wisdom).

5) Historically speaking, the conviction that senses are instruments is a continuation of the sentiments harbored by Descartes and La Mettrie. Human body (and the animal too) was allegedly a machine. Still, no one happened to take pains and justify the claim.

6) The idea of the absolute measuring is matched with the idea of the absolute container of things the measuring was supposed to explore. The container must be isotropic one. Now, the discovery of quantum leaps falsified the assumption that space was isotropic. (The existence of the isotropic space was in fact falsified already by Michaelson and Morley and the special theory of relativity). The indicator of an ammeter cannot accomplish a quantum leap even if duly “tiny”, whereas the senses can. That quantum leaps occur in the smell perception, has been demonstrated most recently at the Ulm University in Germany (by Susana Huelga).

The sense organs have a locality, but senses have none. The locality of measuring instruments, on the other hand, cannot be doubted. In the sensual perception, a *transfer* of energy occurs, whereas measuring consists in *consuming* the energy and registering it *indirectly only*. The a-locality of a sense means that two places a sense organ occupies are completely indistinguishable *as belonging to the one sense*. Their place is natural (in the Aristotelian meaning of the word). The hypothesis of the absolute container of things and events, in which senses had to work as “machines”, has been falsified by science itself. The notion of space is secondary to the notion of the natural place. It is “more” abstract than the latter; or, rather obtained by a special (mathematical) kind of abstraction. The place is natural because of the interaction of just two bodies. The abstraction in question consists in replacing TWO with MANY and possibly with UNFINITE. Hence, the idea of the absolute container appeared, and the *natural order* of existence happened to be reversed.

The human body and the senses occupy the natural place. It might be affected by the objects called macroscopic, no doubt; e.g., by X-rays. However, they do not affect the identity of the body, because the rays cannot change the state of energy of the body; which is to say: they *ought to be* used as carefully as not to do this, lest they destroy the body. For the only way to affect the body mechanically consists in destroying it. A body can be destroyed just because ceasing to be identical with the normal human body.

The visible light is an electromagnetic wave, but differs from e.g. X-rays in that it is *proportionate* to the human body. It “penetrates” it in the way different to X-rays do. No

disturbance of the state of energy of the human body occurs, but the representation of the state of the energy of an outer body.

7) It has already been hinted at what is implicitly contained in the notion of measuring. For measuring implies (similarly as using does) the existence of one who (uses and) measures. There is a sequence of events occurring in what is measured. Now, some believed that the analogical sequence occurred in the brain and the process possibly matched the former. The sequence of processes occurs in the machines processing data no doubt, and it was believed that the brain in such a machine too.

Still, all cognition consists in assuming a certain distance towards the objects about to be known. It is impossible to realize the motion of an object when moving along with it (or parallel to it). For a considerable time, people had believed in that the earth is immovable just because moving along with it. Obviously, a spectator cannot be an actor in a game, and vice versa. The two roles exclude each other.

The sequence of events might be observed and the sequence of brain courses believed to be parallel and accompany it. Human thinking might be supposed to be but a sequence of processes. Now, the question arises as for what terminates them. For scientific laws do so, no doubt. Are they, then, accidental to what precedes them naturally, and provisional as the processes might commence anew? What about the mathematical laws? Are the provisional too? Obviously, they terminate the processes from a privileged coign of vantage; the sequence of them is viewed in the definite manner; they are immovable.

However, the mathematical laws are no exception; we must assume that all scientific laws are absolutely a-local and a-temporal. They are absolutely valid, and that is why we can measure things *in relation to them*.

Animals participate something of the similitude. The animal existence is at least relatively stable; there are *laws executed* by them, albeit not reflected upon. Objects can be seen (and measured) just because distanced from who measures them.

8) Two notions: that of facts and that of measuring might be juxtaposed. Edmund Husserl knew that people whom scientists hoped to “produce” could be manipulated (alienated) and deprived of their dignity. There is no need to retrace the entire line of reasoning and the conclusions Husserl came to. Besides, some of them he himself rejected subsequently. What is really important here, is the pivotal role of the sense perception in the program of his *Logische Untersuchungen*. The source perception; the original one was expected to falsify the reductionism espoused by scientists.

The original program of phenomenology was formulated in polemics with scientism. Moreover, albeit possibly inspired by scholasticism (via Brentano) Husserl thought over the problem on his own. The problem was not just historical one. It was the problem of relativism and of the definite foundations of science. As a mathematician, Husserl seized the problem in terms of assimilating philosophy to mathematics. Besides *exakte Wissenschaften* there must be a *strenge Wissenschaft* too.

The opposition exhibited in his *Logische Untersuchungen* towards scientism was as irreconcilable as excessive. Husserl saw no possibility to reconcile with the “people of the facts”. In other words: no facts other than those triumphantly heralded by scientists were spotted. Probably, mathematicism weighted fatally upon the character of the polemics after all. (Mathematical laws are not facts in the modern sense of the word). For some scientific

facts discovered ca 24 years later, when De Broglie formulated his theory of the wave-particle duality, might have been deprived of that idiosyncrasy for the absolute truth Husserl so laboriously tried to regain. In 1924, the possibility opened for substantiating the notion of the sense perception with the scientific data. Husserl did not avail himself of the opportunity; his thread of thinking had advanced too far then and in quite different direction. Now, the potential of a particle is *present* (and a-local) indeed in the way the Husserlian presenting intuition of objects was expected to render the objects.

Braking with the factual, Husserl entangled himself in the vicious circle of idealistic thinking. For the procedure used for bracketing the not directly given was no less artificial than what separated the mind from the directly given. Obviously, science is not an instrument (artifact), but an algorithm accepted in it is an art of thinking nonetheless. The problem of bracketing was the problem of excluding all instruments that stand in between the naked senses and the reality, but the method adopted to might have been vitiated. For the claim “the worse for the facts” is idealistic no doubt. There is the essential difference between reflecting upon the sense perception and trying to create the very possibility thereof by artificial means. For imaginative variations are such a means no doubt.

Be that as it may, Husserl perceived at least the fact (!) that the perception is a-local and a-temporal. Moreover, as a mathematician, he advocated for the validity of the sense perception with no less obstinacy than for the validity of mathematical laws. Obviously, he saw that both had to share the same lot (or a fate if you like), they were doomed by psychologism (of e.g. Theodor Lipps).

Every man accomplishes an “eidetic intuition” (something of the sort) without learning phenomenology first. The only problem consists in realizing that he does it. Husserl himself acknowledged the fact in a sense. For he speaks of the “animal consciousness” (the sensual perception is meant), as if the core of phenomenology were to be found in the animal already.

Despite the development of the phenomenology in the years to come, Husserl proved originally that *the sense perception is different to measuring*.

5. The extent to which the geometrical optics can be applied

Measuring objects seems to be intrinsically connected with the applicability of geometrical optics. Measuring instruments are endowed with the properties that are both delineable and countable: they must be workable, which implies them being known in quantitative terms first. At the same time, that the outlines of the objects measuring and measured might be neat, both the interference and diffraction of light is to be eliminated. Otherwise, they would blur the outlines of the objects. The problem is serious in building e.g. telescopes. The very interference and diffraction can be measured, no doubt, but being measured implies just *fragmenting the natural continuity*. This continuity (and the wave-particle duality eventually too) is known due to the interference and diffraction of light. Several pixels if juxtaposed could imitate the natural continuity, similarly as the sequence of images (snapshots) can

imitate the real motion. Apparently, the natural motion and life too, when pictured and petrified is no longer real; i.e. its perception is different when mediated by artificial means. The image can only occasion recalling the remembered as long as harmonizing with it.

Thus, in geometrical optics, the sense of sight is given the exclusiveness it normally cannot have. According to Aristotle, humans appreciate the sense of sight just because its being able to tell many differences. This, however, is not tantamount to saying that it is the only one; or, which adds up to the same, that the others could be disposed of. In fact, Aristotle points out to that, for an animal, the sense of touch is absolutely indispensable, whereas the sense of sight is not. Some animals are bereft of sight, but are animals nevertheless; which is to say: they spawn the life motion from within and observe the life integrity in their specific manner. Apparently, the shape of an object is not so neatly sensed by touch, although the same object is perceived. Thus, the question arises what the senses have in common anyhow. An object touched exerts a certain pressure on our hand, but the pressure of light wave on the retina of the eye does not seem to be of pivotal importance in seeing.

If being rational equaled being able to depict objects, rational beings would be similar to machines gathering the images, just as cameras do. Consequently, no essential difference would appear between the sense of sight and the imagination; between the imagination and memory; between the intellect and the senses that prepare the material for intellection. The only difference would consist in *how many* images were gathered; whereas the *way* they were so would have been of secondary importance only. The image of an object would be depicted on the retina of the eye and retained in the memory. However, it is unclear how *the retention would be realized*. For some images are prone to slip out of the memory, and people differ greatly as to the extent they remember the sensed, because, apart from being a faculty, the memory is a moral virtue too, and must be brought up. The same *mutatis mutandis* holds true as for the education as such. It consists in setting up a certain relation to the sense data. The intellect must be educated first of all. Both theoretical and practical wisdom provides foundations for (theoretical and practical) activities. But if so, it must be neatly distinguished from the faculties naturally subordinate to it. Animals might be trained (and their character modelled to same extent), but training is not an education. But not even animal can be modeled as readily as e.g. a lump of clay can. The objects of human activity cannot be constructed in the way Kant thought it possible.

There is a proportion between the motion of imagination and the object imagined. A sheer introspection convinces that to recall the image of a person, a certain motion of imagination is required. Natural images are not petrified in the imagination, and the way mathematics grasps them is somehow “unnatural” to man.

The preponderance of the sense of sight would render not-understandable the fact that the children bereft of sight can learn better than those bereft of hearing. Moreover, there is no ground to doubt that images gather in the minds of blind people similarly as in the minds of those not handicapped. The reason is not difficult to retrace: it is just about retaining the images; those yielding to all images *indiscriminately* are unable to pin them down; they are unable to concentrate. Moreover, if uninterruptedly overflowed with images they become eventually dense or callous. The variety (and the exuberance) of images renders them hardly

retainable. Thus, those exposed to e.g. advertisements are reasonably more handicapped than those deprived of the ability of seeing them at all.

The assumption that interference and diffraction did not play any important role in seeing might be explicable (which is not to say: justifiable). Still, it is not so as for the sense of hearing, because the intensity of the sound is not pivotal here. It is a timbre of sound that matters. Moreover, verbal communication is only possible due to telling some timbres from the others. Social nature of man manifests itself here plainly and the importance of hearing for educating, consequently, too. Social order is only possible if people of value are given a hearing (those teaching the others must be so). Orders are not obeyed because uttered with a raised voice, but because being in harmony with the intellectual nature of man.

In music, the interference of sounds is perceptible as beats. For a “pulsating” sound is easily perceptible and helps to tune the musical instruments. As for the very term, the equivocation included in the name in Polish and German is significant. For we speak of *Klangfarbe* (of a sound).¹⁵² “Klingen” means “to resound”, whereas “Farbe” means “color”; this “color” seems to be seen and heard analogically. Thus, not that much *how fiercely* an object engrafts in our imagination seems to matter, but rather the quality of it; the *frequency* of the sound, or the light-wave. For the *Farbe* of them both is just another name of frequency. Frequency, in turn, is proportionate to the energy of an object, according to Einstein’s equation $E=h\nu$. Now, the energy is not *directly measurable*, because measuring requires a certain loss of energy; or to be precise: only the loss of energy is registered as such. The potential energy would be measurable if the potential could have been measured precisely too. Now it is impossible to measure e.g. the voltage directly, because a certain loss of energy is indispensable for an ammeter (and a voltmeter) to work. But apparently, the assumption that colors are seen just because being discolored is senseless; the same holds true as for the timbres.

One image need not be directly referable to just one object. Optical illusions make people believe that e.g. two objects arrayed on the line of sight are one. There is but one way to ascertain as to the unity of the object the sense data stem from. As for seeing the reason is plain. The light beams are coherent *if stemming from just one source*. The situation is quite plain as for e.g. an electric dipole. The problem is more complex as for the objects significantly bigger (and more complex) than dipoles. Nevertheless, the beams emitted are just coherent if the object is as regularly built as e.g. crystals are. The regularity of its structure (its unity) makes the beams coherent. But paradoxically, the interference and diffraction enables to retrace the source of the coherent beams then.

The structure of crystals might *seem* to be regular because imitating the ideal geometrical objects though. However, the geometry of the structure does not seem to be pivotal for their “regularity”. Two objects resilient and stiff enough if clashed produce a clear sound, and the clarity of the sound is directly proportional to how elastic the objects are (not to the geometry of their structure directly). They are elastic as far as electric forces work. Thus, it is rather the propagation and modification of the electromagnetic wave that makes for the possibility of the sense perception as such.

¹⁵² “Barwa dźwięku” in Polish.

Is the most imperfect sense (the sense of touch) any different? As for the one closest to it (the sense of smell) the contrary has been proved most recently. It are not the geometric outlines of molecules that are sensed but their energy. Ethanol differs geometrically but slightly from ethanethiol. Still, the smell differentiates neatly the state of the energy of them both. Some gases are poisonous and the ability to sustain the existence requires telling them from the not poisonous ones. Molecular chlorine (chlorine gas) is a deadly poison. Ionized chlorine is part of the edible salt. Sodium chloride dissolved in water separates into Na^+ and Cl^- ions. “Human sensory taste testing studies have shown that proteolyzed forms of epithelial sodium channel (ENaC) function as the human salt taste receptor.”¹⁵³. “The epithelial sodium channel is a membrane-bound ion channel that is selectively permeable to the ions of sodium (Na^+).”¹⁵⁴

The same must hold as for the sense of touch. The objects *disproportionate* as to their energy can destroy the human body. The senses must anticipate the danger. Human body is structured teleologically, and the sense perception must be responsible for maintaining the structure. David Hume’s claim that images are bleak copies of the vivid impressions is to be understood in this context. All sense data are vivid (are of vital importance), contrary to the geometrical outlines of objects, as delineated e.g. by a child on a sheet of paper. Images do not impart any significant information about the real world. Without the vivid impressions we cannot tell between the objects nocuous (i.e. disproportionate as to their state of the energy to human body), and the profitable (i.e. those that can pump in the energy into our body). Obviously, the geometrical outlines of objects cannot contribute *directly* to the knowledge about the state of the energy of the objects.

Let us consider the problem of how human body is built. Its structure seems to be a derivative of the ability to sustain the existence in the environment of objects *related* to it in a definite way (not just *juxtaposed* to it). For it is up to animal senses, and to the human mind ultimately also, to retrace *the nature* of relations. We naturally avoid the nocuous and pursue the profitable. The fact reworded in the most general terms reads: *the senses retrace the proportion of energies of the objects of the natural environment*. Departing from the elements, every animal structure, no matter how complex, must be monitored by animal senses. The senses do not “create” the animal body, but sustain its existence nonetheless as effectively as the objects of natural environment *are sensed adequately*. The objects happen to be proportionate or disproportionate to animal bodies, but not in the terms of “how much”, but in the terms of their energy, which is nor directly measurable.

Some objects might appear *phenomenally* small (e.g. those discovered some 100 years ago). But objects “ontologically small” are those proportionate to each other as for the state of their energy. On the other hand, the objects which are “big” enough prove to be *not directly relevant* to the sustenance of animal existence; they interact with the body mechanically only and can but infringe its integrity this way.

The teleological structure is that whose being structured is retraceable up to its minute parts. The senses do retrace this.

¹⁵³ <https://en.wikipedia.org/wiki/Salt>

¹⁵⁴ [Epithelial sodium channel - Wikipedia](#)

Thus, the question in what the sense of sight is more “precious” (as Aristotle has it) than the other senses must be rethought anew. There is no essential difference amongst senses as such. There are but different degrees of clarity of the sensed, and the objects seen are sensed most perfectly just because being most distanced from the sight. All senses, however, register the disturbance of the electromagnetic wave. The sight does it more precisely, because the electromagnetic wave does not undergo a considerable loss of energy (dispersion) in the air, and all the less in the space that separates us from the distant celestial bodies. As for hearing the speed of the sound is defined by the constants analogical to those defining the speed of light (the “springiness” and “inertia” of the void: ϵ_0 ; μ_0 , define the speed of light). But the springiness and inertia of other media are not the properties of the electromagnetic wave alone. We hear objects due to the adiabatic change, in which the springiness of the air makes it similar to solid bodies and similar to the regularity of their structure too. However, the propagation of the sound wave is cascaded one. It occurs on stages: wave–particle–wave–particle, and this accounts for its being “less spiritual and perfect” (as Thomas has it) than light. Be that as it may, even the least perfect senses register the disturbance of the electromagnetic wave.

For all their being different as to the “immateriality and spirituality”; i.e. as to how bodies interact in the propagation of the electromagnetic wave (the degree of its dispersion), all senses are affected by it after its being “diffused” (as Thomas has it) in the environment that separates an object from the mind. The sight is “most spiritual”, because the dispersion in the void is none (the electromagnetic wave does not stumble upon mass-bodies). In other words: there is a common denominator of what all (“proper”) senses can grasp; for they all are “moved” in some way by objects. Still, the very fact of them being moved so (receptive of the propagation of the electromagnetic wave) and not affected by disconnected sources might well go unnoticed until the common sense “judges” the sense data. When sleeping we can hear sounds (e.g. of a thunderstorm), but we cannot hear e.g. people speaking, because we do not address the perception to definite objects. Thomas says that the common sense tells the difference between e.g. a color and a smell, which is to say: it perceives the proportion of the energy translated (and dispersed) via particular channels of perception.

The common sense was given a special appreciation (in Reid) after the validity of the sense perception (the five proper senses) had been questioned by idealists. Descartes blamed the senses for presenting objects inadequately. Paradoxically, the most perfect sense – the sense of sight was blamed for optic illusions. On the other hand, the value of the sense of touch might be appreciated as soon as the object is grasped (literally speaking), because the illusion wanes. It seems impossible to falsify the testimony of the sense data then. It does not seem, however, that Reid understood the problem of the common sense in the way Thomas did. The gist of the argument in Thomas consists in that if a particular channel of the sense perception fails, people might ascertain as to the reality of the sensed objects via other senses anyhow. No such possibility was granted by Kant, but the order and unity of the sensed objects was, according to him, created by the so-called consciousness. If the opponents of idealism underscored the value of the common sense, Kant claimed that no idealist could be accused of lacking of what people normally were endowed with. The problem was, according to Kant, of how the common sense was possibly used in science. Objects were, according to him, bereft of stability and unity until they were subsumed under the schemes of pure

categories. The senses provided but a material for cognition, and all sense data “were dispersed” before being unified by consciousness. Consequently, the relation of the consciousness to the sense data became unclear. Thomas, to the contrary, demonstrates that the common sense grasps the proportion of the energies transported via different channels of perception, which is tantamount to that it grasps motion as such, i.e. an object moved. This difference is far from being a trifle for science.

The problem might be illustrated by an example. Albeit the hinted solution is not likely to satisfy the taste for the ideal, the very problem appears therein distinctly enough. Imagine you meet a person (see it); hear her/his voice and squeeze her/his hand. Is there any definitive reason to believe that all channels of perception inform (parallel) about one and the same object? Or else, is the common sense to be taken colloquially, and the question to be dismissed as bereft of a stringency required in science? An idealist would answer with “no” to the former, and with “yes” to the latter question. Still, even idealists communicate in the physical world in the way ordinary people do. No idealist can live in the world in which persons met are “constructed” or “created” by him/her. No scientist can collaborate with others unless he/she admits the factual existence (and unity) of those who contribute to the common good called science.

According to Kant, the sense data are unified at several stages in the so called consciousness. The advocates of the common sense deem that stance absurd and credit this sense (or another inner sense) with the power to refute idealism. The unity of an object was supposedly sensed directly.

According to what Thomas says, both stances are wrong. The senses can tell differences, and the common sense can especially so, but it is far cry from grasping directly the unity of an object sensed. Some advocates of realism believed that the other inner senses (than the common sense) do the job. Still, hardly anybody was willing to concede that the active intellect grasped the unity, because that would smack of idealism.

According to Thomas, the intellect does grasp the unity, but indirectly only, i.e. by the way of reflection on the abstracted sense data. For the metaphysical notion of unity is *secondary* to the notion of being divisible: *being one is defined as being just indivisible*. Consequently, an object is known to be one as soon as made out indivisible.¹⁵⁵ Naturally,

¹⁵⁵ Summa Theologiae, I q. 11 a. 2 ad 4 Ad quartum dicendum quod unum opponitur privative multis, inquantum in ratione multorum est quod sint divisa. Unde oportet quod divisio sit prius unitate, non simpliciter, sed secundum rationem nostrae apprehensionis. Apprehendimus enim simplicia per composita, unde definimus punctum, cuius pars non est, vel principium lineae. Sed multitudo, etiam secundum rationem, consequenter se habet ad unum, quia divisa non intelligimus habere rationem multitudinis, nisi per hoc quod utrique divisorum attribuimus unitatem. Unde unum ponitur in definitione multitudinis, non autem multitudo in definitione unius. Sed divisio cadit in intellectu ex ipsa negatione entis. Ita quod primo cadit in intellectu ens; secundo, quod hoc ens non est illud ens, et sic secundo apprehendimus divisionem; tertio, unum; quarto, multitudinem.

Reply to Objection 4. “One” is opposed to “many” privatively, inasmuch as the idea of “many” involves division. Hence division must be prior to unity, not absolutely in itself, but according to our way of apprehension. For we apprehend simple things by compound things; and hence we define a point to be, “what has no part,” or “the beginning of a line.” “Multitude” also, in idea, follows on

making it out (its being so) does not tantamount to “creating” its unity. The idealist stance need not follow.

Contrary to what (modern forms of) the philosophy of the common sense claim, no “sensual evidence” of the real can exist (the term seems to be oxymoronic). The existence of the reality as *a whole* can be neither postulated nor supposed. Nor is any intuition thereof available. The common sense is but a negative criterion of statements (the testimony of senses should not be contradicted). It cannot be a fundament of science, because what possibly rested on that basis would have been by an accessory of that *substantial* part of knowledge.

Descartes was right in assuming that sense *might* inform inadequately, but precipitated himself into a statement that they *must* so, which is by no means true. The adequate information about the objects posed before our eyes is gained in the moment an intellectual reflection on the sense data (the abstraction) is accomplished. The only evidence possible is that of the first intellectual principle: the non-contradiction principle. It is a habitual knowledge all people have, and that is why the testimony of senses is not to be contradicted. The human agent intellect possesses this knowledge naturally. Due to this, it illuminates the imagined, and the images *illuminated* this way, *move* the potential intellect – the proper subject of science. Sheer movement of imagination cannot beget science. The begotten by the abstraction (a vital activity) *rests* in the intellect and the rest might be called the scientific certitude also. Business of imagination (and unnatural inertia too) hampers the intellection.

That bustling of imagination might be assessed as a deplorable signum temporis. Peace of mind (ὁταράξια) is not a “good” much appreciated contemporarily. However, the peace of mind is the only basis for knowledge. We would like to understand the *changing* world, but the understanding is impossible without occupying an *immovable* (unchanging) coign of vantage. The understanding might be called a measuring of motion in an analogical sense of the word.

Thus, in nature, two phenomena are to be enhanced: the divisibility of motion (measured this way or the other) and the indivisibility thereof, normally associated with some constants of nature. The intellect spots the constants, and that is why it can measure the motion. Obviously, the ways it can do this might be different. One (and connected with the mathematical unity) is accomplished by the mathematical analysis. The sensed continuum might be divided into infinitesimal parts dx and integrated subsequently. The problem arose as for those “parts” that cannot be infinitesimally divisible. For it has been commonly granted that elements are quantized. So, in the very heart of nature, the discontinuity showed up. Still,

“one”; because we do not understand divided things to convey the idea of multitude except by the fact that we attribute unity to every part. Hence “one” is placed in the definition of “multitude”; but “multitude” is not placed in the definition of “one.” But division comes to be understood from the very negation of being: so what first comes to mind is being; secondly, that this being is not that being, and thus we apprehend division as a consequence; thirdly, comes the notion of one; fourthly, the notion of multitude. *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province.

<http://www.newadvent.org/summa/>

the due explanation was not given to the phenomenon. According to Aristotle, the discontinuity is not restricted to elements only; it is the general feature of all substances, whose natural borders are more stable than those delineated e.g. on a sheet of paper. On the other hand, they “are written down” (if you like) in the intellect only after being abstracted from the sense data. The fact that all sources of the sense perception are “coherent” is made visible only after the abstraction is accomplished. The intellect does not unify the sense data in the way Kant imagined. It *unveils* the natural unity of an object, which is to say: discovers the fact that e.g. the object mentioned above is one and the same person.

Animals can do this *to some extent only*. Naturally, a dog tells between a hand and the food produced on it. It is able to discern the integrity of an object *important to it*, to a degree. Dogs can be even “compassionate” i.e. sensitive to the emotional disintegration of the persons they are believed to “love”. However, they are only so to the extent *a person is subjectively relevant* to them. They are able to perceive the sorrow, but are unable to retrace its source. All the less can they understand the spiritual suffering. The very core of a thing is legible to the human intellect only – *intellectus intima rei legit*, according to Thomas.

It is up to the intellect only to discover and disclose the real source of the sense data. The data are shown to be mutually related in a definite way. It is up to the intellect to disclose the *suppositum of humanity*; for humanity manifests itself in various appearances and on manifold ways. None of the appearances can be discarded a priori. Only the intellect can set down the fact that

Various sense data (phenomena) stem from the same definite source – the substance.

Searching for a source is essential for the human existence. Its drama consists in that humans happen to blunder in a blind alley on the search with no prospect of being delivered therefrom. Still, the human desire to be delivered (to be delivered *from the appearances* no matter how obtrusive how and fiercely clung to), is ineradicable. Humans cannot live the life of senses and phenomena; of “the animal innocence” and of the “authenticity of feelings”; for *it is contrary to the human nature*. Humans happen to turn to casual objectives (not identified appropriately) and cling to them just as desperately as casually they are chosen. They happen to be dearly attached to casual objectives, because there are many casual words, and many apparent goods. Now, the intellect only can retrace the source of the human activity: the closer one (the human person), or the ultimate – the First Source of motion of the universe.

Still, there is a difference between them both. The simple motion of inanimate objects is analyzed *directly* in the First Thomasian Way. The vivid supposita (*primomota*), on the other hand, are exempted from the argumentation of the Kinetic Proof. The affirmation of a human person need not lead directly to the affirmation of the First Cause. Ethics (and personalism too) cannot become metaphysics. For a time, a person can live honestly even if cut off the actual Source of life, because human existence is relatively autonomous really. In fact, the advocates of “the radical human responsibility” happened to be atheists and “humanists” at the same time. Tacitly or openly, the “humanists” assumed that both aforementioned principles could not coexist in the real world. According to Sartre “if God

exists, man is nothing”¹⁵⁶. A challenge for the classical philosophy was posed as soon as the only source of good was identified with the human will. “Nothing can possibly be conceived in the world, or even out of it, which can be called good, without qualification, except a good will”¹⁵⁷. To Kant’s mind, the autonomy of the human will could not be reconciled with the *Transcendent* Source of good. Only did a *transcendental* horizon exist. Between the finite and the infinite (between a person and God), there was the difference of “how much”, and no outlooks of the reconciliation of them both could exist. The two activities were understood in terms of extent, and both were tried to be measured just as the additive structures are. The God of deists created magnanimously the “free room” for the human will. Kant tried to measure the extent of good, although good cannot be measured, but analyzed only. We tell between the apparent good and genuine one if reflecting upon the source of them both; i.e. if reflecting upon the real source of good. The essential of it is known as soon as philosophical analysis of facts is accomplished. For the analysis is not measuring. The analysis distinguishes the relatively first (the human person), and the absolutely first – the First Source of the cosmic motion.

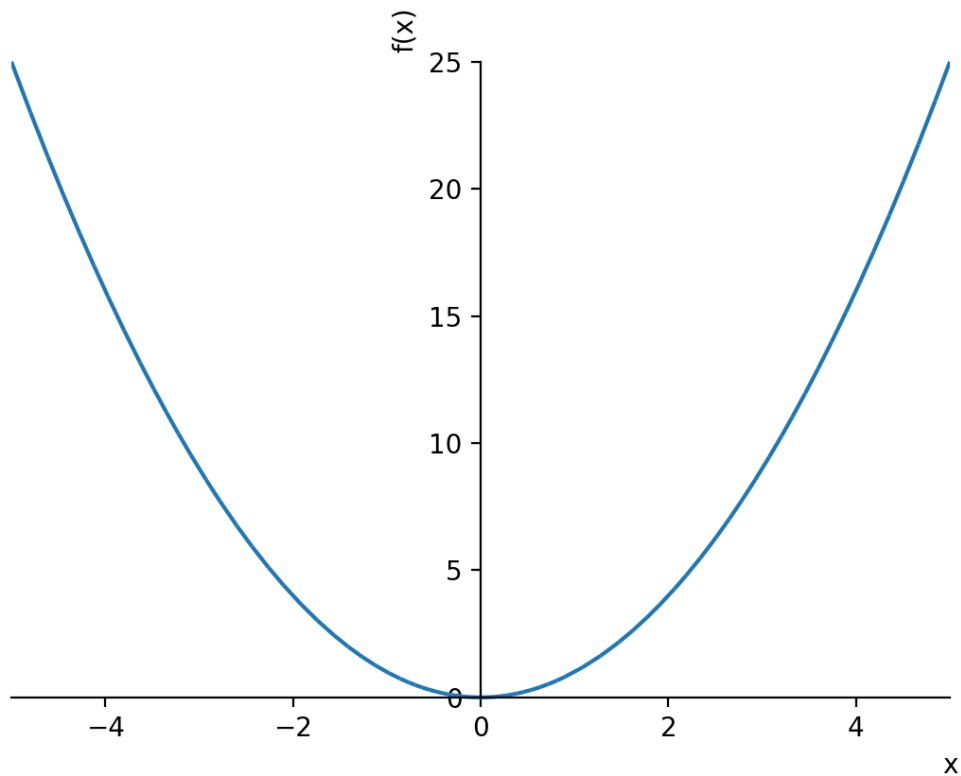
6. The superposition of wave courses and the borders of the experiment

The equation of motion such as $T=mv^2/2$ might be illustrated by the following graph:¹⁵⁸

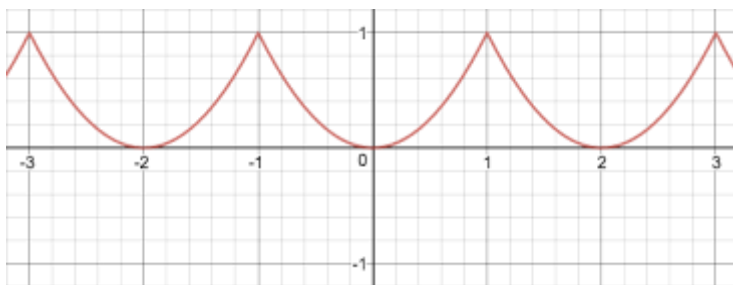
¹⁵⁶ <https://www.the-philosophy.com/jean-paul-sartre-quotes>

¹⁵⁷ Immanuel Kant, [Fundamental Principles of the Metaphysic of Morals](#), I, trans. T. K. Abbott

¹⁵⁸ <https://docs.sympy.org/latest/modules/plotting-4.hires.png>



It is clear that the relation of the variables concerned is measurable, and the vector ν (assuming minus or plus value) corresponds to the change presented here. Its being measurable and checkable is tantamount to observing definite borders possibly marked on the curve presented above. The borders of the experiment correspond to E_{max} , and to the border of values of dx/dt . In other words: the experiment is carried out within definite borders of time and space. Moreover, it is reproducible ad infinitum, which might be illustrated thus:¹⁵⁹



The borders of reproducibility, in turn, might be accepted as $\dots -n\pi; (-n+1)\pi; (-n+2)\pi \dots -\pi, \pi; 2\pi \dots n\pi$ if $n \rightarrow \infty$.

Thus, we have a series of

$$Y = \pi^a/b - c (\cos x/1 - \cos 2x/2^2 - \cos 3x/3^2 - \dots);$$

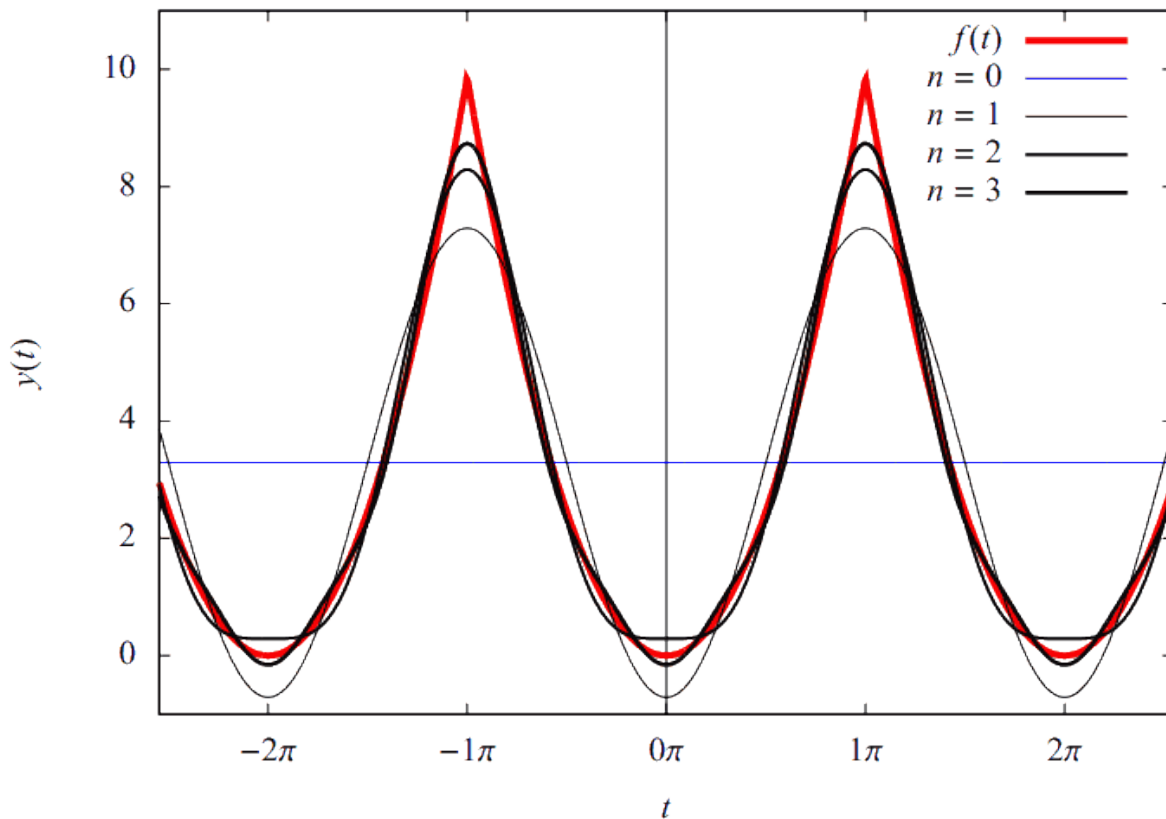
¹⁵⁹ <https://i.stack.imgur.com/9mbLg.png>

which is the equation of the period course. Due to the Fourier analysis, the equation might be presented in trigonometry terms as:

$$A(x) = A_0 + a_1 \cos \omega x + a_2 \cos 2\omega x + \dots a_n \cos n \omega x + b_1 \sin \omega x + b_2 \sin 2 \omega x + \dots + b_n \sin n \omega x, (11);$$

which is the SHO equation of n forms of oscillations.

Thus, the original curve, might be supposed to be but a section of the SHO equation. However, were we to resign from marking the borders of the original curve, and the object supposed to move on its own, the plot of motion would assume a realist form of:¹⁶⁰



The fact that the experiment is reproducible ad infinitum issues from that the most general form of motion is the periodic one. Thus, the most general equation is that of SHO. On the other hand, all other types of motion and their equations might be supposed to be but subsections of this most general one.

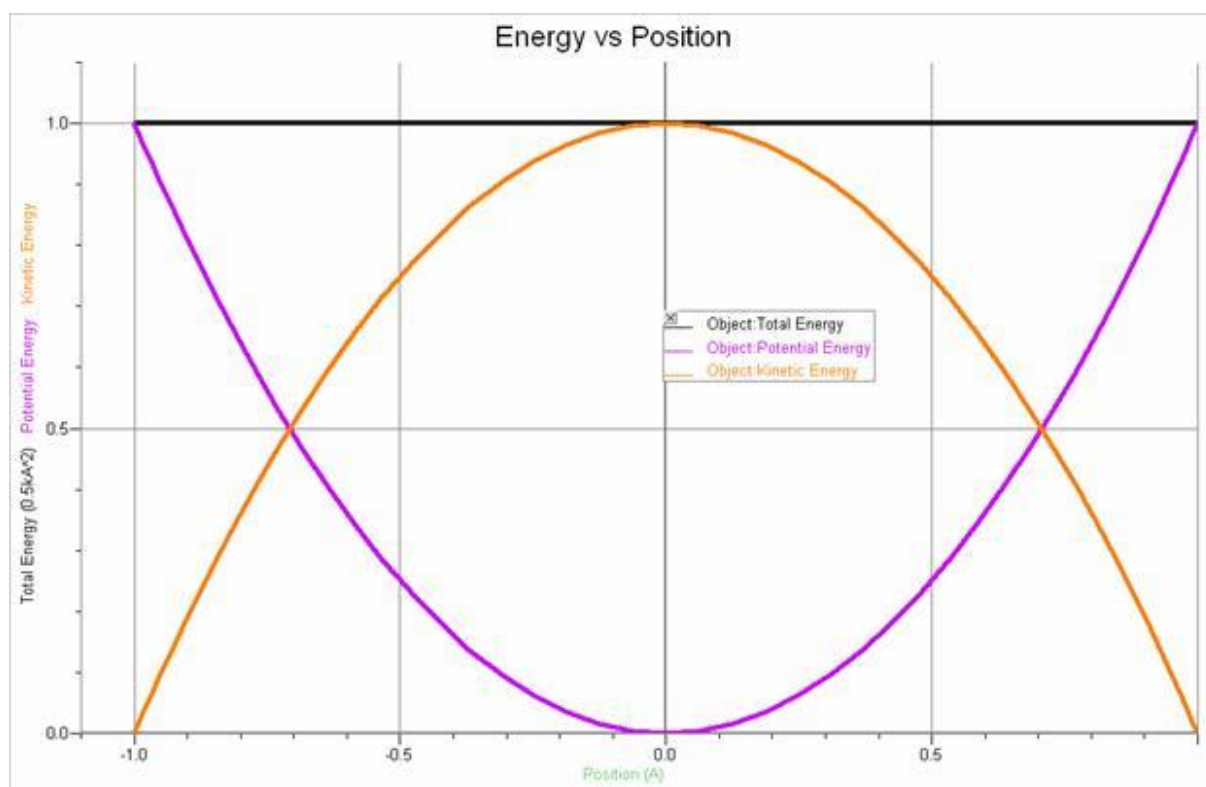
The most general in physics must be described by the most general mathematical equation;

$$e^{i\pi} = -1;$$

Now, substituting the time and displacement variables to this equation yields the SHO equation.

¹⁶⁰ http://de.structural-analyser.com/_internal/images/Fourier_parabolic_wave_700x497.gif

In the ideal world, the kinetic energy can grow to any extent and is theoretically measurable as such. Practically however, the borders of applicability of the equation $E = mv^2/2$ are included between some definite points. It is mathematically convenient to assume the values: $-\pi$ and π . In the experiment, a certain amount of energy is stored so as to trigger the motion. Similarly, a certain amount of energy is stored in natural objects, and the principle of conservation of energy observes in the form: $E_{entire} = E_{kinetic} + E_{potential}$. Thus, however, the local motion and the displacement plotted above in the original curve appears to be but a derivative of the potential energy stored in an object. Aristotle calls it the natural rest of a body. The maxima of the displacement are marked by the state of potential energy. Accordingly, the complete plot of energy must be drawn thus:¹⁶¹



On the graph, the principle of conservation of energy in macroscopic oscillator is illustrated. The points marked on the axis OX are borders of this oscillator and the maxima of displacement. The displacement might that of e.g., a bob attached to a spring. Some ideal string constraints must be met nonetheless. “It is assumed that

1. The string is perfectly uniform with a constant mass per unit length, and is perfectly elastic with no resistance to bending.
2. The string tension is presumed to be large enough so that gravity can be neglected.
3. Small segments of the string are presumed to move transversely in a plane perpendicular to the string, and that the displacements and slopes of segments of the string are small.

¹⁶¹ https://www.milliganphysics.com/APPhys/SHMOver_files/image024.jpg

Though stringent, these idealizations permit the development of a wave equation which describes well the vibrations of thin real strings.”¹⁶²

Historically however, when the “bottom” of the universe had been discovered, the problem was posed whence the constraints stem. In a solid body, electric forces account for its oscillations. The solid body is a system of microscopic oscillators. Their number in a macroscopic body is of the order of the Avogadro number. Still, rescaling the values is not possible if approaching the real, not phenomenal objects (the “bottom” of the universe). The approaching might be called harmonic analysis or decomposition. The decomposition process itself is called a Fourier transformation. Its output, the Fourier transform, can apply to the most abstract and general situations. Superposition principle lies at bottom there.

“Any wave-function can be written as a linear combination of eigenfunctions of any operator. ... The superposition principle is really the heart of the difference between [Quantum Mechanics and Classical Mechanics]. The fact that particles are described by waves whose amplitudes can be added and combined ... has no parallel in CM¹⁶³. ... A crucial question ... is whether the eigenvalues are countable (discrete) or continuous. It turns out that the boundary conditions for the eigenvalue equations will necessarily restrict the set of allowed eigenfunctions and eigenvalues for the system.”¹⁶⁴ For macroscopic bodies only, any (unrestricted) boundaries of oscillations can be assumed as on the graph plotted above.

Still, a real object is not just a set of particles but a system thereof, and the natural borders are not that much juxtaposed as rather coupled. When decomposing it, we approach a real (natural) oscillator. It is the problem of boundary conditions of the experiment. “For a particle in 1D, ...[Time independent Schrodinger equation] is a 2nd order Differential equation, that can be solved for any value of E . However, ... the boundary conditions of the system and the various properties of the wave-function will impose restrictions on the allowed values that E can take for there to exist a solution of the [Time dependent Schrodinger equation]. This will lead to quantization of energy.”¹⁶⁵

To sum up: the problem of the boundary condition of experimenting and the problem of how precisely an object can be measured too, is the problem of the real borders of microscopic bodies. At the “bottom of the universe” a natural discontinuity of objects appeared along with the continuity inherent to particular objects. Measuring which implies using a homogenous gauge for all things proved to be inefficient there. For a sound to be heard an object’s barriers must be permeable, which explains how a wave is propagated in a medium. Still, the microscopic object barriers are never permeable: the borders of experimenting measured by values ... -3π , -3π , $-\pi$, 0 , π , 2π , 3π , ... are “sharp” and non-permeable. This accounts for the difference between *hearing (sensing) and measuring*.

¹⁶² <http://hyperphysics.phy-astr.gsu.edu/hbase/Waves/waveq.html>

¹⁶³ Classical mechanics.

¹⁶⁴ <http://home.iitk.ac.in/~madhavr/CHM102/Physical/Lec2.pdf>

¹⁶⁵ <http://home.iitk.ac.in/~madhavr/CHM102/Physical/Lec2.pdf>

7. The problem of the natural place

A certain archetype of mathematical analysis was presented by Plato in the so-called unwritten doctrines. The indefinite DYAS was a tissue of the universe. Its counterpart in Timaeus is “matter” (χώρα); the simple container of things and events. Plato advanced towards a stringent notion of prime matter, formulated by Aristotle. Still, his stance is strongly influenced by the historical bequest of the Greek philosophy and burdened by the notion of “material” – hylé that both undergoes some changes and is describable on its own. Characteristically however, Plato claimed that the material was known due to a “complex thinking” only. Plato’s stance was characterized by Thomas in the following words:

In Physic., lib. 4 l. 3 n. 6: Quia igitur locus est dimensiones, et dimensiones sunt materia, dicebat Plato in Timaeo, quod idem est locus et materia. Omne enim receptivum alicuius dicebat esse locum, non distinguens inter receptibilitatem loci et materiae: unde cum materia sit receptivum formarum, sequitur quod materia sit locus.

Tamen sciendum est quod de receptivo diversimode Plato loquebatur: quia in Timaeo dixit receptivum esse materiam; in dogmatibus autem dictis et non scriptis, idest cum verbotenus docebat in scholis, dicebat receptivum esse magnum et parvum, quae etiam ex parte materiae ponebat, ut supra dictum est. Tamen, cuicumque attribueret esse receptivum, semper dicebat quod receptivum et locus sint idem. Sic igitur, cum multi dicerent locum esse aliquid, solus Plato conatus est assignare quid sit locus.

427. Therefore, because place is dimensions and dimensions are matter, Plato said in the Timaeus that place and matter are the same. For he said that whatever is a receptacle of anything is a place (failing to distinguish between the receptiveness of place and of matter). Hence, since matter receives form, it follows that matter is place.

Yet it should be noted that Plato spoke in various ways about receptacles: for in the Timaeus he said that the receptacle is matter but in his “unwritten teaching,” i.e., his oral teaching in the schools, he said that the receptacle was “the large and the small,” which however he allied with matter, as we have said above. Yet no matter to what he attributed receptivity, he always said that the receptacle and place are the same. Therefore, while many did say that place is something, Plato alone endeavored to say what place is.¹⁶⁶

¹⁶⁶ translated by Pierre H. Conway, O.P. College of St. Mary of the Springs, Columbus, Ohio 1958-1962

<https://dhspriority.org/thomas/Physics.htm>

The nature of the place was defined by Aristotle in his “Physics”. The notion of natural place is matched with that of the natural order of things. Without entering into a detailed historical discussion of the problem, we can enhance one thing at least: the problem of whether the universe is in a place. According to Thomas, Themistius was right in assuming that the world is so according to its parts only. The essential here is that the order as such was just that of parts.

In *Physic.*, lib. 4 l. 6 n. 14 Deinde cum dicit: est autem sicut vas etc., ostendit quomodo intelligenda sit immobilitas loci, ut excludatur opinio praedicta. Et dicit quod vas et locus in hoc differre videntur, quod vas transmutatur, locus autem non. Unde sicut vas potest dici locus transmutabilis, ita locus potest dici vas immobile. Et ideo, cum aliquid movetur in aliquo corpore quod movetur, sicut navis in flumine, utitur isto in quo movetur magis sicut vase, quam sicut loco continente: quia locus vult esse immobilis, idest de aptitudine et natura loci est quod sit immobilis; et propter hoc magis potest dici quod totus fluvius sit locus navis, quia totus fluvius est immobilis. Sic igitur fluvius totus inquantum est immobilis, est locus communis. Cum autem locus proprius sit pars loci communis, oportet accipere proprium locum navis in aqua fluminis, inquantum habet ordinem ad totum fluvium ut est immobilis. Est igitur accipere locum navis in aqua fluente, non secundum hanc aquam quae fluit, sed secundum ordinem vel situm quem habet haec aqua fluens ad totum fluvium: qui quidem ordo vel situs idem remanet in aqua succedente. Et ideo licet aqua materialiter praeterfluat, tamen secundum quod habet rationem loci, prout scilicet consideratur in tali ordine et situ ad totum fluvium, non mutatur. Et per hoc similiter accipere debemus quomodo extremitates corporum mobilium naturalium sint locus, per respectum ad totum corpus sphaericum caeli, quod habet fixionem et immobilitatem propter immobilitatem centri et polorum. Sic igitur, licet haec pars aeris quae continebat, vel haec pars aquae effluat et moveatur inquantum est haec aqua; tamen secundum quod habet haec aqua rationem loci, scilicet situs et ordinis ad totum sphaericum caeli, semper manet. Sicut etiam dicitur idem ignis manere quantum ad formam, licet secundum materiam varietur consumptis et additis quibusdam lignis.

468. Then [327], in order to exclude the aforesaid opinion, he shows how we must understand the immobility of place. And he says that a vessel and place are seen to differ in this, that a vessel can be transported but place cannot. Hence, just as a vessel can be called “a transportable place,” so place can be called “an immobile (non-transportable) vessel.” Therefore, when something is being moved in a body that is in motion, as a ship in a river, we speak of that in which it is being moved as a vessel rather than of a containing place, because place “wants to-be immobile,” i.e., it is of the very nature and aptitude of the place to be immobile.. On this account it is better to speak of the whole river as being the place of the ship, because the river as a whole is immobile. Thus the whole river inasmuch as it is immobile is the common place.

However, since proper place is a part of common place, we must consider the proper place of the ship in flowing water, not the water inasmuch as it is flowing, but in its relation to the

order or position which this flowing water has to the river as a whole: it is this order or position that remains constant, while the water flows on. Therefore, although the water materially passes on, yet, insofar as it has the motion of place, i.e. insofar as it is considered as having a certain order and position with respect to the whole river it does not change.

This also shows how we ought to consider how the boundaries of natural mobile bodies are place with respect to the entire spherical body of the heavens, which is fixed and immobile on account of the immobility of the center and of the poles. Therefore, although this part of air which contains, or this part of water, flow by and move as this water, yet, insofar as this water has the motion of place, viz., a position and order to the whole spherical body of the heavens, it always remains. This is like the same fire remaining as to its form, although as to its matter it is varied as wood is consumed and other wood added.¹⁶⁷

In *Physic.*, lib. 4 l. 6 n. 15: Et per hoc cessat obiectio quae potest fieri contra hoc quod ponimus locum esse terminum continentis: quia cum continens sit mobile, et terminus continentis erit mobilis; et sic aliquod quietum existens, habebit diversa loca. Sed hoc non sequitur: quia terminus continentis non erat locus in quantum est haec superficies istius corporis mobilis, sed secundum ordinem vel situm quem habet in toto immobili. Ex quo patet quod tota ratio loci in omnibus continentibus est ex primo continente et locante, scilicet caelo.

469. This removes an objection that could be lodged against positing place as the boundary of the container, for since the container is mobile, its boundary will also be mobile; consequently, a thing at rest will have diverse places. But this does not follow: because the boundary of the container is not place insofar as it is this surface of this particular mobile body, but by reason of the order or position it has in the immobile whole. From which it is evident that the whole notion of place in all containers is taken *from the first container* and locator, namely, the heavens.¹⁶⁸

The error consisted in identifying the place with the space. The gist of the problem is that although the most general type of motion is isochronous, there is no isotropous space that should sustain it. Thus, the idea of the there-dimensional space existing in reality proved to be false. The modern idea of multi-dimensional space was, on the other hand, necessitated by the fact that the there-dimensional is ideal only.

More complex structures (e.g. the human body) must be “multi-dimensional” indeed. The number of “dimensions” corresponds to the number of possible interactions (the scholastic *potentiae* – “powers”) with the environment. The power of sight (*potentia visiva*) is one of them. But the most elementary interactions (events) are binary structures of relatives. Events might be called “atoms” of the universe, provided no logical atomism, as espoused by Wittgenstein, is implied. For atoms (or whatever the name of the elementary) do not move (change and appear) at random, and events are arrayed in a definite sequence. The natural

¹⁶⁷ Ibid.

¹⁶⁸ Ibid.

place is relative in the sense of being a derivative of the interaction of just two bodies. As has been mentioned above, it can be interpreted mathematically (for a one-dimensional object) as a place where the second derivative of the envelope of the wave function assumes zero-value.¹⁶⁹

According to Aristotle, the natural place is not isotropic, but secondary to the co-existence of natural bodies. Things do not gather at random, but in a definite way, which might be called the order of the universe.

In *Physic.*, lib. 4 l. 8 n. 6: Deinde cum dicit: et fertur igitur in sui etc., assignat ex praedicta definitione rationem proprietatum loci. Et primo quantum ad hoc, quod corpus naturaliter fertur ad proprium locum; secundo quantum ad hoc, quod corpus naturaliter quiescit in suo loco, ibi: et manet igitur natura et cetera.

Dicit ergo primo, quod si ponatur locus esse terminus continentis, rationabiliter assignari potest causa, quare unumquodque corpus feratur ad proprium locum: quia illud corpus continens, ad quod consequenter se habet corpus contentum et locatum, et quod ab eo tangitur terminis simul existentibus, et hoc non per violentiam, est proximum ei secundum naturam. Ordo enim situs in partibus universi attenditur secundum ordinem naturae.

492. Then [338] he uses his definition to give a reason for the properties of place. First, as to the fact that a body is naturally borne to its proper place; Secondly, as to the fact that a body naturally rests in its own place, at no.

¹⁶⁹ In *Physic.*, lib. 4 l. 6 n. 9 Hoc ergo inconueniens accidit quia ponitur alius esse locus corporis contenti, ut aquae, et vasis, ut amphorae. Nam secundum illorum opinionem, locus aquae est spatium quod est infra extremitates amphorae: locus autem totius amphorae est spatium, quod est infra extremitates corporis continentis amphoram. Sed nos non dicimus quod alius sit locus partis, in quo movetur pars, cum totum vas transmutatur secundum idem (dicit autem hic partem, corpus contentum in vase, ut aquam contentam in amphora): quia secundum Aristotelem aqua movetur per accidens vase transmutato, et non mutat locum nisi inquantum amphora locum mutat. Unde non oportet quod locus in quem vadit, sit locus partis per se; sed solum inquantum est locus amphorae. Sed secundum tenentes opinionem de spatio, sequitur quod ille locus per se respondeat aquae, sicut et amphorae; et quod per se etiam respondeat spatio: et per se loquendo spatium illud movebitur et habebit locum, et non solum per accidens. Et licet corpus continens quandoque moveatur, non tamen sequitur secundum opinionem Aristotelis, quod locus moveatur, aut quod loci sit locus. Contingit quidem enim aliquod corpus continens, in quo est aliquid contentum, moveri, sicut aer vel aqua aut aliquae partes aquae: ut puta si navis est in fluvio, partes aquae quae inferius continent navem moventur; sed tamen locus non movetur. Et hoc est quod subdit, sed non in quo fiunt loco, idest sed non illud in quo aliqua fiunt sicut in loco, movetur. Et quomodo hoc sit verum, ostendit per hoc quod subdit, qui est pars loci qui est locus totius caeli. Licet enim hoc continens moveatur prout est hoc corpus, tamen prout consideratur secundum ordinem quem habet ad totum corpus caeli non movetur: nam aliud corpus quod succedit, eundem ordinem vel situm habet per comparisonem ad totum caelum, quem habuit corpus quod prius effluxerat. Hoc est ergo quod dicit, quod licet aqua vel aer moveatur, non tamen movetur locus prout consideratur ut pars quaedam loci totius caeli, habens determinatum situm in universo.

493. He says first therefore, that if place be taken to the boundary of the container, the reason why each body is naturally borne to its own place can be given: it is because the containing body (which is next to the contained and located body, and which is touched by it so that the boundaries of both are together not by compulsion) *is akin to it in nature. For the order of situs in the parts of the universe follows upon the order of nature.*¹⁷⁰

[...] corpus inferius, quod se habet consequenter secundum situm ad corpus superius, est proximum sibi in ordine naturae. Et ideo addit non vi, ut ostendat naturalem ordinem situs, cui respondet ordo naturarum, et excludat ordinem situs violentum, sicut aliquando per violentiam corpus terrestre est super aerem vel aquam.

... the lower body which is situated according to position, next to the higher body, is akin to it in the order of nature. And therefore he adds, “not by compulsion,” in order to point out the natural order of *situs* to which the order of nature corresponds and to exclude a compulsive order of *situs*, as when by compulsion a body of earth is above air or water.¹⁷¹

The remark about “a compulsive order of situs” recalls Kant’s *Prolegomena*, where the nature of the experiment seems to be described precisely enough and his *Critique of Pure Reason*. Let us quote again the text adduced in CHAPTER III. 1.

When Galileo caused balls, the weights of which he had himself previously determined, to roll down an inclined plane; when Torricelli made the air carry a weight which he had calculated beforehand to be equal to that of a definite volume of water; or in more recent times, when Stahl changed metal into lime, and lime back into metal, by withdrawing something and then restoring it, a light broke upon all students of nature. They learned that reason has insight only into that which it produces after a plan of its own, and that it must not allow itself to be kept, as it were, in nature’s leading-strings, but must itself show the way with principles of judgment based upon fixed laws, constraining nature to give answer to questions of reason’s own determining. Accidental observations, made in obedience to no previously thought-out plan, can never be made to yield a necessary law, which alone reason is concerned to discover. Reason, holding in one hand its principles, according to which alone concordant appearances can be admitted as equivalent to laws, and in the other hand the experiment which it has devised in conformity with these principles, must approach nature in order to be taught by it. It must not, however, do so in the character of a pupil who listens to everything that the teacher chooses to say, but of an appointed judge who compels the witnesses to answer questions which he has himself formulated.¹⁷²

¹⁷⁰ translated by Pierre H. Conway, O.P. College of St. Mary of the Springs, Columbus, Ohio 1958-1962

<https://dhspriority.org/thomas/Physics.htm>

¹⁷¹ Ibid.

¹⁷² Immanuel Kant’s *Critique of Pure Reason*, Preface to Second Edition, translated by Norman Kemp Smith.

<http://strangebeautiful.com/other-texts/kant-first-critique-kemp-smith.pdf>

Now, it is experimenting only that can generate “a compulsive order of situs”. The situation was given a theoretical footing when Kant claimed that the elementary constituents of the universe were isolated and forced to obey the dictates of “reason”. The claim was not substantiated, and can be only understandable in the context described above.

The situation of the natural experience, described by Aristotle, is totally different from experimenting, because the components of what presents itself to the mind are essentially related; which is to say: they are immediately so. In experimenting, to the contrary, no immediate correlation of objects is workable. Even according to Husserl, philosophy must be concerned with the immediately given. Husserl pointed out to the blindness scientism exhibited to what is given in such a way. Our being separated from it is spawn by using instruments, and might be called alienation. The other question is whether Husserl himself managed to eliminate the alienation.

The unity of what is given in the (natural) experience is that of: the moving and the moved; the acting and the acted upon; the form and the matter (of an object). The source experience is that of two correlatives of an event given indiscriminately.

Et huiusmodi duo corpora se consequentia in naturali ordine situs, et in ordine naturarum simul apta nata esse, sunt impassibilia: idest, cum continuantur ad invicem et fiunt unum, ad quod aptitudinem habent propter propinquitatem naturae, tunc sunt impassibilia. Sed dum tanguntur distincta existentia, propter contrarietatem qualitatum activarum et passivarum, sunt activa et passiva ad invicem. Sic igitur proximitas naturae, quae est inter corpus continens et contentum, est causa quare corpus naturaliter movetur ad suum locum: quia oportet quod gradus naturalium locorum respondeat gradui naturarum, ut dictum est. Sed haec ratio non potest assignari si ponatur locus esse spatium: quia in dimensionibus spatii separatis nullus ordo naturae considerari potest.

Two such bodies next to one another in the natural order of *situs* and which, in the natural order of natures, are disposed to be together, do not affect each other; i.e., when they are *made continuous to each other and become one*—and for this they have an aptitude *on account of the similarity of their natures*—then they do not interact. But when *distinct things are in contact, their mutually interact on account of the contrariety of their active and passive qualities*. Therefore it is the kinship of nature existing between the container and the thing contained that explains why a body is naturally moved to its own place: because the rank in natural places must correspond to the rank in natures, as was said. But such a reason cannot be assigned if place is taken to be space: because in the separated dimensions of space no order of nature can be considered.

On the other hand, the three-dimensional space can never be a natural background or an environment for natural events and things.¹⁷³

Ultimately, *vis locativa* of the parts stems from the locating force of the totality (the universe), and the parts are sub-structures of this totality. A body has a proper place as far as related to the parts of the universe closest to it.

The proper place, however, is not directly dependent upon the local proximity. It is the

¹⁷³ In *Physic.*, lib. 4 l. 8 n. 7: 493. Then [330] he gives the reason why bodies naturally rest in their own place. And he says that this happens reasonably, if we grant that place is the boundary of the containing body: because according to this the contained body is related to the containing body after the manner of a part to a whole—a separated part, however. This is abundantly clear in bodies that are easy to divide, such as air or water: for their parts can be moved by something in the whole just as a thing in place is moved in a place. And this also is not only true according to the figure of containing one under the other, but even according to the properties of their nature. For air is related to water as the whole, because water is like matter and air like the form: water is as the matter of air, and air is as the form of water. This is so because water is in potency to air absolutely. Now while it is true that in some other ways air is in potency to water, as will be explained later in *De Generatione*, it is necessary for the present to accept this in order that we may explain our proposition. Here it is not declared as a certainty, but in the *De Generatione* it will be proved with greater certainty. For it will be said there that, when air is generated from water, it is corruption *secundum quid* and generation simply, because a more perfect form is being introduced and a less perfect one is being put off. But when water is generated from air, it is corruption simply and generation *secundum quid*, because a more perfect form is being put off and an imperfect one being introduced. Consequently, water is in potency to air absolutely as the imperfect to the perfect; but air is in potency in water as the perfect to the imperfect. Hence air is as the form, and as the whole which is like the form; water, however, is as the matter and as a part, which pertains to the notion of matter. Therefore, although the same thing is both matter and act, because the water contains both in itself; yet properly speaking, the latter, i.e., the water, is in potency as an imperfect thing, but the former, i.e., the air, in act as a perfect. Hence water will be related to air somewhat as part to whole. And therefore these things, the air and the water, when they are distinct things, they are in contact; but when they form a unity, by one passing into the nature of the other, then coupling, i.e., continuity occurs. Therefore, just as the part naturally is at rest in the whole, so also a body naturally rests in its natural place.

Note, however, that the Philosopher is speaking here of bodies according to the substantial forms which they have under the influence of the heavenly body which is the first place, and which gives to all other bodies the power to act as places. But if we consider active and passive qualities, there is contrariety among the elements and one tends to destroy another. Finally he concludes in summary that it has been stated that place exists and what place is.

translated by Pierre H. Conway, O.P. College of St. Mary of the Springs, Columbus, Ohio 1958-1962

<https://dhspriority.org/thomas/Physics.htm>

proximity of nature that matters. The notion of natural place and natural rest are connected with that of the order of the universe.¹⁷⁴ The very analysis of motion, of things and events should induce to differentiating between the place and the placed.¹⁷⁵

Yet, it was already assumed in antiquity, that the notion of space (*spatium*) satisfied supposedly better the requirements of science. Avicbron was its mediaeval advocate. The notion was about to be bequeathed to the modern scientism. However, at the turn of the 20th century, after the idea of ether collapsed, the *real* existence of space was in fact questioned.¹⁷⁶

The Avicbronian notion seemed to be convenient for explaining the phenomenon of motion. It is easy to imagine that objects can move just because an empty place is left for them. As for the atoms (of the ancients), the Aristotelian claim that the void cannot condition motion has proved true. For according to Pauli's exclusion principle, electrons (the waves associated with them) fill up the alleged space so "densely" that they exclude the presence of the other ones. The image of an electron orbiting the nucleus is persuasive enough (and reproduced ad nauseam in popular books), but totally mistaken. There is no "void" "amongst" the electrons.¹⁷⁷

Thus, the critique Aristotle addresses towards Democritus' idea of motion seems to be

¹⁷⁴ In *Physic.*, lib. 4 l. 8 n. 6 Deinde cum dicit: et fertur igitur in sui etc., assignat ex praedicta definitione rationem proprietatum loci. Et primo quantum ad hoc, quod corpus naturaliter fertur ad proprium locum; secundo quantum ad hoc, quod corpus naturaliter quiescit in suo loco, ibi: et manet igitur natura et cetera. Dicit ergo primo, quod si ponatur locus esse terminus continentis, rationabiliter assignari potest causa, quare unumquodque corpus feratur ad proprium locum: quia illud corpus continens, ad quod consequenter se habet corpus contentum et locatum, et quod ab eo tangitur terminis simul existentibus, et hoc non per violentiam, est proximum ei secundum naturam. Ordo enim situs in partibus universi attenditur secundum ordinem naturae.

¹⁷⁵ In *Physic.*, lib. 4 l. 8 n. 5 Item alia ratio fuit, quod si omne quod est, est in loco, sequetur quod etiam locus sit in loco. Quae quidem ratio de facili solvitur, supposito quod locus sit terminus continentis. Manifestum est enim secundum hoc, quod locus est in aliquo, scilicet in corpore continente; non tamen sicut in loco, sed sicut terminus in aliqua re finita, ut punctum in linea et superficies in corpore. Non enim necessarium est quod omne quod est, sit in aliquo sicut in loco; sed hoc necesse est solum de corpore mobili: motus enim induxit ad distinguendum inter locatum et locum.

¹⁷⁶ In *Physic.*, lib. 4 l. 7 n. 3 Sed hoc videtur impossibile: quia ultima sphaera movetur in loco; nihil autem movetur in loco, quod non sit in loco. Huius igitur dubitationis difficultas non accidit iis qui tenent sententiam de spatio. Non est enim eis necesse dicere quod ad hoc quod sphaera ultima sit in loco, quod habeat corpus continens; sed spatium quod intelligitur penetrare totum mundum et omnes partes eius, est locus totius mundi et cuiuslibet partium eius, secundum eos. Sed haec positio est impossibilis: quia vel oportet dicere quod locus non sit aliquid praeter locatum, vel quod sint aliquae dimensiones spatii per se existentes, et tamen subintrantes dimensiones corporum sensibilium: quae sunt impossibilia.

¹⁷⁷ In *Physic.*, lib. 4 l. 4 n. 9; In *Physic.*, lib. 4 l. 5 n. 2.

up-to-date. Democritus assumed that the totality (the universe) was made up of atoms (being) and the void (non-being). Accordingly, the incidental in the universe was to be relegated to the empty space that separates “beings”. What is true in this sentiment is the conviction that a tension (albeit not a spatial border) between being and non-being is the essential feature of the universe. In fact, the tension is expressed in the notion of the subject matter of the supreme science – *ens in quantum est ens*. Albeit possibly reducible to nothingness, *all things desire to be*. Accordingly, their existence cannot be called incidental, properly speaking. The only problem consists in conciliating the two notions: of being and non-being. For the solution proposed by Democritus seems to be simplistic anyhow.

According to Aristotle, there are no “empty spaces” (literally speaking) in the universe. Things are different, no doubt; for they *intend being* in different manner. The existence of quantum leaps does not falsify Aristotle’s stance, but rather the claim that an absolute container of things existed apart from things themselves.

The ancient argument involves the problem of differentiating amongst things. For the void could have been an ideal “background” to contrast things against it. Still, the existence of non-being is oxymoronic anyway. Sophisticated as it might sound nowadays, the original notion was decidedly not so. According to Parmenides, the world “breathes in” the void, which is beyond it. The image of the world expanding into the void beyond it, might seem satisfy the modern taste.¹⁷⁸ Still, the notion of the curvature of space-time has corrected the image.

Generally speaking, the background was tacitly assumed to be a form of the universe, which explains the importance of the three-dimensional space in scientism’s worldview.¹⁷⁹ The notion implies the idea of absolute separability of things, which will be addressed in a following part of the book.

Things were supposed to be immersed in a container (void, spaces) or, more abstractedly, in the “logical space” (Wittgenstein). No particular configuration of objects

¹⁷⁸ In *Physic.*, lib. 4 l. 9 n. 5; In *Physic.*, lib. 4 l. 9 n. 12 Deinde cum dicit: esse autem affirmaverunt etc., ponit opiniones non naturalium de vacuo. Et dicit quod etiam Pythagorici affirmaverunt esse vacuum: quod quidem ingrediebatur infra partes mundi a caelo, propter vacuum infinitum, quod ponebant esse extra caelum quasi quendam aerem vel spiritum infinitum: ut sicut ille qui respirat, dividit suo flatu aliqua faciliter divisibilia, ut aquam aut huiusmodi, ita ex aliquo quasi respirante, ingrederetur distinctio in res; quam non intelligebant fieri nisi per vacuum, sicut de Democrito dictum est: ac si vacuum nihil esset aliud quam distinctio rerum. Et quia prima distinctio et pluralitas invenitur in numeris, ideo vacuum primo ponebant in numeris: ut per naturam vacui una unitas distingueretur ab alia, ne numerus sit continuus, sed habeat naturam discretam. Sed quia isti quasi aequivoce loquebantur de vacuo, appellantes rerum distinctionem vacuum, propter hoc infra de hac opinione non prosequitur.

¹⁷⁹ In *Physic.*, lib. 4 l. 6 n. 5 Secundo, ibi: sunt quidem igitur utraque etc., ostendit quod forma non sit locus. Quia quamvis locus et forma in hoc convenient, quod utrumque eorum est quidam terminus, non tamen unius et eiusdem; sed forma est terminus corporis cuius est forma, locus autem non est terminus corporis cuius est locus, sed corporis continentis ipsum; et licet sint simul termini continentis et contenti, non tamen sunt idem.

could be more natural than another one.

Moreover, it could be fancied that Nature tried at random various possibilities and eliminated the worse for the sake of the better ones. It remains unclear, however, why the “better” must prevail. According to the second law of thermodynamics the entropy of the universe (its “disorder”) must grow, which is true as for things separable in the way occasionalists believed them to be. The heat death of the universe was in fact foretold by evolutionists rather than a progress. If nature had been evolving, it must so in the direction contrary to that proposed by Bergson and others advocates of (the optimistic) evolutionism.

The consequences of the idea of evolutionism for human existence are serious. There would be no plan and no definite end of it. The human life would consist in *eliminating the worse and exploiting all possibilities without firm laws to be observed and obeyed*.

If non-being as such had separated us from being, the cognizance of being would be impossible. According to Thomas, species sensibilis makes for the cognoscibility of objects and of the continuation between the knower and the known, because it is “diffused” in the medium separating an object and the mind. It seems to be identical with the a-local potential of the thing.

The natural place of a body is more complex than just a point on the curve mentioned above. It is as complex as the bodies concerned. As has been said, there are many channels a body communicates with the environment. In particular, there many channels of the sense perception (*potentiae cognoscitivae*). The interaction with the environment takes place on various milieus. Generally, a place might be called natural if a natural activity (especially the vital one) occurs therein. There is natural rest too, and potential energy stored in organisms so as to spawn the vital activity. The objects of the environment can both provide the energy (food is a driving force of vital oscillations) and damp the activity of a living organism. The “oscillations” take place when a certain equilibrium between them exists for several years. The equilibrium is called a life.

The barriers of oscillations can be set down either arbitrarily (as is the case with instruments and all artifacts besides), or by nature itself and “measure” the life activity in the way no instruments possibly can.

It is worthwhile to recall Plato’s statement that God is the measure of all things. Taken literally, the statement might lead to a miscarried sentiment that God was contained in the same genus (of “how much”) with the other things. Thomas underscores the fact that God’s activity (and He himself too) transcends every definable order.¹⁸⁰ Still, there is a continuation to Him

¹⁸⁰ Summa Theologiae, I, q. 3 a. 5 (Videtur quod Deus sit in genere aliquo).

c. [...] cum esse Dei sit eius essentia, ut ostensum est, si Deus esset in aliquo genere, oporteret quod genus eius esset ens, nam genus significat essentiam rei, cum praedicetur in eo quod quid est. Ostendit autem Philosophus in III Metaphys., quod *ens non potest esse genus* alicuius, omne enim genus habet differentias quae sunt extra essentiam generis; nulla autem differentia posset inveniri, quae esset extra ens; quia non ens non potest esse differentia.

especially on the part of the rational creature, because the natural discontinuity is matched with the continuation of the causal relations. (The continuation is cascade-like). Continuance is *known* by humans to exist in the universe. The human hope is substantiated by precise notions directing a person towards the Ultimate step by step. The path is made up of the contingent things, but *the order* of the contingent is *not contingent*; it stems from what is necessary (from God). One can stumble on an obstacle (the contingent) on the way; and human ideas happen to be that indeed. “Words are great enemies of reality” Joseph Conrad wrote. The blight of the spoken haunts human existence and happens to be difficult to cast off. Some ideas seem to be imposing, but their loftiness depressing anyhow. Ideas scientism proposed are that. Mathematical ideas seemed to be exact enough to liberate men from the contingent of the everyday life, and they liberated them from the casual which often endangers this life indeed. Still, science is abstract in the way mathematics is, cannot provide the liberation and substantiate the hope for the Ultimate. The scope of its interest is restricted anyway. A line can be protracted ad infinitum, but the absolute (infinite) imagined as the mathematical “ ∞ ” is an Ersatz of the genuine infinity. God is infinite because encompassing all perfections and removing definitely all imperfections man can stumble upon on the way to Him. Philosophy gives a certain foretaste of what might be really expected *beyond* this life. However, it is but a feeble foreboding of what can actually satisfy the desire for the Ultimate.

8. Time

ad 2 Ad secundum dicendum quod obiectio illa procedit de mensura proportionata, hanc enim oportet esse homogeneam mensurato. *Deus autem non est mensura proportionata* alicui. Dicitur tamen *mensura omnium*, ex eo quod *unumquodque tantum habet de esse, quantum ei appropinquat*.

Article 5. Whether God is contained in a genus?

... since the existence of God is His essence, if God were in any genus, He would be the genus “being”, because, since genus is predicated as an essential it refers to the essence of a thing. But the Philosopher has shown (Metaph. iii) that *being cannot be a genus*, for every genus has differences distinct from its generic essence. Now no difference can exist distinct from being; for non-being cannot be a difference. It follows then that God is not in a genus.

Reply to Objection 2. This objection turns upon proportionate measure which must be homogeneous with what is measured. Now, *God is not a measure proportionate to anything*. Still, *He is called the measure of all things, in the sense that everything has being only according as it resembles Him*.

The Summa Theologiæ of St. Thomas Aquinas Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province.

According to both Aristotle and Thomas, the ultimate goal of *scientia naturalis* consists in considering the most perfect form existing in the physical world, viz. the human soul. Although existing in it, the principle of human life was always believed to be at the border of what was expected to be above it, and not totally immersed in the material world. The separate problem was to settle the exact place it occupied. To some, the border seemed to be easily movable, all depending on the subjective point of view of who tried to set it down.

A realm of the profane seemed to be left for individuals this way. But, according to Thomas, no human actions properly so called can be as mundane as they happen to be believed. There is no rigid border between *sacrum* and *profanum* in Thomas, because all human actions (*actus humani*) are stamped with an indelible mark of human spirituality. The gait, mimics and the like reveal individual and specific features of persons. These actions are so “perfectly measured” that totally incomparable to actions performed by animals. However, for the fear of equaling the human with the animal, the advocates of separating the profane *radically* from truly human actions believed in them being so different that performed in the *inner* time of human consciousness (not in the animal and *material* time). The human might be believed to have been “decreed” this way: either institutionally or, at least doctrinally. Nevertheless, we live in the physical world, and it seems impossible to “think out” a better one. A certain transformation of the cosmic energy occurs at the point where the material meets the spiritual; where the potentially known only becomes actually known. Being knowable, in turn, means being ordered, but there is a primitive order in nature before known: the sequence of events in time is never casual.

There are special beings that are *conscious* of them being in the world apart from just existing in it. They might be called perfect *primomota*. Plants are *primomota* too, but it seems to be convenient to focus on the most salient marks of life, viz. cognition, and the human one first of all, because animals are not aware of them being in the world in the way humans are. The kinetic proof does not take into account this (vital) kind of cosmic energy *directly*. However, if analyzed minutely enough, the *primomota* and the human soul in particular could be considered sources of motion after all. Thus, a certain type of “anthropological” proof of the existence of God appears to be workable. It was mentioned in PREFACE. 7 that this kind of argumentation appeals stronger to some minds, as Steenberghen observed. The proof would be theoretically possible if the source cognitive data were analyzed diligently enough.

It seemed to some that the simplest (and the best) way to describe facts (the originally given) consists in subsuming them under one common denominator. The tree-dimensional space was believed to be this. The stance is impugned by Aristotle in “Physics” (Commentary by Thomas: III, lect. 2). The reason seems to be plain. The stance stipulates too much (and consequently cannot be *unconditionally* valid). Besides the originally given the *existence* of *something else*, viz. the mathematical matrix was taken for granted. The events would have been described on the matrix just as words or figures were delineated on a sheet of paper. Now, the existence of this “carrier” of events is problematic and not originally given. A certain archetype thereof was the Platonian *χώρα*. Platon himself admitted that *χώρα* is known by a complex reasoning only.

Aristotle's stance is totally unconditional, as he states that the originally given has but "a tiny amount of entity" (Metaph., VII, c. 4, 1029b 8n), and no more existence is supposed than necessary. We can reword his statement as follows: the originally given must have as little entity as possible lest some unjustified suppositions (taken for granted) be mingled with it and render what is known (the *very thing*) indiscernible from the *mode* it is given.

For this purpose, Aristotle avails himself of the last category of being: the category of relative (relative is the feeblest being). The category satisfies the demand for being most primitive and consequently applicable to all the others. The category of quantity is one of them. All other categories besides this primitive one have "more" entity. Obviousness, the most stable in this respect is the first one – the category of substance. All the more stable is that substance which is called subsistence; i.e. endowed with completely autonomous being. The person is this. Still, and paradoxically enough, being autonomous equals being least apt for being analyzed. The possible weakness of the anthropological proof issues from the fact.

Nevertheless, all categories can be subsumed under one common denominator, if regarded just as *categories of being*. Being is the subject matter of the supreme science – metaphysics. Plato faced the problem of deciding whether being is a genus. Scotus intentional being, for all sophisticated precautions made, was nothing else. Aristotle distinguishes between genus methodologicum and the ordinary genus e.g. that of animals. The "genus" of being is not univocal, as it is proper to metaphysics to *judge* rather than to *conceptualize*. Otherwise, it would be tempting to *substantiate* the genus anyhow. Spinoza identified it simply with substance to the effect of the substance being just one and uniform. The monist stance would be unacceptable for a theologian (and probably foreseen as a danger by Scotus). The category of quantity seemed to be more "safe" for someone who would like to differentiate between e.g. an evil-doer and a righteous person. All the more, the monist stance was unacceptable for the theologian, as the differentiating is indispensable in morals and ascetics. Consequently, a "neutral" category of quantity was given in Scotus preponderance over all the others. Thus however, the originally given was lost sight of.

The obvious consequence was that the specific human relativeness (the ability of setting up relations) was reduced to the relativity of things comparable as to their dimensions only. The same type of reductionism is visible in endeavors to reduce human activity to the animal one, and searching for some rudimentary rationality in the latter. The line of reasoning seems to run thus: animas are "less" than humans but are comparable nevertheless.

A desperate attempt to safeguard the authenticity of human existence (and to prove it to "be *incomparably* more") was made by creating a human realm of existence completely separated from the physical one. The inner time of consciousness was meant to vouch this authenticity (in Bergson, Ingarden and Husserl). There was no definite relation between reality and consciousness; nay, there was an unbridgeable raft between them; as unbridgeable as the autonomy in question could have required. Moreover, the very awareness of time was in Heidegger definitive of the human mind.

Time is a gauge, no doubt. Now, without someone who gauges the gauge cannot exist. The only problem is whether the human kind of measuring is the only possible. Apparently, there was time before Homo sapiens appeared on the earth. This time might be called human

too, because it prepared a realm for this new being. Homo sapiens was about to be aware of what both preceded and might follow – he was irreducible to them both. The time was measured, no doubt, but someone else did measure. In fact, the kinetic proof might be called a demonstration of the Measure of the cosmic motion. We can *imagine* the Measure anthropomorphically as the Transcendental Consciousness (Kant); Le Grand Être (Comte) or the Absolute State (Marx). We can even resort to a more sophisticated idea of the Great Mathematician. For all the differences, those ideas are human inventions, bound to separate humans from the *real* Source of life, because of being immanent to the so called consciousness. The ideas are idols, bluntly speaking. Metaphysics was invented by humans too, but marked by hostility towards idolatry, since *ens inquantum est ens* (the subject matter of metaphysics) was meant to be as transparent a means as only possible to see the First Source *behind appearances*. Physicists happen to be metaphysicians of a sort, because they loath “mysticisms” openly challenged by the first Geek philosophers already (they deem them deadly to science). There is a deeply rooted conviction in them that things are what they are independently of the manner we think of them. The existence of the objective order of things is at least implied, although perhaps not always willingly admitted. The existence of time is granted also. Time is the one of physical variables and regarding it as subjective or whatever of the sort sounds to physicists preposterous. However, nothing save the common sense could guarantee this “realistic” stance opposed to idealism.

Despite the deficiencies of both (the subjective and the common sense objective) stances, or perhaps just because of them being that radically opposed, a certain reconciliation is to be sought after dropping some unjustified presuppositions made by them both. This method of argumentation is, in general, adopted by Thomas in the Disputed Questions. The problem is that of the gauge of motion. Now, before being related to an observer this or that way, a thing if understood seems to subordinate the intellect and make it *relative* to it. This is included in the notion of the scientific fact. Science and metaphysics prove to be mutually related if some fundamental notions are concerned.

The three-dimensional space is infinite and the idea that motion took place in such a container of events only would have undermined the validity of the proof of the existence of God (its minor premise). But on the other hand, the existence of just one “spirit” (or whatever the name) would undermine the very possibility of settling the existence of the *Transcendent Principle*, which adds up to “humanizing” God and replacing the *real* Source of life with some comforting illusions. Both possibilities must be discarded.

The second one seems to be more “humane”, but the very purport of the word might prove somehow equivocal. Edmund Husserl had to pay a high price for severing the human subjectivity from the physical world. The possibility of identifying the “spirit” with just any guise of human subjectivity must eventually lead to appreciating any appearance of the latter. These appearances are indistinguishable from what things really are and the stance must lead to relativism. On the other hand, and paradoxically so, this relativism happens to be accepted so masterfully (dogmatically) that some “masters” appear along with those enslaved (whose dignity has been relativized).

Now human “relativeness” consists in something decidedly more than relativization. It

consists in settling indissoluble bonds with what transcends each human person and ultimately with God Himself. These bonds might be called relations, and satisfy better the need for humans being unconditionally accepted by God than any other “humane” Ersatz. God cannot be humanized, as the relations in Him (the Divine Persons) are inherent in Him (contrary to what Gilbert de la Porrée claimed). The possibility of being unconditionally accepted is substantiated in relating the individual human existence to God. There is no real relation of God to the world,¹⁸¹ but the reverse relation makes for the maximum of existential possibilities of man. The possibilities are disclosed in philosophy to some extent, because the kinetic proof retraces the nature of the relation of the world to its Transcendent Principle.

Relativism might be defined as a crippled relativeness of man. The human relativeness must be possibly substantiated in transcendent objects; those closer one are human persons; that most important is the Absolute Transcendent Principle. A physicist says something definite about the transcendent world indeed, but the scope of transcendence is, in this case, considerably narrow. Aristotle assumes a golden means. He elaborated upon the concept of motion that transcends both (subjectivist and objectivist) reductionist stances.

Time, to Aristotle’s mind, is *a* measure of motion. It is the *human* one. Measuring, at the same time, does not imply “creating” or “construing” objects (the latter term was used by Kant), but seeing them in the way proper to humans. Regarding time as a physical variable is just one type of seeing it in general. In other words: the phenomenon of time might be seized in more or less general terms. Even in physics, the linear displacement might be regarded as an (approximate) subsection of a more general type of motion, viz. that of a SHO. The idea of the three-dimensional space, in turn, might yield to the idea of the “curved” space-time, just as if the whole universe were one huge harmonic oscillator.

The fact that human intellectual life might consist in gathering in the mind all guises of energy of the universe issues from that it is as periodic as the natural processes are. The obvious fact that our daily rhythm of work coincides with the circular motion of the earth is significant enough. If ancient Greeks appreciated living according to nature, it was because of the possibility to adjust the rhythm of life in general to the rhythm of nature. To the contrary, all endeavors to tether human existence to *some objects* are detrimental to human freedom and unhampered activity. Any material objects must be so. Two harmonic oscillators can be harmonized, but a material object as such is bound to damp the oscillations proper to a given harmonic oscillator. The fact occurs every time when artificial objects (unable to reproduce oscillations on their own) are “created” by men and hinder the activity proper to them. Ideas, words, books are all the more likely to do so if seen just as *images* of the real world, and not *judged* according to how effectively they foster human life in *all its possible guises*.

The specifics of human existence consists in the aforementioned reconciliation, i.e. adjusting the rhythm of human life to the pulse of the universe. In this case, a driving Force pumping in the energy into the whole system of the universe might be known. The reconciliation as devised by Hegel (*Versöhnung*) is bound to separate men from the real Source of life, and to create, for that matter, enclaves of culture exclusive of those not directly partaking. The same is the case with those who focus on signs instead of what they might

¹⁸¹ STh., I. q. 28, a. 1 ad 3

possibly represent. The time appears to be humanized i.e. severed from what it normally measures, i.e. the physical world. Men become spelt-bound in the magic circle of words. The latter might express *tenses* but more often than not fail to express *time*.

Human actions, generally speaking, must tend to something definite for being just what they must be: human. It is only natural to try and settle the nature of what they tend to. Values are assumed to be this, albeit their nature (if meant to be a definable one) is not, as a rule, analyzed. The term of values is capacious enough to encompass both observables registered in science and norms of acting in morals. In both cases, the human subjectivity witnessed the values (which is considerably more than just to take responsibility for them), and the human authority vouched for them being “lived through” (“erlebt” means in German “experienced”) authentically. The most striking trait of the contemporary culture in general and science in particular is just the importance attached to authorities. Nonetheless, the stress might be put either on the subjectivity (and the objective order of values undermined in fact), or on the objective set of them (and the human subject put on the Procrustean Bed of the Kantian social compulsion). However, that humanized objective order of values appears questionable in a shorter or longer spell of time. To avoid that, the *nature* of values must be defined so as to thwart any attempt to relativize them.

The most convenient means to do this seems to break the magic circle of words the problem has been nowadays entangled in. The most effective way to substantiate the meaning of the words is to translate them into another language. Seeking for his/her cultural identity one could resort to the language of the roots. The term in question (value) might be translated into *Latin* as *qualitas* or *quantitas*. Both terms have been vernacularized in English, but seem to have devaluated considerably.

Quality is (in the scholastic Latin) what defines a species first of all. E.g. a specific difference of man is *rational*. Being wise (a quality as desirable in a man as no other else), i.e. being rational in the full sense of the word consists in *distinguishing* amongst objects.

Quantity, on the other hand, might be laid down on the axis of coordinates and thus must allow *indiscrete* values for drawing the graphs of physical processes. Them being discontinued renders the function describing the motion impossible to be differentiated. Obviously, we measure motion taking the first derivative of displacement against time for its velocity and the second for its acceleration.

In this case “more” or “less” as applied to humans gained quite perspicuous character. If time is laid down on the axis of the human history, the values departing from the zero-point (the appearing of humans on the earth) in the right direction will be “more moral” (better) than those “obsolete” and belonging to the past. A breaking point of the human history (e.g. the 7th of Nov. 1917) might *provisionally* contradict the optimistic idea of the human progress, but the advocates of the unconditional progress would claim that the experience of totalitarianism was not that much a tragedy of those who suffered, but rather an experience humanity gained from it and a knowledge obtained from the errors so as to shun them in the future. The experience would be more valuable than painful. Anyway, no perspective of a definite catastrophe loomed. The morals were expected to evolve (and meliorate) along with the progress of science.

As for the latter, a catastrophe occurred nonetheless some hundred years ago. It was not the catastrophe in science though; it was the one discovered in it. The so called ultraviolet catastrophe is meant. The monotonic distribution of the values of energy (the radiation of the so called ideal black-body was analyzed) proved impossible in nature. There are but discrete levels of energy allowed to exist in it. Some scientists (e.g. Bohm) mentioned the problem of quality in this context. Still, Bohm himself was regarded as an enfant terrible of the modern science, as scarcely any believed in that science can dispense of regarding the quantitative side of the world only.

Both the nature of the physical world and the most perfect in it, the human soul, is defined by Aristotle in qualitative terms. Rationality (the ability to discern) is a quality. *Scientia naturalis* and Aristotle's psychology too account for the discontinuity of the energy of the universe. On the other hand, if a continuity of what makes up the system of the universe existed after all, it would be but a unity in diversity, according to the famous saying by Jacques Maritain: "distinguer pour unir". Thus, values are absolutely valid, but on the other hand, they can assume discrete forms only.

Consequently, living according to nature need not be understood in terms of a shallow naturalism. St Paul was not such a "naturalist" when claiming the value of the natural law (Rom 2. 14).

So, the reconciliation is possible but no degradation must follow. Moreover, the need for reconciliation is all the more nagging as the words spoken out pretend to represent reality or to provide some insight into it. Literally speaking, i.e. taking into account mere possibilities of the human mind, no reconciliation of words and reality is possible. For according to Aristotle "words relate to the meaning of things signified *through the medium* of the intellectual conception" only.¹⁸²

As has been said, a kind of transformation of comic energy occurs at the border of reality and the words. The "is" of a statement might (or rather should) correspond to the "is" of the facts, but no word can correspond to things, i.e. denote them.

As was said in PREFACE. 7,¹⁸³ the problem of the Arab mediaeval philosophy consisted in trying to settle the relation of the two realms. In fact, this philosophy *originated* from the need to discern them. But not only this. As it had failed to, and the problem remained unsolved, it bequeathed the incertitude to the modernity. In Ockham, who rejected the Greek naturalism and espoused the idea of the Orient Despot governing the universe, the theory of supposition (designation) appeared. No absolute Despot attaches importance to what he has promised; to the words. The God of the Arab philosophy was either unpredictable or so weak that able to assist only the cosmic processes without imposing them laws, i.e. without providing them with a definite wording.

¹⁸² Sth. I, q. 13. a. 1, c; *The Summa Theologiæ of St. Thomas Aquinas*. Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Aristotle, *Peri Hermeneias*, c. 1, 16 a 13 -14.

<http://www.newadvent.org/summa/>

¹⁸³ In the following paragraphs, the above-said is repeated to some extent.

There existed but one historical (i.e. real) event when the reconciliation of the Word and nature occurred. The human nature was united to the Divine Word. The event transcended the natural course of events and could not be rationalized or cut according to the natural human understanding or expectations. All misapprehensions of the rationalist philosophy, affected by its Arab ancestor, consisted in an assumption that man is able to reproduce this unique historical event with natural means; to bridge the gap between words and things after assuming some ideas supposed to be fertile enough to be reproduced in the real world. But no human word is able to trigger a natural process. True, the understanding of principles (the general and knowable tendency of nature towards existence is such a principle) originates in the human mind just as natural process do and this makes understanding similar to generation. The inner word can be conceived in the human mind indeed. But this occurs independently of the human will, because willing implies a preceding intellection. No ideas (without the human will implementing them) can be as pregnant as able to create a better world to live in. It is unworkable and all attempts to do this must lead to idolatry.

Now, it is astonishing indeed that the problem of the relation of words to reality, despite being apparently unsolvable by natural means, has not ceased to be raised anyhow. This continuity testifies to something indeed. What does the fact demonstrate really?

Metaphysics is *a* domain of the natural intellect. But the natural abilities of the intellect are not restricted to metaphysics. It was believed that metaphysical thinking was going to yield to some more perfect guise of thinking (Comte). The claim was true, albeit not in the sense rationalists attached to it. In PREFACE a quotation was adduced from *Enchiridion* of Denzinger regarding the possibility to demonstrate the existence of God with natural means of the intellect. However, *Enchiridion* says that human intellect can state something more besides. Apart from knowing the Transcendent Cause of the universe with certitude, it can discover the authenticity of the Revelation too. The unique historical event (the Incarnation) must be concerned first of all.

The Magisterium of the Church has recently underscored the pivotal role of temporality for human understanding. The cognizance of the historical event we are speaking of is, to some extent at least, connected with the experience of the inner human time. It remains to settle the nature of this relation. If we transcend metaphysical thinking in the direction perhaps both unforeseen and unpredictable, we face the continuity of experience that can render the historical event in question as present to the contemporary man as for those who witnessed it with their own eyes. The continuity testifies to that the problem of the relation of the word to the reality must have remained unsolved, and that it must have been put forward despite the impossibility to solve it. Rationalism does not demonstrate anything directly, nor does it pretend to. But the rationalist *experience* testifies to something indeed. The continuity of the inner time it speaks of is the continuation of this past event to the present. A historical fact might be settled if related to something already known. Now, the modern man testifies – by his/her being at loss in settling the fundamental problem of the modern philosophy (the sign-thing relation) – to the unique past event in which the reconciliation of the Word and reality occurred indeed. The problem of how words are related to reality has been asked incessantly and is never going to cease so. Humans have proved to

be inwardly compelled to raising the problem anew. This is the unique rationalist experience we are speaking of. In this sense it is priceless. The experience of what in fact was “transcending the boundaries of the pure reason” was inevitable.

Physicists happen to be blamed for naturalism and the lack of the taste for spirituality. Indeed, should the linear development be a mark of the authenticity of human subjectivity and the linear progress of it equaled to spirituality, it must be admitted that nothing of the sort has existed in the centuries after the foundations of the European science were laid. Despite the romantic idea of the human progress, the real development occurred only if the rhythm of the human intellectual life happened to be adjusted to the rhythm of nature. Ancient Greek espoused the idea of the periodic time; the idea of the linear one is foreign to the European Civilization.

Human reasoning has it that it can be either intellection or “thinking” (dully incriminated by Krąpiec for being just barren). The two rhythms happen either to correspond or to depart when science declines. An astonishing point of convergence was found some 100 years ago when the discoveries of quantum mechanics proved the radical discontinuity of the energy of the world. The inner time of the human discovery happened to be adjusted to the outer time of nature. A reconciliation occurred indeed.

The idealization of the world, on the other hand, can assume the form of instrumentalization of nature. Regarding quantitative side of nature only equals regarding the very nature as means. Moreover, humans have to share the same lot then, as it is practically impossible to separate human existence from the natural world they live in. “How much” must be predicted in relation do something indeed. Scotus assumed a frame of reference, as it was in respect to God that the human world was gauged. The same did Plato in his “Laws”. However, the theological stance was bound to meet with hostility, and nothing else was to be expected of some a priori claims tried to be forced upon. Thus, a neutral frame of reference was believed to be settled by Galileo, and the human life to unfold in an eschatological perspective of the mathematical ideatum.

Regarded in that perspective, human existence seemed to be separated from its closest environment, both to the profit of those who used it and to the detriment of those who depended on it. Anyhow, in the eschatological perspective mentioned above (that of the transcendent ideal), *everything* should be regarded as means only and the *real* human existence (i.e. human nature) too (it must be instrumentalized). Practically, humans might be expected to live the life of consumers only and be defined accordingly. The scheme (the compulsion) might be effective for some time indeed, but means must lead eventually to some end, because the Transcendental Kantian Idea cannot beguile humans ad infinitum. Historically, it must explode sooner or later. The Hegelian idea of Reconciliation was an immediate consequence of the Kantian Transcendental one. The uncanny form it assumed in Hegel testifies to how nagging the need for reconciliation was going to be, after human existence had been severed from the natural world. Time must be lived through as intensely as only possible, and the plenitude of time is a real perspective for human existence. Humans must be open both to the past and to the future so as to live as intensely as only possible. For the same reason, human existence must be open for the Transcendent Measure of motion too.

The order of the universe is endowed with minimum of entity as founded upon relations of things instead of things themselves. Metaphysics provides a means to unify the diversity of things and its subject matter is most apt to express the tendency towards being (and to the Ultimate too). The whole universe is one closed system, which might be compared to a gigantic harmonic oscillator. The structure is made up of singular sub-structures, described in modern physics, and analyzed (as beings) in metaphysics. However, the most precious in metaphysics is not just contemplating the structure, but what is beyond it.

9. The fullness of being and the formalism of mathematics. The problem of Kantianism

Avicenna assumed that being and unity (*esse et unum*) are accidents (*accidentia*) of essences. According to him, out of the infinite possibilities, just one individual comes to existence actually and happens to be realized (due to the General Enlightenment) in time and space. Apparently, the scheme of the relation of mathematical objects to what they might correspond to was anticipated. The scheme reworded in a modern tongue reads: out of sets of individuals some of them come to existence, which could be described by the existential quantifier $\exists$. What existed this way was but an element of a set.

There is a difference between stating that numbers are incidental to things (and are besides inseparable from the material objects), and claiming that individuals are incidental as such. Avicenna followed Aristotle in that he assumed the term of accident. What, then, the term of accident means (in Aristotle)? Numbers are accidents of substances indeed, but the priority must be settled nonetheless. Is the mathematical ideatum a being? Is it an objective being, independent of the physical reality and possibly related to it by the experimental procedure only? Or is it secondary to the physical world (substances) and abstracted thereof? The theory of the General Enlightenment invented by Avicenna makes the Aristotelian abstraction redundant and the existence of substances (describable by definitions) problematic.

It might be granted that, for physical things, being describable in quantitative terms is a necessary prerequisite of their existence. Mathematicism, however, says considerably more: being measurable was not only a *necessary* but *sufficient* condition of being real. But if so, then measuring would impose unity (or even reality) on the objects measured. The problem whether the mathematical unity is the same as the physical one has been already addressed many times in this book. The problem is far from being just historical, or if it was such, then the history of the problem was going to be bequeathed to modernity nonetheless. Avicenna died in 1037, but the idea of Enlightenment did not.

The dualism, the differentiating between the intentional being and the real one; between *vérités de raison* i *vérités de fait* (Leibniz); resp. *relations of ideas* and *matters of facts* (Hume), is in fact consequent upon the idea of Enlightenment. According to Aristotle, any notion must be definite (be one), because who does not understand something one and

definite, does not understand anything at all. (De veritate, q. 2 a. 12 arg. 10. Secundum Philosophum in IV Metaphysicorum, qui non intelligit unum determinatum nihil intelligit). It remains however, to settle *the nature* of the unity. Mathematical objects are definable by, and made up from, some unities, but physical beings substantiate these unities, because it are physical substances only which sustain mathematical forms. The mathematical unity is by no means the only possible, nor, for that matter, is it the original one. The unity of beings is, according to Thomas, the same as their integrity (their being indivisible in some respect and to some extent). (De veritate, q. 2 a. 15 c. ... Per hoc autem aliquid est unum, quod est in se indivisum, et ab aliis distinctum; unde oportet quod quicumque cognoscit aliquid quod sciat distinctionem eius ab aliis). “According to the Philosopher, whoever does not understand a thing which is one does not understand anything at all. A thing is one, however, by being undivided in itself and distinct from others. Hence, whoever knows a thing must know its distinction from other things. But the first basis of distinction lies in affirmation and negation. Therefore, whoever knows an affirmation must know its negation.”¹⁸⁴

Obviously, the natural integrity can be breached, still, this results not in redefining the species (the basis of a specific unity) an individual affected belongs to, but in destroying this individual. The fact that some species had existed and had ceased to nonetheless does not in the least impair the fact that that existed in a *definite manner*. The facts cannot be changed nor generated by any sophisticated procedure claiming the name of a science. Nor can the human species be “meliorated” in the style of the Darwinian eugenics. The only possible way to change it is destroying human persons belonging to it. Natural things are integral, but not intergraded by “transcendental ideas” devised by Avicenna and Kant.

Avicenna understood being and unity as resulting from the reduction of the set of possibilities called by him the intentional being. As long as the reduction is accomplished with due accuracy and diligence (which might be the case in experimenting), the scheme can be called rational indeed. All artificial objects can behave in a predictable manner as far as the art adopted permits. But Avicenna saw just one side of the problem, because, generally speaking, not only artificial objects must be supposed to behave like that. The cornerstone of the Western Civilization is the conviction that all objects (even those not directly perceptible) behave in a definite manner (them being objects is tantamount to them exist objectively). But if so, the theoretical distinctions must be maintained and priority of substances granted too. The relation of *mathematical* objects to those envisaged in experimenting must be defined in objective terms. The relation of the aforementioned realms commonly accepted by who followed Avicenna must be reversed and quantity regarded as an accident dependent really on

¹⁸⁴ Questiones Disputatae de Veritate, TRUTH by Thomas Aquinas, Questions 1-9, translated by Robert W. Mulligan, S.J. Chicago: Henry Regnery Company, 1952.

substances it has been abstracted from.

According to Thomas, it was Plato, who confused the mathematical unity with that of natural things, and he followed Pythagoreans and Parmenides there. However, the ancient stance differs, as Thomas points out, to the modern one. Avicenna (but Scotus, Leibniz and other modern theoreticians consequently too) assumed that unity was a transcendental property of being, whereas Plato just identified it with substances. To Plato's mind, both were coextensive and both to be tackled theoretically (and independently of the way they were perceived). This was not the case with modernity inspired by Avicenna. Being transcendental amounted to opening the existential possibilities (and progress) of regarding material things in quantitative terms. The *existential*, thus, was equalled to being *indefinite*. The possibly of opening a dialogue aimed at settling the *objective* truth was, in fact, precluded and the Greek parrhesia abandoned. The very style of the Metaphysics of Al-Shifa is significant. Avicenna addresses often the reader with the following: "now that you know ..." (what you have been told), whereas Thomas argues in his "Questions" to the effect: "although you might be right in a sense, you should take into account also the fact ..."

There is both Aristotelianism and Platonism in Avicenna's stance. But there is also a unique manner they were fused together, for it were Arabs only that regarded such a fusion possible or even natural. The way this paradigm affected the development of the European science in modernity is marked by this ambiguity and it is by no means certain whether it was mathematicism or Aristotelianism that triggered the progress. Aristotle might have been skeptical of the idolatrous attitude to progress, but might have a sober view on its nature nevertheless. Let us, then, have a closer look on Avicenna's stance.

Respondeo dicendum quod circa hoc fuit duplex opinio. Quidam enim, sicut Avicenna et Algazel, dixerunt quod impossibile est esse multitudinem actu infinitam per se, sed infinitam per accidens multitudinem esse, non est impossibile. Dicitur enim multitudo esse infinita per se, quando requiritur ad aliquid ut multitudo infinita sit. Et hoc est impossibile esse, quia sic oporteret quod aliquid dependeret ex infinitis; unde eius generatio nunquam compleretur, cum non sit infinita pertransire. Per accidens autem dicitur multitudo infinita, quando non requiritur ad aliquid infinitas multitudinis, sed accidit ita esse. Et hoc sic manifestari potest in operatione fabri, ad quam quaedam multitudo requiritur per se, scilicet quod sit ars in anima, et manus movens, et martellus. Et si haec in infinitum multiplicarentur, nunquam opus fabrilis compleretur, quia dependeret ex infinitis causis. Sed multitudo martellorum quae accidit ex hoc quod unum frangitur et accipitur aliud, est multitudo per accidens, accidit enim quod multis martellis operetur; et nihil differt utrum uno vel duobus vel pluribus operetur, vel infinitis, si infinito tempore operaretur. Per hunc igitur modum, posuerunt quod possibile est esse actu multitudinem infinitam per accidens. Sed hoc est impossibile. Quia omnem multitudinem oportet esse in aliqua specie multitudinis. Species autem multitudinis sunt secundum species numerorum. Nulla autem species numeri est infinita, quia quilibet numerus est multitudo mensurata per unum. Unde impossibile est esse multitudinem infinitam actu, sive per se, sive per accidens. Item, multitudo in rerum natura existens est creata, et omne creatum sub aliqua certa intentione creantis comprehenditur, non enim in vanum agens aliquod operatur. Unde necesse est quod sub certo numero omnia creata comprehendantur. Impossibile est ergo esse multitudinem infinitam in actu, etiam per accidens. Sed esse multitudinem

infinitam in potentia, possibile est. Quia augmentum multitudinis consequitur divisionem magnitudinis, quanto enim aliquid plus dividitur, tanto plura secundum numerum resultant. Unde, sicut infinitum invenitur in potentia in divisione continui, quia proceditur ad materiam, ut supra ostensum est; eadem ratione etiam infinitum invenitur in potentia in additione multitudinis. (STh., I, 7, 4,c.)

I answer that a twofold opinion exists on this subject. Some, as Avicenna and Algazel, said that it was impossible for an actually infinite multitude to exist absolutely; but that an accidentally infinite multitude was not impossible. A multitude is said to be infinite absolutely, when an infinite multitude is necessary that something may exist. Now this is impossible; because it would entail something dependent on an infinity for its existence; and hence its generation could never come to be, because it is impossible to pass through an infinite medium.

A multitude is said to be accidentally infinite when its existence as such is not necessary, but accidental. This can be shown, for example, in the work of a carpenter requiring a certain absolute multitude; namely, art in the soul, the movement of the hand, and a hammer; and supposing that such things were infinitely multiplied, the carpentering work would never be finished, forasmuch as it would depend on an infinite number of causes. But the multitude of hammers, inasmuch as one may be broken and another used, is an accidental multitude; for it happens by accident that many hammers are used, and it matters little whether one or two, or many are used, or an infinite number, if the work is carried on for an infinite time. In this way they said that there can be an accidentally infinite multitude.

This, however, is impossible; since every kind of multitude must belong to a species of multitude. Now the species of multitude are to be reckoned by the species of numbers. But no species of number is infinite; for every number is multitude measured by one. Hence it is impossible for there to be an actually infinite multitude, either absolute or accidental. Likewise multitude in nature is created; and *everything created is comprehended under some clear intention of the Creator*; for no agent acts aimlessly. Hence everything created must be comprehended in a certain number. Therefore it is impossible for an actually infinite multitude to exist, even accidentally. But a potentially infinite multitude is possible; because the increase of multitude follows upon the division of magnitude; since the more a thing is divided, the greater number of things result. Hence, as the infinite is to be found potentially in the division of the continuous, because we thus approach matter, as was shown in the preceding article, by the same rule, the infinite can be also found potentially in the addition of multitude.¹⁸⁵

To Avicenna's mind, the *actual* existence of infinite multitude is possible. In consequence, it was possible that some individuals existed not correlated to other ones as far as being "contingent". Now, the kinetic proof excludes such a possibility. No matter whence commenced, the way to the Ultimate is certain just because based on physical facts. Everything in the physical world must be essentially connected, whereas to Avicenna's mind,

¹⁸⁵ Summa Theologiae I, q. 7 a. 4, c. *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province)

there might exist some blank spots in it; some existential “blind alleys”. Once blundered in one of them, one is not capable of getting out. If such like “blank spots” had existed, the validity of the proof in question would be nullified.

The problem, however, is not restricted to the supreme science (theory) only. It is the problem of its starting point also; and the problem of human existence in the world in which such like existential snares might be laid. It is the problem of the aforementioned relation of mathematical objects to those physical ones first of all. Generally however, it is the problem of human existence and activity as such, the scientific and the moral alike. It can only develop freely in the world where such like traps can be avoided.

The influence Avicenna exerted upon the West is multi-aspectual. Some believed in that he constructively inspired Thomas too. Thus, an aspect of Thomas’ thought which might be called “existential” happened to be contrasted to the analysis of motion accomplished by Aristotle. Apart from what was natural, something “above” was supposed to complete and round up the Aristotelian system. For if motion existed, some existential realm it can only unfold in would seem to be indispensable. In other words: before motion occurred, things must have existed first. The claim is true as for what exists, but not as for what is being known to exist. It requires some specifying. It requires pointing out distinctly to what is known first. The Leibnizian proof from *contingentia mundi* implied that *a* (cognizant) substance is known first, and the priority of the so called identity principle was stipulated. The principle, however, does not seem to be effective in the cognizance of *the physical* world, which was the case in Leibniz indeed: the substance was the soul. The proof *must be* anthropological by its very nature, whereas the kinetic proof *might be so theoretically and conditionally* only. Moreover, the contingent is normally *defined* as opposed to the necessary, and thus cannot be used in the premise of the proof. That things are contingent is *a conclusion*, not *a premise* of the demonstration of the existence of God. Otherwise a vicious circle in the demonstration will occur.

There is no opposition of the Thomasian metaphysics (of being) and the Aristotelian one (of nature). The metaphysics of the kinetic proof is just more precise in Thomas than in Aristotle. For if the moving and the moved are intertwined in the physical world, they can only be so from without; from a Cause that renders them real and existent.

It is nonsensical to suppose that things are so radically contingent that their actions should be so too; e.g. the relation of a father to the son is incidental. Should it be the case, morals, science, art and everything that demands a definite order of objects would be nullified. Thus, the problem of Avicenna’s bequest shows up to be not the problem of metaphysics only. That metaphysics was affected worst was but a *token* that the entire human rationality was affected first. That the utmost of the human intellectual aspirations was tried to be denounced affected the human intellectual nature as such. It affected human existence, because the “existential realm” mentioned above was about to be interpreted in terms of sheer existentialism. Thomas interpreted it in a constructive way, avoiding, at the same time, the irrelevance of the Avicennian stance.

Ontologism might have been wrong in assuming that to know anything at all, knowing the Supreme Reality is indispensable. Still, the stance need not be deemed absurd, but

mistaken only and might be shown to stem from both a logical error (fallacia consequentiae) and genuine pursuit of truth (and the reasoning underlying it put aright). It is worth observing that in his *Questiones disputatae* Thomas adduced many objections including sheer logical errors. He does quote them for the sake of impugning the stance of adversaries. Moreover, he never mentions them by name. Apparently, errors, if analyzed constructively, reveal the natural tendency to knowing the objective truth. This tendency was so natural and common than the names of who followed it might have been omitted. In the matter at hand, the positive statement implied reads that in case the cognizance of the Supreme Reality is actually precluded and forbidden, the cognizance as such (the cognizance of no matter what objects) must be ultimately fatally affected too. In other words: attacking the validity of the necessary cognition of the Supreme Reality results in attacking implicitly all guises of rationality also. Human existence would cease to be fully rational. The existence of God might be doubted by some who try to extricate themselves from some existential traps. But precluding the very possibility to extricate therefrom is irrational and degrading human nature. Thomas' openness of mind is sharply contrasted with the Kantian apriorism.

The relation of what Kant called the cosmological proof of the existence of God to scientific laws in general is the main topic of the *Critique of Pure Reason*. The way Kant "defends" science is worth reflecting on.

[The] cosmological argument contains a perfect nest of dialectical assumptions, which transcendental criticism does not find it difficult to expose and to dissipate. ... The following fallacies, for example, are discoverable in this mode of proof: ... 2. "*From the impossibility of an infinite ascending series of causes in the world of sense a first cause is inferred*"; a conclusion which the principles of the employment of reason do not justify even in the sphere of experience, and still less when an attempt is made to pass the limits of this sphere. (A 609; B 637- A 610; B 638).¹⁸⁶

It is visible that the validity of the proof attacked by Kant should (to his mind) depend on the (incriminated by him) idea of the finite series of agents possibly existing in the world only. The possibility of the infinite series was (to Kant's mind) not to be discarded. Moreover, the awareness of that possibility must be marked by the same infinity (of degrees). This parallelism of "thinking" and "being" is paradigmatic for those who followed Avicenna. The invalidity of the "cosmological" proof was supposedly consequent upon the (possible) idea of "infinite existents" in the world and of being "conscious of" them existing as such.

According to Kant, "There is ... an infinite series of degrees of consciousness down to its entire disappearance".¹⁸⁷ Although Kant rejects Mendelssohn's idea of "extensive quantity", he espouses the idea of "intensive quantity" nonetheless. The difference between

¹⁸⁶ THE CRITIQUE OF PURE REASON by Immanuel Kant translated by J. M. D. Meiklejohn
SECTION V. Of the Impossibility of a Cosmological Proof of the Existence of God.

<http://www.metaphysicspirit.com/books/The%20Critique%20of%20Pure%20Reason.pdf>

¹⁸⁷ Ibid.

them two is announced in the very title of Mendelssohn's book – "Phaedo". Mendelssohn advocates for the ancient Platonian mathematicism, which allows a causal explanation and a proof of the immortality of the soul (similarly as in the original "Phaedo" written in the 4th century BC). To the contrary, the "intensive" infinity is that Avicennian transcendental one, which excludes such like demonstrations. The so called consciousness allows (to Kant's mind) decreasing monotonically up to nothingness. (The evolutionists would rather reverse the line of reasoning and speak of its emerging mysteriously from the bestial past some thousands years ago). The clarity (used by Mendelssohn as an argument in the proof of the substantiality of the soul) was (as Kant has it) a concept narrower than that of the consciousness. The idea of clarity is especially interesting and will be tackled in the CHAPTER COGNITIO CONFUSA. Let us then just now quote the text of "Critique" addressing the problem.

Clearness is not ... the consciousness of a representation. For a certain degree of consciousness, which may not, however, be sufficient for recollection, is to be met with in many *dim* representations. For without any consciousness at all, we should not be able to recognize any difference in the obscure representations we connect; ... But a representation is *clear*, in which our consciousness is sufficient for the consciousness of the difference of this representation from others. If we are only conscious that there is a difference, but are not conscious of the difference - that is, what the difference is - the representation must be termed obscure. There is, consequently, an infinite series of degrees of consciousness down to its entire disappearance. (B 413-414; op. cit.).¹⁸⁸

Sondern eine Vorstellung ist klar, in der das Bewußtsein zum Bewußtsein des Unterschiedes derselben von andern zureicht. Reicht dieses zwar zur Unterscheidung, aber nicht zum Bewußtsein des Unterschiedes zu, so müßte die Vorstellung noch dunkel genannt werden. Also gibt es unendlich viele Grade des Bewußtseins bis zum Verschwinden. (op. cit.)

The distinction is especially instructive and characteristic of what is essential for Kantianism, viz. apriorism and disregard of the fundamental experience. Really, distinguishing-Unterscheidung is original just because consisting in using the first intellectual principle – the non-contradiction principle, which is fundamental in every human activity properly so called. Concepts cannot be "obscure" if understood (the notion is oxymoronic). Being conscious of having used the first intellectual principle in a particular way, on the other hand, is connected with the reflection proper to the methodology of particular sciences. Distinguishing might be expressed in the Aristotelian term of διαίρησις. Διαίρησις leads to settling any genus methodologicum and is effective as a principle furthering (*transcending actually*) any realm of thinking. But being *transcendental* in the manner Kant devised, is tantamount to being relegated to the sphere of Vernunft where any reflection must be impossible. If Verstand was in Kant proper to science as such, the "idea" of God was relegated from the realm of science

¹⁸⁸ BOOK II. OF THE DIALECTICAL PROCEDURE OF PURE REASON. CHAPTER I. Of the Paralogisms of Pure Reason. Refutation of the Argument of Mendelssohn for the Substantiality or Permanence of the Soul. B 413-414; op. cit.

to the realm of Vernunft. It was so because of the debauched idea of monotonic displacement of the “grades of consciousness” which were supposed to correspond to the objects of “consciousness”. Logical reflections might be multiplied ad infinitum *potentially* only, which, however, is not tantamount to that the first known objects could be so too. The methodical reflection is just one and peremptory.

The methodology proper to a particular science requires settling the boundaries in which a science’s statements are valid in confrontation with the real world. The *Unterscheidung* in general must unfold, but not in the realm of Vernunft severed from Verstand. The general reflection implies using the first principle of distinguishing (of *Unterscheidung*); the principle of non-contradiction. Using it does not allow furthering the reflection ad infinitum (as in Fichte), but requires getting to the definite elementary constituents of the nature world. Normally (in a science) furthering the realm of cognizance might be deemed advancing the correlation of empirical objects in the way Kant described. But on the other hand, the possible scope of the furthering will be only visible if the natural footing of the furthering has been settled first. Now, the use of Vernunft in the way Kant imagined only possible excludes such a possibility. Consequently, the correlation of empirical objects might be broken at any point to the effect of the world appearing “a mysterious place” some modern followers of Kant believe to live in.

The correlation of empirical objects is the leitmotiv of “Critique”. In Kant’s first antinomy, the possibility is addressed that “The world has a beginning in time, and is also limited in regard to space.”

Granted that the world has no beginning in time; up to every given moment of time, an eternity must have elapsed, and therewith passed away an infinite series of successive conditions or states of things in the world. Now the infinity of a series consists in the fact that it never can be completed by means of a successive synthesis. It follows that an infinite series already elapsed is impossible and that, consequently, a beginning of the world is a necessary condition of its existence. And this was the first thing to be proved. Whatever perceptions you may attain to, you are still surrounded by conditions- in space, or in time- and you cannot discover anything unconditioned; nor can you decide whether this unconditioned is to be placed in an absolute beginning of the synthesis, or in an absolute totality of the series without beginning.¹⁸⁹

The Avicennan understanding of “transcendental quantity” is visible in his Remarks to this Antinomy:

The true (transcendental) conception of infinity is: that the successive synthesis of unity in the measurement of a given quantum can never be completed.* Hence it follows, without possibility of mistake, that an eternity of actual successive states up to a given (the present)

¹⁸⁹ BOOK II. OF THE DIALECTICAL PROCEDURE OF PURE REASON. SECTION II. Antithetic of Pure Reason. FIRST CONFLICT OF THE TRANSCENDENTAL IDEAS. THESIS. A 426; B 454; op. cit.

moment cannot have elapsed, and that the world must therefore have a beginning.

*The quantum in this sense contains a congeries of given units, which is greater than any number- and this is the mathematical conception of the infinite.¹⁹⁰

In the second Antinomy, the parts and the whole of this continuum are discussed. The Third Antinomy mentions the relation of sequence seized linearly. What is precedent opened the possibilities (infinite as to their capacity) (A 451; B 479). The Fourth Antinomy addresses the “cosmological” proof. Kant does not admit the possibility of the real existence of the Transcendent Cause, because all causes were “immanent” by their nature. i.e. crammed into the matrix devised a priori.

... if we begin our proof cosmologically, by laying at the foundation of it the series of phenomena, and the regress in it according to empirical laws of causality, we are not at liberty to break off from this mode of demonstration and to pass over to something which is not itself a member of the series. The condition must be taken in exactly the same signification as the relation of the conditioned to its condition in the series has been taken, for the series must conduct us in an unbroken regress to this supreme condition.¹⁹¹

It is quaint indeed that “conditions” are mentioned in this context as if human experience equaled generating the boundary conditions of experimenting. In consequence, what Kant really proves is that God cannot be an Experimenter on a cosmic scale; for there is not distinct border within consciousness proper to man and God. True, “if we begin our proof” in the way proposed, we must come to the conclusions Kant gathered. But the problem is that *we do not need* to “begin” the proof by enclosing ourselves in the world of phenomena. Otherwise the consequence will be that:

A whole, in the empirical signification of the term, is always merely comparative. The absolute whole of quantity (the universe), of division, of derivation, of the condition of existence, with the question - whether it is to be produced by finite or infinite synthesis, no possible experience can instruct us concerning. You will not, for example, be able to explain the phenomena of a body in the least degree better, whether you believe it to consist of simple, or of composite parts; for a simple phenomenon - and just as little an infinite series of composition - can never be presented to your perception. Phenomena require and admit of explanation, only in so far as the conditions of that explanation are given in perception; but the sum total of that which is given in phenomena, considered as an absolute whole, is itself a perception - and we cannot therefore seek for explanations of this whole beyond itself, in other perceptions. The explanation of this whole is the proper object of the transcendental problems of pure reason.¹⁹²

¹⁹⁰ Ibid.

¹⁹¹ Ibid.

¹⁹² BOOK II. OF THE DIALECTICAL PROCEDURE OF PURE REASON. SECTION II. Antithetic of Pure Reason. FIRST CONFLICT OF THE TRANSCENDENTAL IDEAS. SECTION IV. Of the necessity imposed upon Pure Reason of presenting a Solution of its Transcendental Problems. A 483; B 511- A 484; B 512; op. cit.

Let us underscore the words testifying to the transcendental mathematicism espoused by Kant:

Das absolute *All der Größe* (das Weltall), der *Teilung*, der Abstammung, der *Bedingung* des Daseins überhaupt, mit allen Fragen, ob es durch endliche, oder ins Unendliche *fortzusetzende Synthesis* zu Stande zu bringen sei, gehet keine mögliche Erfahrung etwas an. [...] Die Erscheinungen verlangen nur erklärt zu werden, so weit ihre Erklärungsbedingungen in der Wahrnehmung gegeben sind, alles aber, was jemals an ihnen gegeben werden mag, in einem *absoluten Ganzen zusammengekommen*, ist selbst eine Wahrnehmung. Dieses All aber ist es eigentlich, dessen Erklärung in den transzendentalen Vernunftaufgaben gefodert wird. (op.cit)

The consequence is that the world becomes a mysterious place, full of existential traps mentioned above. It might have been not admitted openly, but the conclusion seems to be inevitable.

Many physical powers, which evidence their existence by their effects, *are perfectly inscrutable in their nature*; they *elude all our powers of observation*. The transcendental object which forms the basis of phenomena, and, in connection with it, the reason why our sensibility possesses this rather than that particular kind of conditions, are and *must ever remain hidden from our mental vision*; the fact is there, the reason of the fact we cannot see. But an ideal of pure reason cannot be termed *mysterious or inscrutable*, because the only credential of its reality is the need of it felt by reason, for the purpose of giving completeness to the world of synthetical unity. An ideal is not even given as a cogitable object, and therefore cannot be inscrutable; on the contrary, it must, as a mere idea, be based on the constitution of reason itself, and on this account must be capable of explanation and solution. For the very essence of reason consists in its ability to give an account, of all our conceptions, opinions, and assertions- upon objective, or, when they happen to be illusory and fallacious, upon subjective grounds. (A 613; B 637 – A 614 – B 642).¹⁹³

Kant's idiosyncrasy towards metaphysics manifests itself in using (disparagingly) the term of theology in addressing the possibility of a rational proof of the existence of God. In fact, *scientia divina* (θεολογική) in Aristotle can be understood either subjectively (as God's knowledge) or objectively (a science considering God). The distinction, as was said above, was blurred by Kant; for "consciousness" is as vague as allowing both diminishing and growing ad infinitum. The actual cognition unfolded in between the A point when "consciousness" appeared on the earth the Ω point (the absolute and idealized cognition allotted to God). The scheme is readily imaginable, because any spell of time might be imagined to be divisible like quantity is, but is completely at odds with the fundamental experience in which no quantity (nor any matrix of cognition for that matter too) is given *directly*. The matrix (if the term be granted) is that of methodology and secondary to primitive cognition.

¹⁹³ Ibid.

True, Thomas' *Summa Theologiae* (where the concise form of the proof is to be found) is the work of a theologian. Thomas regards the problem from a privileged (and begrudged by Kant) coign of vantage – *sub specie aeternitatis*. Thomas speaks of *the intention of Creator* and the mode things proceed from God. However, the same problem might be reworded as the problem of how things *tend towards* the Ultimate and how they are *related* to God. In other words: the same question might be tackled with purely philosophical tools. Aristotle speaks of *the intention of nature* and the relation between the world and God is analyzed departing from physical facts. In the apprehension of the human intellect, the finality of God's actions need not be the same as the finality of nature, albeit in reality both kinds of purposeful actions overlap. By the very fact of His acts affecting the core of nature, God cannot be called a Great Mathematician; the ideas He has in mind when realizing the rational plan of the universe affect the inner structure of things, contrary to what an experimenter is able to do. There is *a finality* in experimenting no doubt. But the matter is not affected by it. To the contrary, the prime matter of Aristotle is teleologically oriented towards proper forms and makes up an element of the factual world we live in. Experience people are able to gain is no experimenting. The abstract notions do not "mirror" the reality (as mathematical entities might be believed to). Nor can they be coextensive to objects as Kant implies when tackling the problem of the infinite series. Human fundamental attitude towards the *crude* nature can be only theoretical (not mediated by the matrix stemming from the transcendental Vernunft), and the experience must be connected with *abstracting* the common notions. Kant's "mental vision" (A 613; B 637 – A 614 – B 642) is the vision of phenomena severed as masterfully as pragmatically needed. The fragmentation of the causal correlation of natural objects leads to rejection of the proof of the existence of God. The former might have been intended for the sake the latter, but we must remain in dark as to Kant's personal motives. However, what is *absolutely certain* is that the conclusions gathered by Kant are deadly to science in general.

The line of reasoning Kant adopted was anticipated by Avicenna and testifies to the influence the Arab philosophy exerted upon the so called "modern" Europe. Thomas recalls Avicenna's objections against the validity of the kinetic proof.

Nec obviat huic rationi quod forte aliquis posset dicere quod eius quod ponitur movere seipsum, pars non potest quiescere; et iterum quod partis non est quiescere vel moveri nisi per accidens; ut Avicenna calumniatur [...] (Contra Gentiles, lib. 1 cap. 13 n. 7).

Nor is it an objection to this argument if one might say that, when something is held to move itself, a part of it cannot be at rest; or, again, if one might say *that a part is not subject to rest or motion except accidentally*, which is the unfounded argument of Avicenna.¹⁹⁴

This disdain for "facts" (especially for scientific facts) and the laws of nature was bequeathed

¹⁹⁴ CONTRA GENTILES, BOOK ONE: GOD, Chapter 13, ARGUMENTS IN PROOF OF THE EXISTENCE OF GOD translated by Anton C. Pegis.

<https://dhspriority.org/thomas/ContraGentiles1.htm>

to modernity via the late scholasticism. Scotus in his “Treaty on the First Principle” states that he favors demonstrations from what is “possible” to those which deal with “facts”. The latter were denounced as “pagan” and the statement is true in a sense. The Aristotelian proof is “pagan” if regarded according to the time it was formed. But there is no essential difference to the actual state of the modern humanity. Not only atheism is meant. At bottom, we are all “pagans” in a sense, as our intellect can never become “supernatural” as dreamt of by Avicenna and his successors. Moreover, heathendom becomes part of the modern thinking. More and more vast swathes of contemporary existence are being devoted to some “gods” called with different names: as many as many “existential traps” have been laid. The facts are to be put up with. The fact that the present book has been written is part of the same modern factuality too. There is heathendom in each of us. There are, at the same time, nagging questions to be answered; the reasoning, being at core theoretical, must result in an act of solidarity with those ruthlessly bereft of hope and the sense of existence. Being marginalized adds up to being relegated to those “blank spots” despaired to be rationally fathomed.

Some realms of existence might be unknown *for some time* indeed. However, by the very fact of being endowed with personal dimension, scientific progress allows these realms to be enlightened in the personal act of cognition (abstraction). In Protrepticus, Aristotle compares the philosopher to the mythical Linkeus, who saw objects through walls; non-transparent objects. In fact, images (phenomena) might be such objects. But they can be enlightened too and in different aspects according to the diversity of the modes the human rationality happens to be realized. Mathematics is just one type of human rationality. For all its being so exact and its achievements commanding, it cannot exclude other types of rationality, which can only boost it, but never impair.

Some obstacles in the cognizance of the outer world can be faced, no doubt. In Phaedo, Plato describes his (most probably) own way to philosophy. Bold speculations of Anaxagoras had led him (either in spite of being bold or because of them being excessively so) to the brink of despairing in natural cognitive abilities of humans. Plato coins a neologism there. *Misology* is the hate for reason and might befall those strayed from the safe way of the cognizance of causes (98 BC; 99 DE; 89 CDE; 90 CDE). This experience is (paradoxically) indissolubly connected with rationalism. The case of Pascal is iconic. Pascal was a learned mathematician and physicist, but the problem was that he refused (wholeheartedly) to be anything else. He saw no other possibly to get to know the universe than that allowed by exact sciences. All guises of irrationalism go, over the centuries, hand in hand with rationalism. The cause is the reductionism of mathematicism.

Avicenna claims that it is impossible to prove (demonstrate) the existence of God. Instead, humans had some “manifest signs” of His existence (*signa manifesta*; VIII c. 5, 411, 42-45; c. 4, 403, 70-71; IX c. 1, 434, 3-5; I c. 1, 5, 78-79).¹⁹⁵ Jaspers calls them the cyphers of Transcendence. The problem is that the cognizance through signs cannot satisfy natural intellectual aspirations of man. The historical man beguiled by the “transcendental idea” devised by Kant (a sign sui generis) would try his utmost in attaining the Transcendent. But

¹⁹⁵ Avicenna Latinus, *Liber de philosophia prima sive scientia divina*, ed. S. van Riet, Introduction doctrinale par G. Verbeke, Louvain-Leiden (t. I – III) 1977 – 1983.

Lessing favored the trying to the attaining already. The idea proved to be bogus and the despair in human existential possibilities was a natural consequence. It might have been called a triumph of humanity, albeit it sounds of bitter irony. In fact, “humanity” was idealized to the detriment of real humans, i.e. persons (hyposases of the classical philosophy) endowed with individual intellects. There must be substances (hyposases) the relations are founded on. Cognition is a relation. It must lead to something definite and must be accomplished by a definite subject also. Even if some signs of God’s existence occur, they must be tried and reduced to some definite abstract notions. Ideas, on the other hand, must be a kind of a poor tender: they are likely to devaluate and proportionally to how frequently and irresponsibly they happen to be used. The fact, on the other hand, cannot justify the objections as to settling peremptorily the nature of relations between the universe and God. The task might be *subjectively* difficult, but no one has right to exteriorize his/her own problems so as to make the other complicit in them. The existential experience of God (whatever the meaning of the word) is by no means impaired by grasping it in definite notions. What might be impaired only is the vagueness and irresponsibility of the subjective experience.

Speaking of the subjective aspect of the experience of God’s presence in the world we face the problem of the so called anthropological proof of the existence of God. Can it be interpreted in such terms that it might be juxtaposed to the kinetic proof? The question adds up whether human mind’s actions are any similar to motions of the physical objects.

According to Thomas, God acts in the physical world and the human mind alike. The problem is, however, how to reconcile human liberty with this omnipotence of God (His actions being unconditionally present in all things created by Him).

De potentia, q. 3 a. 7 c. Non ergo sic est intelligendum quod Deus in omni re naturali operetur, quasi res naturalis nihil operetur; sed quia in ipsa natura vel voluntate operante Deus operatur: quod quidem qualiter intelligi possit, ostendendum est.

Hence we are to understand that God works in every natural thing not as though the natural thing were altogether inert, but because God works in both nature and will when they work. How this may be we must now explain.¹⁹⁶

Respondeo. Dicendum, quod simpliciter concedendum est Deum operari in natura et voluntate operantibus. Sed quidam hoc non intelligentes, in errorem inciderunt: attribuentes Deo hoc modo omnem naturae operationem quod res penitus naturalis nihil ageret per virtutem propriam; et ad hoc quidem ponendum sunt diversis rationibus moti. Quidam enim loquentes in lege Maurorum, ut Rabbi Moyses narrat, dixerunt, omnes huiusmodi naturales formas

¹⁹⁶ QUAESTIONES DISPUTATAE DE POTENTIA DEI; ON THE POWER OF GOD by

Thomas Aquinas translated by the English Dominican Fathers Westminster, Maryland: The Newman Press, 1952, reprint of 1932

Html edition by Joseph Kenny, O.P.

<https://dhspriority.org/thomas/QDdePotentia.htm>

accidentia esse: et cum accidens in aliud subiectum transire non possit, impossibile reputabant quod res naturalis per formam suam aliquo modo induceret similem formam in alio subiecto; unde dicebant quod ignis non calefacit, sed Deus creat calorem in re calefacta. Sed si obiiceretur contra eos, quod ex applicatione ignis ad calefactibile, semper sequatur calefactio, nisi per accidens esset aliquid impedimentum igni, quod ostendit ignem esse causam caloris per se; dicebant, quod Deus ita statuit ut iste cursus servaretur in rebus, quod nunquam ipse calorem causaret nisi appposito igne; non quod ignis appositus aliquid ad calefactionem faceret. Haec autem positio est manifeste repugnans sensui: nam cum sensus non sentiat nisi per hoc quod a sensibili patitur (quod etsi in visu sit dubium, propter eos qui visum extra mittendo fieri dicunt, in tactu et in aliis sensibus est manifestum), sequitur quod homo non sentiat calorem ignis si per ignem agentem non sit similitudo caloris ignis in organo sentiendi. Si enim illa species caloris in organo ab alio agente fieret, tactus etsi sentiret calorem, non tamen sentiret calorem ignis nec sentiret ignem esse calidum, cum tamen hoc iudicet sensus, cuius iudicium in proprio sensibili non errat.

Repugnat etiam rationi, per quam ostenditur in rebus naturalibus nihil esse frustra. Nisi autem res naturales aliquid agerent, frustra essent eis formae et virtutes naturales collatae: sicut si cultellus non incideret, frustra haberet acumen. Frustra etiam requireretur appositio ignis ad ligna, si Deus absque igne ligna combureret.

Repugnat etiam divinae bonitati, quae sui communicativa est; ex quo factum est quod res Deo similes fierent non solum in esse, sed etiam in agere.

Ratio vero quam pro se inducunt, est omnino frivola. Nam cum dicitur accidens de subiecto in subiectum aliud non transire, intelligitur de accidente eodem secundum numerum, non quia simile accidens secundum speciem possit induci in aliud subiectum virtute accidentis quod alicui subiecto naturali inest. Et hoc est necesse in omni actione naturali contingere. Falsum etiam est quod supponunt, omnes formas esse accidentia: quia sic nullum esset in rebus naturalibus esse substantiale, cuius principium forma accidentalis esse non potest, sed substantialis tantum. Periret etiam generatio et corruptio, et multa alia inconvenientia sequerentur.

I answer that we must admit without any qualification that God operates in the operations of nature and will. Some, however, through failing to understand this aright fell into error, and ascribed to God every operation of nature in the sense that nature does nothing at all by its own power. They were led to hold this opinion by various arguments. Thus according to Rabbi Moses some of the sages in the Moorish books of law asserted that all these natural forms are accidents, and since an accident cannot pass from one subject to another, they deemed it impossible for a natural agent by its form to produce in any way a similar form in another subject, and consequently they said that fire does not heat but God creates heat in that which is made hot. And if it were objected to them, that a thing becomes hot whenever it is placed near the fire, unless some obstacle be in the way, which shows that fire is the *per se* cause of heat; they replied that God established the order to be observed according to which he would never cause heat except at the presence of fire: and that the fire itself would have no part in the action of heating. This opinion, is manifestly opposed to the nature of sensation: for since the senses do not perceive unless they are acted upon by the sensible object—which is clearly true in regard to touch and the other senses except sight, since some maintain that this is effected by the visual organ projecting itself on to the object—it would follow that a man does not feel the fire's heat, if the action of the fire does not produce in the sensorial organ a likeness of the

heat that is in the fire. In fact if this heat-species be produced in the organ by another agent, although the touch would sense the heat, it would not sense the heat of the fire, nor would it perceive that the fire is hot, and yet the sense judges this to be the case, and the senses do not err about their proper object.

It is also opposed to reason which convinces us that nothing in nature is void of purpose. Now unless natural things had an action of their own the forms and forces with which they are endowed would be to no purpose; thus if a knife does not cut, its sharpness is useless. It would also be useless to set fire to the coal, if God ignites the coal without fire.

It is also opposed to God's goodness which is self-communicative: the result being that things were made like God not only in being but also in acting.

The argument which they put forward is altogether frivolous. When we say that an accident does not pass from one subject to another, this refers to the same identical accident, and we do not deny that an accident subjected in a natural thing can produce an accident of like species in another subject: indeed this happens of necessity in every natural action. Moreover, they suppose that all forms are accidents, and this is not true: because then in natural things there would be no substantial being, the principle of which cannot be an accidental but only a substantial form. Moreover, this would make an end of generation and corruption: and many other absurdities would follow.¹⁹⁷

We might now try and interpret Avicenna's and Kant's stance. The formalism of them both consists in assuming that all things are – as it were – *Primomota* in a radical sense of the word. Let us remind: *Primomota* are living beings (*substrata*) and exempted from the *direct* reasoning of the kinetic proof. *Primomota* are *relatively* autonomous sources of motion. Moreover, the *substrata* in which life manifests itself most prominently are *Primomota* in the full sense of the word. The intellectual and volitional life is meant. This life would be, over centuries, tried to be separated from the physical world in many ways; as many as many are forms of the philosophy of subject. Especially, consciousness was radically opposed to reality. It seems behooving then to try and analyze the vital actions of *Primomota* and express them in the general (analogical) terms of motion. It is the general law of nature that a system (substance) produces the same amount of energy as accepted from the environment. *Everything is moved by something else*. In the case of “ordinary” *substrata*, the action and reaction are almost mechanical (albeit not as symmetrical as postulated in the third law of Newtonian mechanics, because the objects of the law are idealized). Now, in *Primomota* the energy undergoes a certain transformation, which makes this general law less perceptible. Consciousness might be even believed to be totality autonomous and a “god” in a sense. Now, according to Thomas, both intellection and will stem from the same Source of energy as all physical things do. Thus, we can speak of the operation of the intellect, which, however, can be called motion analogically only, as it unfolds (contrary to ordinary motions) in time accidentally only.

Summa Theologiae II-II, q. 180 a. 6 c. Respondeo dicendum quod, sicut supra dictum est, operatio intellectus, in qua contemplatio essentialiter consistit, motus dicitur secundum quod

¹⁹⁷ Ibid.

motus est actus perfecti, ut philosophus dicit, in III de anima. Quia enim per sensibilia in cognitionem intelligibilium devenimus, operationes autem sensibiles sine motu non fiunt, inde est quod etiam operationes intelligibiles quasi motus quidam describuntur, et secundum similitudinem diversorum motuum earum differentia assignatur. In motibus autem corporalibus perfectiores et primi sunt locales, ut probatur in VIII Physic. Et ideo sub eorum similitudine potissime operationes intelligibiles describuntur.

As stated above (II-II:119:1 ad 3), the operation of the intellect, wherein contemplation essentially consists, is called a movement, in so far as movement is the act of a perfect thing, according to the Philosopher (De Anima iii, 1). Since, however, it is through sensible objects that we come to the knowledge of intelligible things, and since sensible operations do not take place without movement, the result is that even intelligible operations are described as movements, and are differentiated in likeness to various movements. Now of bodily movements, local movements are the most perfect and come first, as proved in Phys. viii, 7; wherefore the foremost among intelligible operations are described by being likened to them.¹⁹⁸

Similarly, the action of the will is actualized by the influence of the First Cause of cosmic energy.

Contra Gentiles, lib. 3 cap. 89 n. 7. Superius est ostensum quod Deus est causa omnis actionis, et operatur in omni agente. Est igitur causa motuum voluntatis.

Furthermore, we showed somewhat earlier that God is the cause of every action and that He operates in every agent. Therefore, He is the cause of the movements of the will.¹⁹⁹

Still, the action of the First Cause does not impair in the least the efficacy of natural causes. The problem if seized in terms of *the extension* of both sources of motion (in mathematical terms) seems insolvable. But, as was said above, the natural unity is different to the mathematical one. The natural actions happen to be integrated according to how much they approach the First Cause.

De veritate, q. 22 a. 2 co. Et ideo, sicut secundarium agens non agit nisi per virtutem primi agentis in eo existentem, ita secundarius finis non appetitur nisi per virtutem finis principalis in eo existentem: prout scilicet est ordinatum in illud, vel habet similitudinem eius. Et ideo, sicut Deus, propter hoc quod est primum efficiens, agit in omni agente, ita propter hoc quod

¹⁹⁸ *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province.

<http://www.newadvent.org/summa/>

¹⁹⁹ CONTRA GENTILES, BOOK THREE: PROVIDENCE, Part II: Chapters 84-163, translated by Vernon J. Bourke.

<https://dhspriry.org/thomas/ContraGentiles3b.htm#89>

est ultimus finis, appetitur in omni fine. Sed hoc est appetere ipsum Deum implicite).

Dicendum, quod omnia naturaliter appetunt Deum implicite, non autem explicite. Ad cuius evidentiam sciendum est, quod secundaria causa non potest influere in suum effectum nisi in quantum recipit virtutem primae causae. Sicut autem influere causae efficientis est agere, ita influere causae finalis est appeti et desiderari. Et ideo, sicut secundarium agens non agit nisi per virtutem primi agentis in eo existentem, ita secundarius finis non appetitur nisi per virtutem finis principalis in eo existentem: prout scilicet est ordinatum in illud, vel habet similitudinem eius.

Et ideo, sicut Deus, propter hoc quod est primum efficiens, agit in omni agente, ita propter hoc quod est ultimus finis, appetitur in omni fine. Sed hoc est appetere ipsum Deum implicite. Sic enim virtus primae causae est in secunda, ut etiam principia in conclusionibus; resolvere autem conclusiones in principia, vel secundas causas in primas, est tantum modo virtutis rationalis. Unde solum rationalis natura potest secundarios fines in ipsum Deum per quamdam viam resolutionis deducere, ut sic ipsum Deum explicite appetat. Et sicut in demonstrativis scientiis non recte scitur conclusio nisi per resolutionem in prima principia, ita appetitus creaturae rationalis non est rectus nisi per appetitum explicitum ipsius Dei, actu vel habitu.

All things naturally tend to God implicitly, but not explicitly. That this may appear clearly it should be observed that a secondary cause can influence its effect only in so far as it receives the power of the first cause. The influence of an efficient cause is to act; that of a final cause is to be sought or desired. A secondary agent acts only by the efficacy of the first agent existing in it; similarly a secondary end is sought only by reason of the worth of the principal end existing in it inasmuch as it is subordinated to the principal end or has its likeness.

Accordingly, because God is the last end, He is sought in every end, just as, because He is the first efficient cause, He acts in every agent. But this is what tending to God implicitly, means. For the efficacy of the first cause is in the second as the principles of reasoning are in the conclusions. But to reduce conclusions to their principles or secondary causes to their first causes belongs only to the power of reasoning. Hence only a rational nature can trace secondary ends back to God by a sort of analytic procedure so as to seek God Himself explicitly. In demonstrative sciences a conclusion is correctly drawn only by a reduction to first principles. In the same way the appetite of a rational creature is correctly directed only by an explicit appetitive tendency to God, either actual or habitual.²⁰⁰

The conviction that God leaves an “empty space” for the human will to act (which might lead to deism) is similar to Democritus’ assumption that motion could only occur in the void (whereas, in fact, it cannot exist save in the gravitational or electromagnetic field). Still, the modern “atomism” is rather an heir to that of the Arab Asharites. God was as powerful as to annihilate the power of creatures. In Sartre, the stance is simply reversed: Man must be so free that the existence of God would threaten his/her liberty. Both assumptions are naïve, as in fact humans are free (inwardly intergraded) to the degree they tend towards the First Being. The

²⁰⁰ Questiones Disputatae de Veritate, TRUTH by Thomas Aquinas Questions 10-20 translated by James V. McGlynn, S.J. Chicago: Henry Regnery Company, 1953
<https://dhspriority.org/thomas/QDdeVer22.htm>

anthropological proof of the existence of God, if possible at all, must take the fact into account.

De veritate, q. 6 a. 3 ad 3. Sed Deus agit in voluntate non per modum necessitatis, quia voluntatem non cogit, sed movet eam non auferendo ei modum suum, qui in libertate ad utrumlibet consistit: et ideo, quamvis nihil divinae voluntati resistat, tamen voluntas, et quaelibet alia res, exequitur divinam voluntatem secundum modum suum, quia et ipsum modum divina voluntas rebus dedit, ut sic eius voluntas impleretur; et ideo quaedam explent divinam voluntatem necessario, quaedam vero contingenter, quamvis illud quod Deus vult, semper fiat.

A celestial body, taken in itself, imposes a kind of determinism in its action on bodies here below. Consequently, its effect necessarily takes place, unless something resists it. But God does not act on the will in the manner of one necessitating; for He does not force the will but merely moves it, without taking away its own proper mode, which consists in being free with respect to opposites. Consequently, even though nothing can resist the divine will, our will, like everything else, carries out the divine will according to its own proper mode. Indeed, the divine will has given things their mode of being in order that His will be fulfilled. Therefore, some things fulfill the divine will necessarily, other things, contingently; but that which God wills always takes place.²⁰¹

Summa Theologiae I, q. 105 a. 5 c. omnia agunt in virtute ipsius Dei; et ita ipse est causa actionum omnium agentium.(...) Deus movet non solum res ad operandum, quasi applicando formas et virtutes rerum ad operationem, sicut etiam artifex applicat securim ad scindendum, qui tamen interdum formam securi non tribuit; sed etiam dat formam creaturis agentibus, et eas tenet in esse. Unde non solum est causa actionum inquantum dat formam quae est principium actionis, sicut generans dicitur esse causa motus gravium et levium; sed etiam sicut conservans formas et virtutes rerum; prout sol dicitur esse causa manifestationis colorum, inquantum dat et conservat lumen, quo manifestantur colores.

And thus all agents act in virtue of God Himself: and therefore He is the cause of action in every agent.

... we must observe that God not only moves things to operated, as it were applying their forms and powers to operation, just as the workman applies the axe to cut, who nevertheless at times does not give the axe its form; but He also gives created agents their forms and preserves them in being. Therefore He is the cause of action not only by giving the form which is the principle of action, as the generator is said to be the cause of movement in things heavy and light; but also as preserving the forms and powers of things; just as the sun is said to be the cause of the manifestation of colors, inasmuch as it gives and preserves the light by which colors are made manifest. And since the form of a thing is within the thing, and all the more,

²⁰¹ Questiones Disputatae de Veritate, TRUTH by Thomas Aquinas Questions 1-9 translated by Robert W. Mulligan, S.J. Chicago: Henry Regnery Company, 1952
<https://dhspriority.org/thomas/QDdeVer6.htm#3>

as it approaches nearer to the First and Universal Cause; and because in all things God Himself is properly the cause of universal being which is innermost in all things; it follows that in all things God works intimately.²⁰²

However, it seems to be plain that the rationality of human actions differs from that of natural processes. The optimism of rationalists bade them to overestimate the former and underappreciate the latter. The most radical form of it occurs in Hegel. He denied the substantiality of the physical world independent of the “consciousness”. The Hegelian “god” was identified with the collective human psyche. In the 20th century, the heirs to the tradition of the German idealism showed practically the face of this “god”.

Still, Hegel’s undeniable merit was that he pointed out to a unique *fact*: nowhere besides the immediate influence of the West, what is normally called progress, occurred. The separate problem was whether the driving force of the progress of the Western Civilization had been assessed adequately. The nature and the cause of the progress are to be defined. Both terms, however, are not very much to the taste of the advocates of the phenomenology (of Spirit or of the human spirit). But the question whence the very phenomena stem is unavoidable. If they are what they must be, they are *appearances* of something definite, i.e. substances.

Another fact is to be enhanced besides. The fact that after Hegel the history took on quite unrespectable turn instead of “ending” as Hegel promised. The “end of the history” is, practically, the end of *some spell* of the history; is tantamount to the end of some traditional form of the Civilization. The fact need not be assessed with optimism. Spengler and Eduard von Hartmann were far from being optimists.

The facts are to be given the adequate explanation. The existential experience which motivated (as Kant has it) the progress is, in fact, a motion (a vital one). The anthropological proof of the existence of God (if possible at all) must account for the nature of the driving force acting behind the scene of the history. By the parity of reasoning, the despair and prostration; the characteristic marks of the contemporary existence, the sings of frustration of this vital motion, must be assessed similarly. There is the most formal in the history, viz. the human intellect; and there is the most formal *transcendent* being, viz. the Pure Being. Both types of formality might overlap as far as the real fullness of being (the plenitude of life) is realized and the human freedom actuated by God (these two causes do not exclude each other). Kant was wrong in assessing the problem in *purely* formal terms, because the formality of God’s acting cannot be compared to the formality of human acting. The two realms are not coextensive, nor possibly “competing” (as in Sartre). “Competing” might be only imagined in terms of extending one’s rights at the expense of the others.

The nature of man’s existing in the world must not be assessed in terms of the philosophy of subject. In it, what is responsible for this existence was not pointed out

²⁰² *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province.

distinctly enough. If the Western Civilization marked an astonishing progress in commanding the nature, it succeeded too in humiliating the same nature (the nature of man in particular) to the degree never expected or anticipated. No matter whether phenomena are tried to be analyzed or the proper name of relations (relatives) imposed to them, they must be accounted for in causal terms; the source they stem from must be shown. Practically, denying the validity of the First Source resulted in humiliating the efficacy of the proximate sources: the human will and the intellect. These sources cannot be degraded to the status of “ideas”. Historically, all ideas proved to be bogus. No idea can motivate human intellect and the will. They both are as real as natural objects are and can be moved by natural (i.e. definite) agents only. The phenomenology of spirit (or whatever the like) is but a sign that such a vital motion really occurs.

Contrary to what Avicenna and his successors claim, all things in the physical world must be interconnected. They are not similar to points and mathematical abstracts allowing the infinity amongst them to appear. The continuity of the moving and the moved is not the continuity of sets, points and lines. Material things might *appear* to be disconnected, and the existential experience of what is most important in the human life tinged with despair, anxiety and despondency. To the extent the existential experience is affected in such a way by the irrational in man, it must be purified. Human life might well resemble a rhapsody of disconnected events, but the fact is deplorable after all. Weakness is to be cured not to be pampered.

The “logical atomism” of Wittgenstein and Asharites cannot be proved. All things (just because being factual) are mutually connected. The argumentation of the kinetic proof is based on the fact.

The only universal imperative of the human life is that of the continuation to the First Cause of the world. This Cause triggers both the motion of natural things and the vital human activity.

The problem of continuity was tackled by Bergson. *Élan vital* was devised as a remedy for fragmentation of human life accomplished by scientism. The problem was spotted by Bergson no doubt, but there was nothing to support *this* continuity. Continuity can only be supported by real substrata – substances, as all relations must be sustained by something so as to exist at all.

The same holds true as to the theory of evolution. There is *an* evolution in the world, no doubt. But that it might exist at all, *immutable* substances and species must exist first. Granted the validity of what should be called evolution, the problem of the primacy of being must be posed nevertheless. What is prior according to being: the continuity or what sustains it? A line on a sheet of paper is what it is apart from being drawn *on this* sheet of paper, but only as to its abstract meaning.

Granted the validity of the aforementioned continuity, the problem of what is *experienced* first appears to be unavoidable also. Motion is *a* continuity. Still, the phenomenon in its naked appearance is elusive as the testimony of the ancient philosophy testified already. Motion might be deemed incomprehensible; nay, even non-being.²⁰³ If

²⁰³ Aristotle, Physics, II, Ch. 2; 201b – 202a.

anything is grasped at all (and the problem of evolution is grasped for that matter also), it is only due to what is opposite to it, i.e. definite and immovable. That a process be made out, some definite objects within it must be seen.

The Aristotelian *intentio naturae* (assessed by Thomas as the subject matter of metaphysics) accounts for the rational structure of what is experienced. The human history might be “intentional” and teleologically oriented too. Still, its continuity can only be substantiated by the activity of individual persons acting rationally and with responsibility, i.e. in the relation to the ultimate end of the world.

The void places in the human life might occur, no doubt. However, the general principle consists in eliminating them and obtaining the inner integration in the continuation to the First Cause.

10. Experiencing God’s absence

It is sometimes assumed that humans can experience God’s presence in the universe or at least in their inner life. Had it been the case (and the way to make the experience universally reproducible shown), the proof of the existence of God would be superfluous, as the experience is directly opposed to the demonstration. The obvious difficulty connected with the possibility to experience God consists in that it seems to be incommunicable by natural means, whereas the demonstration must be as communicable as no other things or human goods in general possibly can. The communicability makes for the very essence of the demonstration of the existence of God and its being the common good. The separate problem is that of what surpasses the natural order of cognition. No one ought to be disbelieved when claiming experiencing God’s presence besides the natural course of events. No one, however, can claim that experience to be universally sharable. In fact, it is rather as personal as no other one can possibly be.

The starting point of the demonstration is, however, incommunicable indeed. It is an experience of the primitive (and possibly problematized) order of the universe; an experience private as privately witnessed and subjective as fostered by the human rational subject. The demonstration that follows must be its opposite nonetheless, as the primitive in question is connected rather with the potentiality of the human intellect and requires some complement.

The primitive experience is both counterbalanced and opposed by the minor premise of the proof. There is no ultimate cause in the chain of the *natural* agents, but *besides* it only. Should the very word of experience be used here, it will be the experience of the absence of God in what appears to be unsatisfying the natural human need for intellectual plenitude. There is a privation inherent in nature. The privation can be given its proper name (as it is the case in the minor premise of the demonstration) but can be also experienced and witnessed personally; i.e. not grasped thematically.

This notion of experiencing chimes in with what is normally associated with every day experience. Apparently, humans experience stronger someone’s absence after his/her passing

away than the presence of a person which happens to be taken for granted. There is an analogy in the way people experience God. Of course, speaking of God's death in this context is absurd. But there is nothing inconvenient in stating that humans experience various privations (and approach death everywhere they had to live, according to the ancient: "cotidie morimur" and the medieval "media vita in morte sumus"). Subjectively however, some privations might be perceived more intensely than they deserve to be. For it is more reasonable to experience the absence of *the Source* of all goods than the absence of *some particular* good. The task of metaphysics consists in stating the relation of all particular goods (the secondary agents that cannot be multiplied to infinity) to the Absolute Cause of all goods.²⁰⁴

This type of existence is proper to man only. There is something in him/her able to experience the absence of God. There is a possibility to become conscious of man's destiny not being tethered to particular goods. It is human rationality. Humans experience their being rational originally when at loss, astonished or even stunned by what is perceived as foreign.

²⁰⁴ Summa Theologiae I, q. 49 a. 3 c. Respondeo dicendum quod ex praedictis patet non esse unum primum principium malorum, sicut est unum primum principium bonorum. Primo quidem, quia primum principium bonorum est per essentiam bonum, ut supra ostensum est. Nihil autem potest esse per suam essentiam malum, ostensum est enim quod omne ens, inquantum est ens, bonum est; et quod malum non est nisi in bono ut in subiecto. Secundo, quia primum bonorum principium est summum et perfectum bonum, quod praehabet in se omnem bonitatem, ut supra ostensum est. Summum autem malum esse non potest, quia, sicut ostensum est, etsi malum semper diminuat bonum, nunquam tamen illud potest totaliter consumere; et sic, semper remanente bono, non potest esse aliquid integre et perfecte malum. Propter quod philosophus dicit, in IV Ethic (c. 11, 1126a 12-13), quod *si malum integrum sit, seipsum destruet*, quia destructo omni bono (quod requiritur ad integritatem mali), subtrahitur etiam ipsum malum, cuius subiectum est bonum. Tertio, quia ratio mali repugnat rationi primi principii. Tum quia omne malum causatur ex bono, ut supra ostensum est. Tum quia malum non potest esse causa nisi per accidens, et sic non potest esse prima causa, quia causa per accidens est posterior ea quae est per se, ut patet in II Physic. Qui autem posuerunt duo prima principia, unum bonum et alterum malum, ex eadem radice in hunc errorem inciderunt, ex qua et aliae extraneae positiones antiquorum ortum habuerunt, quia scilicet non consideraverunt causam universalem totius entis, sed particulares tantum causas particularium effectuum. Propter hoc enim, si aliquid invenerunt esse nocivum alicui rei per virtutem suae naturae, aestimaverunt naturam illius rei esse malam, puta si quis dicat naturam ignis esse malam, quia combussit domum alicuius pauperis. Iudicium autem de bonitate alicuius rei non est accipiendum secundum ordinem ad aliquid particulare; sed secundum seipsum, et secundum ordinem ad totum universum, in quo quaelibet res suum locum ordinatissime tenet, ut ex dictis patet. Similiter etiam, quia invenerunt duorum particularium effectuum contrariorum duas causas particulares contrarias, nesciverunt reducere causas particulares contrarias in causam universalem communem. Et ideo usque ad prima principia contrarietatem in causis esse iudicaverunt. Sed cum omnia contraria convenient in uno communi, necesse est in eis, supra causas contrarias proprias, inveniri unam causam communem, sicut supra qualitates contrarias elementorum invenitur virtus corporis caelestis. Et similiter supra omnia quae quocumque modo sunt, invenitur unum primum principium essendi, ut supra ostensum est.

The fact was given *some* appreciation in Heidegger. The privileged mode of intellection was Angst. Suggestive as the claim might sound, it is not general in the sense sought in philosophy. It is not philosophical enough.

Animals, for all we know, can be terrified or stunned too. If man is any different, he/she must experience his/her being destitute in a special manner. There is *an* Angst or Weltschmerz in human life, albeit it should be given its proper name. The Angst is an affection plainly enough. In Thomas' (general) terminology the term of affection encompasses both the acts of the spiritual in men (the will) and what is inferior in them (feelings). This terminology says *more* about man than existentialism. If there is a (deplorable) possibility to experience the pathological anxiety (relished by existentialists), there must be also a possibility to experience *constructively* that which is but *superficially* similar to Angst. According to Thomas, there is a special species of Angst in man. It is called *astonishment*. Man is no match for animals if the authenticity of feeling is concerned, but no animal can be astonished in the proper sense of the word. According to both Plato and Aristotle philosophy is born from astonishment. The anxiety, on the other hand, is bound to beget despair only. Neither does pretend existentialism to beget anything else.

The first Greek philosophers expressed their thoughts with naïveté incomprehensible for these who relish but in what sounds lofty enough. A contemporary man would have shirked speaking out with such an openness of mind (*parrhesia*) for the fear of appearing ridiculous. The actual stupidity, on the other hand, happens to be smartly disguised by the flow of sophisticated verbiage so as to anticipate any attempt of being accused of simplicity. Now, according to ancient Greeks, man is intelligent to the degree he/she is bold enough to express his/her doubts openly (*παρρησία*), even at expense of admitting his/her own ignorance. Dropping that unique Socratean attitude to what is to be known renders human reasoning barren and cut off from the real source of innovative thinking.

Humans might experience the Transcendence entering the emptiness of their own existence. However, not the Transcendence *directly*, but Her effects are experienced as such. The emptiness in question (e.g. death, illness, evil) must be faced squarely so that the possibility might loom to see the Transcendence behind it. There is no possibility to demonstrate the necessity of the Transcendence's entering the void of the human history, because the act concerned is free. Nevertheless, there is no justified reason to deny Her having done so if the fact is faced with the openness of mind.

The aforementioned Greek astonishment (*θαυμάσιον*) is the action of the will, not of feelings as existentialism claims. It is *a* movement of the will, but the very term should be taken analogically.

Normally, the term of motion is applied to what is measured by time. In more general terms, however, it can be so as to the rational (or even intellectual) in man too. Contrary to what Heidegger claimed, there is no temporality in it (as time *accompanies* human understanding only), but the sequence of *discrete* acts, called in the Middle Ages *aevitas*. Moreover, although there is no motion in God, since the very proof from motion demonstrates what is opposed to that feature to the material world, there are two *processions* in God (constituting Trinity) indeed and corresponding to God's intellect and will. The language of

Revelation is more general than the language of philosophy.

Thus, by the extension of meaning, human tending towards the ultimate (and the promised partaking of/in God's inner life too) might be called motion too. The motion of admiration is connected with the actual order of existence. Still, the first and innate impulse towards good is more general and called *synderesis*. However, lest it miss the mark (as being that general) it must be specified (which is to say: directed) by the act of the intellect.

The starting point of the pathway to God (and of the Thomasian Ways too) is – so to say – undetermined historically. *Any* moment of human history and *any* movement occurring in the world we live in might be this. Still, the reasoning is absolutely indispensable for the pathway being directed appropriately. The reasoning must be – in a sense – opposite to what precedes it, which is – parenthetically speaking – included in the Aristotelian distinction of induction and deduction). Otherwise humans would blunder instead of advancing in the definite direction. True, the paths leading to the Ultimate might be many and perhaps even incomparably more than just the five canonical listed by Thomas. For the paths of human life happen to be perplexed and winding indeed. Still, for them being what they must be: just pathways, they must be definite. There is some diversity in human life. However, lest the diversity become a chaos, it must be mastered by the intellect, which is to say: it must be understood and ordered.

Contra Gentiles, lib. 2 cap. 41 n. 2. Si enim diversi agentes ex quibus procedit rerum diversitas, sunt ordinati ad invicem, oportet quod huius ordinis sit aliqua una causa: nam multa non uniuntur nisi per aliquod unum. Et sic illud ordinans est prima causa et una distinctionis rerum. Si vero diversi agentes non sint ad invicem ordinati, concursus eorum ad diversitatem rerum producendam erit per accidens. Distinctio igitur rerum erit casualis. Cuius contrarium supra ostensum est.

[2] For if the diverse agents that cause the diversity of things are ordered to one another, there must be some single cause of this order; for many things are not united save by some one thing. And thus the ordering principle of this unity is the first and sole cause of the distinction of things. But, if these diverse agents are not ordered to one another, their unified action in producing the diversity of things will be accidental. The distinction of things, therefore, will be fortuitous. But we have already proved that the contrary is true.²⁰⁵

There is a special problem in differentiating between the order and its Author. The problem is discussed in the XII book of “Metaphysics”. Hegel, despite all his admiration for Aristotle, failed to draw a line between them. Generally, every system must be contrasted to its environment. No activity (no movement) of the system is possible without the outer side

²⁰⁵ CONTRA GENTILES. BOOK TWO: CREATION; translated by James F. Anderson.
<https://dhspriority.org/thomas/ContraGentiles2.htm#41>

providing energy to it. Analogically, that human activity be dynamic, the transcendent source of it is to be sought and identified. No matter how carefully ordered, human existence must be admitted to actually lack something which can boost its energy nonetheless. Paradoxically, the privations prove to “matter” here indeed. They are a matter to be coped with. If so, they point to the Outer Side. To the contrary, if presumed to be self-reliant and absolutely autonomous, human existence becomes barren and deprived of energy.

Opposites not only attract each other, they occasion each other too. Kierkegaard claimed the opposite to Hegel’s optimism. The contemporary man harvests the poisonous fruits of what pretended to be the philosophy of life. The morbid fascination with evil, demonism and the like are signa temporis of the 21st century. The privation (no matter how harrowing) must be lived down constructively. The Other Side of the given must be spotted despite all deficiencies of human understanding.

CHAPTER VI. FORMALIZATION OF CONCEPTS

1. Mechanistic philosophy versus the language of qualities

In CHAPTER II. 1 and 2, the problem of the modern paradigm of science was addressed. Innovative and fruitful as it might have been for a considerable time, mechanistic philosophy connected with the names of Newton and Leibnitz proved – according to Bohm – eventually (in the 20th century) exhaust its resources. Not only was that primitive guise of mechanistic philosophy attacked by Bohm. The stance of the Copenhagen School was subsumed under the same denominator.

Bohm tries to point out to what he deems a culprit of the crisis of science in the 20th century. Mechanistic philosophy was responsible for reducing all qualitative features of natural phenomena to modification of quantities.

The essential characteristics of a mechanistic philosophy in the most general form that it has developed thus far in physics are the following: The enormous diversity of things found in the world, both in common experience and in scientific research, can all be reduced completely and perfectly and unconditionally (i.e. without approximation and in every possible domain) to nothing more than the effects of some definite and limited general framework of laws. ... At bottom, the only changes that are regarded as possible within this scheme are quantitative changes in the parameters or functions defining the state of the system (as precisely as the nature of the system permits this state to be defined, while fundamental qualitative changes in

the modes of being of the basic entities and in the forms in which the basic laws are to be expressed are not regarded as possible. Thus, the essence of the mechanistic position lies in its assumption of fixed basic qualities, which means that the laws themselves will finally reduce to purely quantitative relationships. The philosophy of mechanism has undergone an extensive evolution in its specific form, all the while retaining the essential characteristics ²⁰⁶

The language of quantities, to the contrary, involves, according to Bohm, something (at least provisionally) constant.

There is, however, one general statement that can be made at this point about the inexhaustible diversity of things that may exist in the universe; namely, that they must have some degree of autonomy and stability in their modes of being. Now, thus far, we have always found that such autonomy exists. Indeed, if it did not exist, then we would not be able to apply the concept of a “thing” and there would then be no way even to formulate any laws of nature. For how can there be an object, entity, process, quality, property, system, level, or whatever other thing one cares to mention, unless such *a thing has some degree of stability and autonomy* in its mode of existence, which enables it to *preserve its own identity* for some time, and which enables it to *be defined* at least well enough to permit it to be distinguished from other things? If such relatively and approximately autonomous things did not exist, then laws would lose their essential significance . . .²⁰⁷

However, the stress might be put (as it was) on the tongue being provisional and its positive meaning restricted to *providing* sheer possibilities of the scientific progress. Similarly as in Husserl, the thingness (expressed in the tongue of qualities, and in “definitions”) is considerably less than quiddities of the classical philosophy (abstracted from the physical world). There is no essential correlation of each of them to diverse and real natures found in the world. Pragmatism dominates.

Moreover, physics is now faced with a crisis in which it is generally admitted that further changes will have to take place, which will probably be as revolutionary compared to relativity and the quantum theory as these theories are compared to classical physics. Secondly, the mechanistic assumption of the absolute and final character of any feature of our theories is never necessary. For the possibility is always open that *such a feature has only a relative and limited validity*, and that the limits of its validity may be discovered in the future. Thus, Newton’s laws of motion, regarded as absolute and final for over two hundred years, were eventually found to have a limited domain of validity, these limits having finally been expressed with the aid of the quantum theory and the theory of relativity. Indeed, the mechanistic thesis that certain features of our theories are absolute and final is an assumption

²⁰⁶ The Essential David Bohm edited by Lee Nicol; 2. SUMMARY OF THE ESSENTIAL CHARACTERISTICS OF A MECHANISTIC PHILOSOPHY, p. 11
http://cspeech.ucd.ie/Fred/docs/Bohm_2005_.pdf

²⁰⁷ Ibid., p. 20

that is not subject to any conceivable kind of experimental proof, so that it is, at best, purely philosophical in character.²⁰⁸

The mechanistic position, according to Bohm, failed to meet the paradigmatic objectives profitable (as expected) for science. It might even be contrary to its basic assumptions: those demanding the unhampered progress of science. But in Bohm, the progress is rather stipulated than safeguarded by a theoretical model of science. For if the latter implies a definite form, the very form is impugned for the same pragmatic reasons.

... the assumption of the absolute and final character of any feature of our theories contradicts the basic spirit of the scientific method itself, which requires that *every* feature be subjected to continual probing and testing, which may show up contradictions at any point where we come into a new domain or to a more accurate study of previously known domains than has hitherto been carried out. Indeed, the normal pattern that has developed without exception in every field of science studied thus far has been just *the appearance of an endless series of such contradictions*, each of which has led to a new theory permitting an improved and deeper understanding of the material under investigation. Thus, the full and consistent application of the scientific method makes sense only in a context in which we refrain from assuming the absolute and final character of any feature of any theory and in which we therefore do not accept a mechanistic philosophy.²⁰⁹

The *appearance of an endless series of such contradictions* might smack of Marxism or at least some guise of Hegelianism. Now, “contradictions” can only appear within a totality, which was commonly called the image of reality. Dialectics in general is concerned with that “image” rather than with separate things which should have been appropriately assessed. (Which is to say: given real definitions). The contradictions were supposed to appear *within* something and Bohm speaks of a “conceptual map” or “the mental image of the world”.

The child ... with his ability to create a mental image of the world, i.e., to *imagine* it, ... conceives a set of places which are permanent, these places being occupied by various permanent objects. But one of these objects is *himself*. In his new mental “map” of the world he can maintain a permanent distinction between himself and other objects. ... In this way the general picture of a world in space (and time), constituted of separate and permanent entities which can act on each other causally, is formed. The notions of an objective world and of a subject corresponding to one of the objects in the world are, as we have seen, thus formed together, in the same step. And this is evidently necessary, since the mental image of the world that serves as a kind of conceptual “map” requires the singling out of one of the objects on this “map” to represent the place of the observer, in order that his special perspective on the world at each moment can be taken into account. That is to say, just as the relativistic “map,” in the form of the Minkowski diagram must contain something in it to represent the place, time, orientation, velocity, etc., of the observer, so the mental map that is created by each person must have a corresponding representation of that person’s relationship to the environment.²¹⁰

²⁰⁸ Ibid., p. 12

²⁰⁹ Ibid., p. 12

²¹⁰ Ibid., p. 46

In this way an overall system of concepts and mental images may be developed, which is a more or less faithful representation of the “manifest world.” The process of thought is not, however, merely a *representation* of the manifest world; rather, it makes an important *contribution* to how we experience this world ...²¹¹

... each entity is continually being formed from the infinite background and falls back into the background, to be regenerated again and again (as long as it continues to exist). Thus each thing has its roots in the totality and falls back into the totality. Yet, it still remains a thing having a certain degree of independent being. And this is possible because each thing contains in itself, its own special image of the totality (cosmos) out of which it formed itself, and into which it is always dissolving (and re-forming). The apparent separateness of things as we see them immediately is that each thing has a certain degree of relative indifference to the others. But this indifference does not belong to it alone. For it is the cosmos itself which determines this indifference and which also determines the limits of this indifference. If the above is true for the most elementary and inert kinds of things, it is much more true for more organized things, such as living beings, man and his consciousness and society. Each man draws his being from the totality and his effects fall back into the totality. His separateness, loneliness, indifference to the others are only relative, and determined by his relation to the totality ²¹²

Significantly, the cognizance of “totality” Bohm speaks of is dependent (dialectically) upon the cognizant subject (both are a priori notions), and (which is openly admitted by Bohm) relative to it only. But on the other hand, *the principle* of the alleged relativity had not been questioned, but taken for granted. The relativism is dogmatic. Now, it seems that it *should be* questioned nonetheless, and out of the principles laid down by Bohm himself. Should the “relativity” be exempted from the general rule which “requires that *every* feature be subjected to continual probing and testing”?

What makes Bohm’s stance different to the Hegelian dialectics is that the “image of the totality” is taken literally; i.e. just as an image (not as the idea) and the progress is believed to be as interminable as normally images must be.

In conclusion, then, the notion of the qualitative infinity of nature permits us to retain all the positive achievements that were made possible by the development of mechanism. In addition, it enables us to go beyond mechanism by showing the limitations of the latter philosophy and by pointing towards new directions in which our concepts and theories may undergo further development. Naturally, we do not wish to propose here that the qualitative infinity of nature is a final doctrine, beyond which no further steps can ever be made. Indeed, as science progresses, it seems very likely that the qualitative infinity of nature will eventually be found to fit into some still more general point of view, which in turn retains its positive achievements, and which goes beyond them, much as the notion of the qualitative infinity of nature goes beyond mechanism. But, in this chapter, our purpose is merely to call attention to the many factors that suggest the need for this important step carrying us outside the limits of

²¹¹ Ibid., p. 112

²¹² Ibid., p. 202; A letter from Sept. 9, 1958

a mechanistic philosophy, and to show the numerous advantages that come from taking this step.²¹³

Be that as it may, the “image of reality” is meant to replace the cognizance of particular facts and building the system of science upon the correlation of statements with the specific objective states of matters.

The image, by its very nature, must encompass narrower or vaster swathes of “reality”, and its “dialectical” relation to it is a consequence. The problem is, however, whether the “image” or whatever the like is of any value for science. According to Aristotle, science is wrought by the intellect, and imagination has but a subsidiary role in its work. Imagination is an instrument of the intellect.

Bohm might have been right in pointing to some real obstacles bound to thwart the progress of science. Still, nothing can guarantee, that the remedy he offered would not pose some other ones, and perhaps even more serious. Generally speaking, *opposing directly* a particular stance adds up to assuming tacitly some presuppositions. The way those “virtualities” could unfold is difficult to foresee at first glance.

In other words: the positive meaning of what Bohm observed is to be obtained after dropping those presuppositions. Bohm speaks about “entity being formed from a background”. Now, the apposition of “infinite” to the “background” (“each entity is continually being formed from the infinite background and falls back into the background”) makes the notion oxymoronic (or at last vague), whereas “singling out” cannot replace defining things. A thing (entity) is to be rather *contrasted* with this background. Contrary to what Bohm declares, the infinitude of the background and its continuation to what is set against it chimes in with the mechanist position.

In outlining the dynamic between structure and background, Bohm introduces the notion of reciprocal relationship. In the mechanistic concept of interaction, the various components of a given system affect one another in strictly quantitative fashion, exemplified by Newton’s laws of motion which specify equality of action and reaction, as well as the maintenance of the identity of the components. By contrast, a reciprocal relationship enables a qualitative relation between structure and background, in which each has the potential not only to “impact” the other, but to generate transformations in the nature of what each actually is. From this perspective, each “thing,” whether particle or starfish, derives its relative stability through the influence of background and substructure. But this influence is not a one-way affair – each particular thing in its turn may affect and influence its respective background and substructure. Thus qualitative changes may flow in both directions, with particles subtly affecting their fields (as well as the reverse) or starfish subtly affecting their ecosystems (as well as the reverse). More broadly considered, the notion of reciprocal relation allows for nested, mutual influence even between macroscopic processes and those at the atomic level, indicating the complexity of the pathways through which the qualitative infinity of nature may manifest.²¹⁴

Instead, we may find that the background enters in a very fundamental way even into the

²¹³ Ibid., p. 17

²¹⁴ Ibid., p. 10

definition of the conditions for the existence of the new kinds of basic entities to which we will eventually come, whatever they may turn out to be. Thus, we may be led to a theory in which appears a much closer integration of substructure and background into a well-knit whole than is characteristic of current theories.²¹⁵

Now, “a reciprocal relationship [that] enables a qualitative relation between structure and background [and is able] to generate transformations in the nature of what ... actually is; [by which ...] each «thing», ... derives its relative stability through the influence of background and substructure” would be better described in the classical Aristotelian terms of substance and motion. Natures, for all objections raised by Bohm, can be defined peremptorily, due to the qualitative feature inherent in them. This quality is a basis for forming specific differences and real definitions of things. Being defined peremptorily does not impair in the least the perspectives of science, as the science Bohm has in mind is – to use Aristotelian terms mentioned above – “in-between” mathematics and *scientia naturalis*. In this realm in can develop freely. Progress, on the other hand, is not an autonomous value, or if you like, is more autonomous than Bohm supposed. It is autonomous in the sense of being connected with the autonomous personal existence, and not with the existence of the imaginary collective consciousness – evolving and advancing into the indefinite future. The value of such a progress would be problematic to say the least of it.

For all his interest in philosophy, Bohm was not a learned philosopher. Some ideas actually used by him had a noble past ancestry unknown to him. They should have been systematically reflected upon instead of being accepted uncritically. This regards first of all the Hegelian dialectics. Hegel assumed the dialectics of contradictions interwoven into the tissue of the history of civilization. Still, he assumed its counterpart also; something that rendered his system deign (to his mind) the name of absolute philosophy of spirit instead of that of a vulgar relativism. According to Hegel, all contradictions were bound to vanish (*sein aufgehoben*) at the end of the history. Addressing Hegel in this context is not meant to reproduce his ideas unreservedly. In fact, it is about seeing the problem in more general terms. Nay, it might be even asked whether the Hegelian ones were *most general*; whether Hegel himself saw the problem as abstractedly as it could be; which is to say: transcending the particulars so as to trigger the maximum of existential spiritual possibilities in applying the abstract to as many particulars as only possible. In other words: it might be advisable to re-interpret the Hegelian stance in more general terms. Instead of a vague (and “the least philosophical” as Aristotle has it) notion of the history and its end, a more abstract term of *καίρος*, elaborated by the ancient Greeks is to be assumed. The tendency to changing the concrete into the abstract (visible e.g. in the notion of *ἀρχή*) is a characteristic feature of the Greek science and philosophy. If the *Aufhebung* had any positive meaning at all, it would be connected with the personal act of cognizance. The plenitude of time and the constructive abolishing of the mutability of things have the same personal character. *Καίρος* is the personal plenitude of time. The genuine *Aufhebung* must be the personal act of abstraction accomplished by the individual active intellect (*νοῦς ποιητικός*). This act results in creating

²¹⁵ Ibid., p. 19

formalized concepts and the real definitions of things. Similarly as in Hegel, the laws of being appearing at “the end of history” are peremptory. Now, “*the* end” is *my* end and *your* end alike; the finality of nature (it tending to the end) is first manifested in personal acts of cognition. The only end of the “humane” *collective* time is that of destruction, which was stated by von Hartmann. The sense of history (if you like) is rather to be found in the past (the personal reflection) than in the (indefinite) future. We turn to the past so as to define the future.

The extreme difficulty is, however, connected with how to understand the most general notion inherited from the ancient past; i.e. the notion of being. Hegel tried to cope with the problem of being, but the solutions proposed by him appeared uncanny even to the majority of his followers. Nevertheless, some consequences of what had been said in the past were explored. Being is – to use the scholastic term – transcendental (all-encompassing), and the simplest way to exemplify it would be to extend its notion. According to Avicenna already, it was as transcendental as the active intellect was. The active intellect became, consequently, identified by his followers with the collective (all-encompassing) consciousness.

Both Avicenna and Hegel had failed to reflect upon being systematically, which would provide a coign of vantage; a transcendental point of reference indeed. It would be a frame of reference enabling to formalize the other concepts by judging them. In other words: the very history Hegelians were so dearly attached to, can be understood abstractedly too, and given a personal dimension of the *καίρως* mentioned above. History can become *my* history (as well as yours and anybody else’s too) and definable in absolute terms as long as the most general notion *personally grasped* is reflected upon. In the IV book of *Metaphysics* Aristotle argues that the ability to name things peremptorily is founded upon the use of the first intellectual principle tackled thematically in *metaphysics* – the non-contradiction principle. It plays the pivotal role in formalizing concepts. “It is impossible to be and not to be at the same time”. The principle might have seemed vague to those who failed to substantiate the most universal notion of being with various modes of being and manifold levels of the existential reality, but Aristotle was none of them.

Similarly, when speaking of “the same time” not an ordinary sequence of moments (or its privation) is meant. The Greek *καίρως* is connected with abstracting the general notion from the spatial temporal. Two *physical* things cannot – according to the special theory of relativity – exist simultaneously. If two “things” can exist simultaneously after all, it are the physical one and its similitude abstracted from the material conditions. The act of *Aufhebung* (applying the non-contradiction principle in concreto) consists in transporting the similitude of a thing from the changing universe into the realm of the human spirit. The effect is absolutely stable. According to Thomas, the similitude of a thing is grasped in the intellect quite immovably and will abide there into infinity. This is the most general way things can exist at all.

The border between the matter and the spirit might be difficult to assess indeed. Still, it must be tried to be described after all for the sake of the unhampered personal intellectual development. The images, in turn, play but a subsidiary role in intellection. They are but

instruments of the intellect after being enlightened by it. The General Enlightenment is a myth.

Bohm's criticism of mechanist position is justified in denouncing its method as vitiated since acting without a real warrant of progress.

It is evident that such an ability [for developing new structures] cannot be due merely to some sort of mechanism that randomly puts forth "hypotheses" until one of them is confirmed. Rather, for reasons that are as yet not known, the human mind in its general process of perception, whether on the immediate level or on the highest level involved in understanding, can create structures that have a remarkably good chance of being correct in domains going beyond that on which the evidence for them is founded. On the basis of this possibility, the process of "trial and error" can efficiently weed out those structures that are inappropriate. At the same time it can help provide material, the criticism of which leads to a fresh act of understanding or perception, in which yet newer structures are put forth which are generally likely to have a broader domain of validity and better correspondence to the facts than the earlier ones had.²¹⁶

Nothing can objectively guarantee that a scheme once adopted would function effectively in the future. For the same objections as those raised against the mechanist position might apply to Bohm's stance too. Let us recall once more his own words and underscore those problematic ones:

From this perspective, each "thing," ... derives its *relative* stability through the influence of background and substructure. But this influence is not a one-way affair – each particular thing in its turn may affect and influence its respective background and substructure. Thus qualitative changes may flow in both directions, with particles subtly affecting their fields (as well as the reverse) More broadly considered, the notion of reciprocal relation allows for nested, mutual influence even between macroscopic processes and those at the atomic level, indicating *the complexity of the pathways* through which *the qualitative infinity* of nature may manifest.²¹⁷

Naming things in a definite manner implies them being so; i.e. maintaining a definite nature (specific to a given level of the cosmic energy). Thus, the problem of the quality of things is intertwined with *what they really are*. The problem might not be posed as clearly as it was in classical philosophy, but the problem of qualitative difference of things is so important that it cannot be reduced to the scientific praxis. This metaphysical problem of what things really are, was posed distinctly in Plato's "Phaedo" already. However, contrary to what Plato thought himself, the cognizance of essences must depend on how things present themselves to our senses; which is to say: how they appear from their qualitative side. According to the scholastic formula drawn from Aristotle: *accidentia conferunt magnam partem ad cognoscendum quod quid est* (the accidents contribute a good deal to the knowing of that

²¹⁶ Ibid., p. 75, 76

²¹⁷ Ibid., p. 10

which is). But in mathematics, according to Thomas, the relation of the accidents to the essence is dropped.²¹⁸ What might have been otherwise deemed accidents (quantity is a feature of *something* indeed), become “autonomous” entities.

Bohm tried to solve one of the most difficult problems of quantum mechanics; the problem of creation and annihilation. As a matter of fact, the problem was not that of science (in a narrower sense of the word), but was one of the most serious ones faced in philosophy since its beginnings. The solution Bohm hinted does not need to be accepted, but the direction of scrutiny proposed by him is worth reflecting upon.

The problem of becoming and perishing appeared at the very outset of the Greek philosophy. There was a mechanist position of a sort espoused by the first philosophers of nature. They assumed the existence of just one common substratum (named differently by each of them), which underwent mechanical changes. Those changes were (allegedly) perceived as the qualities of things. Consequently, no diverse essences of things existed, but

²¹⁸ Contra Gentiles, lib. 3 cap. 56 n. 5. Nulla virtus cognoscitiva cognoscit rem aliquam nisi secundum rationem proprii obiecti: non enim visu cognoscimus aliquid nisi inquantum est coloratum. Proprium autem obiectum intellectus est quod quid est, idest substantia rei, ut dicitur in III de anima. Igitur quicquid intellectus de aliqua re cognoscit, cognoscit per cognitionem substantiae illius rei: unde in qualibet demonstratione per quam innotescunt nobis propria accidentia, principium accipimus quod quid est, ut dicitur in I posteriorum. Si autem substantiam alicuius rei intellectus cognoscat per accidentia, sicut dicitur in I de anima, quod accidentia magnam partem conferunt ad cognoscendum quod quid est; hoc est per accidens, inquantum cognitio intellectus oritur a sensu, et sic per sensibilibus accidentium cognitionem oportet ad substantiae intellectum pervenire; propter quod hoc non habet locum in mathematicis, sed in naturalibus tantum. Quicquid igitur est in re quod non potest cognosci per cognitionem substantiae eius, oportet esse intellectui ignotum.

No cognoscitive power knows a thing except under the rational character of its proper object. For instance, we do not know anything by sight except according as it is colored. Now, the proper object of the intellect is that which is, that is, the substance of a thing, as is stated in Book III of *On the Soul* [4: 429b 10]. Therefore, whatever the intellect knows about any thing, it knows through knowing the substance of the thing. Consequently, in any demonstration through which the proper accidents become known to us, we take as our principle that which is, as is stated in *Posterior Analytics* I [4: 73a 37]. Now, if the intellect knows the substance of a thing through its accidents, in accordance with what is said in Book I of *On the Soul* [1: 402b 21], that “the accidents contribute a good deal to the knowing of that which is,” this is accidental, inasmuch as the intellect must attain to substance through the knowledge of sensible accidents. For this reason, this procedure has no place in mathematics, but only in the area of physical things. Therefore, whatever is in a thing and cannot be known through a knowledge of its substance must be unknown to the intellect.

CONTRA GENTILES. BOOK THREE: PROVIDENCE; Q. 1-83; translated by Vernon J. Bourke
<https://dhsprory.org/thomas/ContraGentiles3a.htm>

one “matter” instead.

The reaction came from the part of uncompromising theorists. Parmenides espoused the idea of an absolutely unchanging reality (being). The reaction was predictable to some degree, as thinking (theory) implies maintaining the *same object in the mind*, whereas the relation of the “matter” of e.g. Anaximenes to the mind must have remained unclear. The relation of being to Parmenides’s intellect was clear; however, the very notion of being was not so; its relation to facts was hopelessly blurred.

Plato attempted – to use his own words – a “parricide” of Parmenides. An heir to the ancient tradition, he tried nevertheless to rescue the diversity of things. But it was only Aristotle who succeeded in defining the nature of (different) substrata adequately. Aristotle managed to substantiate the notion of (diverse) beings in the cognizance of physical substrata and facts. The substrata are as many as many are discrete levels of the cosmic energy. Contrary to Avicenna, who distorted his teachings some centuries later, the cosmic energy cannot evolve. Without the footing of the manifold substrata, all human activity (the mathematical and physical ones included) would advance at random. The constants must be at least tacitly assumed. But they need not exist under such a precarious guise as devised by e.g. Bohm; i.e. in a sheer perspective of some values obtainable in the indefinite future. The minimum Bohm accepted was meant to avoid the danger of technicization of humans, but the *causes* of the general tendency were not shown. For it was the instrumentalization of humans that was concerned.

We live in an age where science and technology increasingly need to serve the interests of economic growth and immediate practical applications. The adverse effects of science and technology are well known, but it seems to be impossible to control and foresee developments such as those in information technology. For example, how will the current developments in this technology affect human consciousness? Will consciousness have to mechanize itself in order for the new information technology to function efficiently?²¹⁹

Thus, the personal character of understanding had not been in the least safeguarded and the individual existence either. The self-image Bohm speaks of in this context is but a reflex of the geometric outlines of (apprehended) objects. Moreover, the relation of the “consciousness” to the body must remain unclear and the human personal identity, consequently, threatened. A human individual had to be dissected into two parts, the mind and body. Persons were, in fact disintegrated. Mechanisms governing the universe would govern the human body too, whereas some ideas appearing in the “consciousness” might only mirror them with some approximation and provide but some Ersatz of personal autonomy. It does not seem that Bohm succeeded in shaking off the mechanist position definitely.

The modern mechanist philosophy is considerably more sophisticated than its ancient ancestor. In fact, if searching for its *immediate* ancestry, the Arab medieval philosophy is to be recalled with its unsolved and insolvable question regarding the relation of the “reality” to

²¹⁹ Ibid., p. 6; Bohm, D. and Biederman, C., *Bohm–Biederman Correspondence* (ed. Paavo Pylkkänen), London, Routledge (1999), p. xxi.

the “ideas” .The problem was addressed in PREFACE 7 already.

It has been believed that the human identity is defined by the DNA code. But a code is a sign understandably enough. Now, how is it possible that a sign can define anything at all and be substantiated in the real world? The process of becoming might *be described* by pointing out to some features it exhibits, but what the mechanist position claims is considerably more: The sings abode in the very core of nature in a mysterious manner.

It is an undeniable mark of a vivid organism that it can reproduce its like. Signs on the other hand, cannot do anything of the sort. A grain of wheat has more power in this respect than a learned volume full of breaking ideas. The ideas can only become fertile in the minds of those who take the personal responsibility for defending them. Words – as Plato has rightly observed – are “helpless” in this respect. Plato himself was deeply distrustful towards signs and written words. The fact that this aspect of his teaching had been “unknown” till the Tübingen School “discovered” it is remarkable. In fact, Thomas mentions the “unwritten teachings” of Plato.²²⁰ Thus, not the “discovery” is striking. What is really striking is that the existence of unwritten teachings went into oblivion. A cause is to be shown. It cannot be anything else than the idolatrous attitude towards words and ideas: inherited from the mediaeval Arab philosophy. Words cannot be fertile and signs neither. People can be so, and the personal identity results from natural agents – substances. The fact that the acting can be described (in some aspect) by the DNA code cannot change it that only physical substances can act, whereas ideas, signs or whatever the like – cannot.

There is but one exception and beyond the natural course of events. The Word of God is fertile and can be sown in the souls of those who believe in It. Thus, by participation, a person enters into the inner life of the Trinity, in which the Word is real. No other word can be believed to be so. Neo-Platonists believed in that the personal identity would vanish on entering the Absolute Being. The Revelation says nothing of the sort. If the supernatural can exist in man, it is only because the natural integrity is maintained.

Modern science cannot, for the reason adduced many times already – say anything *directly* on the problem. However, the very discoveries of quantum mechanics can be interpreted philosophically. There is something in modern science inherited from Aristotelianism, viz. the very word of energy. Ἐνέργεια of Aristotle characterizes substance and natural motion. If a new substance comes to existence it is because of “energy” of the natural agents. The human begetting can be understood accordingly. The wave-particle dualism helps to understand the problem of natural becoming. Human substances are

²²⁰ In *Physic.*, lib. 4 l. 3 n. 6. Omne enim receptivum alicuius dicebat esse locum, non distinguens inter receptibilitatem loci et materiae: unde cum materia sit receptivum formarum, sequitur quod materia sit locus. Tamen sciendum est quod de receptivo diversimode Plato loquebatur: quia in *Timaeo* dixit receptivum esse materiam; *in dogmatibus autem dictis et non scriptis, idest cum verbotenus docebat in scholis*, dicebat receptivum esse magnum et parvum, quae etiam ex parte materiae ponebat, ut supra dictum est. Tamen, cuicumque attribueret esse receptivum, semper dicebat quod receptivum et locus sint idem.

apparently *some* bodies. But if the real acting has any positive meaning at all, it must be described as a transfer of energy (and not the transfer of “codes” or “signs”). Human genomes (describable by the DNA codes) might be considered as travelling waves, whereas the sources they stem from as standing ones. Now, two travelling waves can add constructively and the effect is a standing wave (a new human organism). It is necessary that the original waves (genomes) be quenched everywhere besides a certain place describable as the natural one of a new body with its nodes corresponding to the character of the original waves (energies). A standing wave (a new organism) occupies its natural place as a wave with definite nodes. The conception must be, consequently, understood as the superposition of the two travelling waves. Now, the superposition is not achievable save for the waves that stem from the same source, i.e. are coherent. Nature makes it that the levels of cosmic energy (species) are constant and coherent. The waves issue, due to the tunnel effect, from what scholastics described as *potentiae generativae* – the immediate sources of this kind of energy. Contrary to what mechanists (Descartes) assumed, there are as many powers in humans as the various channels exist through which the vital energy can be transmitted. The human intellect is one of them, but the fact that it is not connected to the body (but – so to say – a pure energy instead) makes it the most formal and the supreme in man.²²¹ All human actions must be hierarchized according to their level of formality. The intellect is the most formal and thus must be responsible for the human integrity.

The words of the intellect are not just ideas. They are personally motivated; they are first of all the words of promise, fidelity and confidence. These words are conceived and propagated responsibly. Consequently, the very basis of the human existence (becoming) is to be found only where those words are addressed to a definite person. They are as personal as no other can be. The family they are uttered in first vouches for the integrity of the new life.

If it is good for any being to exist, it is so first of all for those perfect ones, viz. humans. *This original quality* is instilled in the very core of nature. *Existence is good* and to be cherished according to all the “dimensions” it might appear in. If torn out from its natural environment, a human existence becomes anonymous, exposed to the actions of the “artificial” objects disrespecting the natural place it can only thrive in.

2. The quality of truth and the scientific truths

The simplest way of ordering objects might be imagined that of subsuming them under just one common denominator; one homogeneous genus; and differentiating them according to their position only. The order obtained would be but that of position. It can be imagined, consequently, that two “points” on the “map of the image world” are what is normally called a

²²¹ Contra Gentiles, lib. 2 c. 60, n. 4. Ergo intellectus possibilis est aliqua pars hominis. Et est dignissimum et formalissimum in ipso. Igitur ab eo speciem sortitur, et non ab intellectu passivo.

cause and effect. The equivocation included in the term of “ordering” might be easily overlooked; which is to say: the ordering might be supposed to affect the external objects, whereas the similitudes of these things gathered in the mind ignored as to what they really are: similitudes (of effects) corresponding directly to what they represent; not to each other. For it are only “ideas” that are believed to refer to each other originally (and form “systems” of “thinking”), whereas the relation of each of them (separately) to the real world is lost sight of. Now, the genuine human words are the opposite: they are first referable to the real state of matter. Thus, *the natural order* might be overlooked and replaced by the artificial one. For it are images that are parts on the “image map”, and – if not known to be abstracted directly from natural objects (the forms they are first to be found in) – they are bound to be copied from the artificial ones (thought out previously). In particular, experimenting dealing with the artificial objects might be considered arraying the objects according to their spatial temporal “proximity”. Thus, the conditioned would be set against the conditioning *spatially*. The pragmatic aspect of “ordering” might be enhanced. The equivocation included in the Husserlian “setzen” is instructive. Things might be believed to be-set-against or set-up, but their appearances hardly ever *set down to* the substances. Consequently, *der Satz* could become “a set” of words and its integrity impaired. (“Clause” could imply integrity after all).

However, the order was originally, in classical philosophy, deemed *discovered* rather than *introduced*. In other words: although the praxis advances from the causes (an experimenter is a cause), the experience in the Aristotelian sense must advance from effects to causes; for what appears in our mind anew requires the appropriate explanation (the causal one).

The proceeding from causes to effects is traditionally connected with the name of Leibniz. The stance might be, nevertheless, called “theoretical” (or at least: abstract) as it transposes the way experimenting is performed on cosmic dimensions. Moreover, the stance might be called philosophical in the sense of originating from some philosophical (Avicennan) convictions, and of deserving an adequate philosophical assessment, albeit the names of the advocates thereof (Newton, Leibniz, Descartes, Laplace) are rather to be found in the handbooks of physics than in those of philosophy. The names listed above are not usually associated with philosophy, although the original stance resulted from some philosophical assumptions.

According to some, Avicenna contributed constrictively to the development of modern science introducing determinism therein: the scheme of thinking described above. Nature was imagined by Avicenna an experimenter on the cosmic scale and approaching the Supreme (necessary) Being. Analogically, people would experiment with ideas and some tentative solutions (“theoretical” in the modern sense of the word) proposed so as to be checked against the Necessary Ideal background. Determinism has become so deeply rooted in the modern paradigm of science and so closely connected with the idea of rationality that Einstein found it advisable to defend it against the indeterminism of the Copenhagen School.

The paradigm of science sketched above might be called that of the univocity of being. Now, the problem consists in that, whereas equivocation is deadly to science and to be avoided, the opposite stance i.e. that of univocity might be, albeit not that apparently, no less

detrimental to it. The univocity of *concepts* is essential in science. Determinism, however, claims, considerably more: There was a homogeneous realm of ideas, and the causal explanation of whence they stemmed impossible (but in fact: strictly forbidden).

Regarding concepts causally is (in Aristotle), as was mentioned above, tantamount to regarding them as some *modes of being*, i.e. *judging* them according to the first principle of differentiation, viz. the contradiction principle. Now, the Scotian theory of the univocity of being excluded the possibility of judging concepts according to the objective state of matters. Thus, the ideas were, according to Husserl, quantitatively characterized only, and those coextensive ones might be deemed (due to their imaginable proximity) related albeit the *causal* relation could never affect the essence of “ideas”. In Aristotle, on the other hand, the causal relation does so indeed; for Aristotle accounts for whence “ideas”, concepts, or whatever the name, stem from (the fact was underscored by Mieczysław Gogacz). This is in perfect accordance with the requirements of everyday life. We normally hold people accountable for what they claim.

The need for causal correlation of objects (the real one; i.e. affecting the system of thinking) seems to be so deeply rooted in the human mind that it required a considerable effort from the part of kantians and positivists to root it out. The paroxysm of this idiosyncrasy towards the cognizance of causes came at the beginning of the 20th century. Neo-positivists attacked the traditional (classical) paradigm of science. Science was stipulated to become a kind of social compulsion, and the natural need for cognizance of causes (and the Supreme one too) tried to be eradicated. Significantly enough, the attack resulted in destruction of science as such, and not in the destruction of what was regarded as the “classical burdening” of it. This bears the testimony to that the way modern science had been actually functioning had been really (albeit unconsciously) affected by its classical paradigm. Science developed *in spite of* reformers, not *because of* them.

Speaking about what is natural for humans we have in mind what can only trigger the personal intellectual development, and the social one subsequently only. The intellectual maturity is indissolubly connected with the ability to form conceptual language, whereas the immaturity (e.g. the Asperger Syndrome) consists in restricting the activity to arraying objects as to their position and quantity. To form the conceptual system of thought, some ordinary (and physical) conditions must be met. First of all silence is meant. Contrary to what might be supposed, silence is not a privation. In the 7th book of *Physics* Aristotle defines it as the quietude of mind.

The Polish composer Witold Lutosławski postulated that the right for silence be institutionally guaranteed. UNESCO enshrined the right in one of its documents in 1969.

We denounce unanimously the intolerable infringement on individual freedom and of the right of everyone to silence, because of the abusive use, in private and public places, of recorded or broadcast music. We ask the Executive Committee of the International Music Council to initiate a study from all angles—medical, scientific and juridical—without overlooking its artistic and educational aspects, and with a view to proposing to UNESCO, and to the proper authorities everywhere, measures calculated to put an end to this abuse.

Despite this, the right is disrespected and proportionally to the degree the so called advertisements and “music” intrude the privacy of human existence. The problem is not that of music only; for the Greek μουσική is not solely die holde Kunst. It is the problem of discounting the human vital forces (the inner tranquility) economically. For a person spiritually integrated is a poor “consumer” indeed (is not likely to be easily manipulated). The discounting might be effective for some spell of time. Eventually however, the “consumers” are bound to exhaust all existential possibilities departing from those most vulnerable ones, who would have fallen the prey of consumerism first. Witold Lutosławski pointed out to many aspects of the problem of the right to silence. The text (its extracts) has been published in Polish on line as well as in a printed book.²²²

p. 433: Human hearing is a handicapped sense as it is completely defenseless. One could shut the eyes if not willing to see ... could not touch an object if hot. However, stopping the ears, even with wax, will not do if one does not want to listen. The sound permeates the skull. Hearing is destitute and we are, in this respect, enthralled to the outer world.

... Humans have been bereft of one of their elementary rights – the right for silence. The right is not enshrined in laws; is not respected by people themselves in their everyday activities.

... Scientific researches are needed to elucidate the influence the phenomenon [of the forced hearing] exerts on the human psyche. It is only predictable that it cannot be positive.

p. 431: All this leads to the depreciation of the art (of music). It becomes vulgar and loathsome

.... Uninterruptedly, coercion is being inflicted by those using radios to millions of their neighbors. It is a nightmare and absurd of our epoch: the coercion to hear music.

p. 394: The fact had been unknown until recently. Nay, even hardly imaginable: the art whose motives and objectives are (as we think) connected with what is noblest may contribute to the coercion of people; to something that can only be odious.

The problem might be given a physical (scientific) illustration. The acoustic wave is a carrier of information as far as it is an ordered motion of molecules. The lesser the order of motion, the less is it apt to be analyzed. Analyzing, in turn, consists in grasping the harmonic components of some complex sounds. The human hearing performs spontaneously the Fourier analysis of some complex wave courses. The more trained the ear of a musician, the more capable of distinguishing. It is hardly believable that “modern music” can be analyzed in such a manner. Neither for that matter, does it pretend to. It is aimed at *moving* emotions (sometimes importunately and quite brutally), whereas the classical music provided the inner immobility and rest. The emotions, according to the ancient Greeks, must be “purified”. Music was deemed a catharsis.

The completely disordered motion of molecules is the thermic one. The noise, in turn, is somehow in between the harmonic motion (the analyzable one) and the totally chaotic one.

The ability to analyze what is heard and to form the abstract qualitative notions

²²² <https://www.muzykajest.pl/lutoslawski-2013-manifest-o-rownowage-dzwiekow-i-ciszy/>

Witold Lutosławski. O muzyce. Pisma i wypowiedzi” w opracowaniu Zbigniewa Skowrona, wydawnictwo Słowo/Obraz/Terytoria 2011.

subsequently can only unfold if the noise is removed and the possibly to focus on a specific object looms. Speaking of a specific object we do not have in mind a concrete one. The specific means the *one qualitatively different; one definite* object. According to Aristotelians, “whoever does not understand a thing which is one, does not understand anything at all” (*qui unum non intelligit, nihil intelligit*).

Dicendum, quod secundum philosophum in IV metaphysicorum, qui non intelligit aliquid unum, nihil intelligit. Per hoc autem aliquid est unum, quod est in se indivisum, et ab aliis distinctum; unde oportet quod quicumque cognoscit aliquid quod sciat distinctionem eius ab aliis. Prima autem ratio distinctionis est in affirmatione et negatione: et ideo oportet quod quicumque scit affirmationem, cognoscat negationem; et quia privatio nihil aliud est quam negatio subiectum habens, ut dicitur in IV Metaphysicor., et alterum contrariorum semper est privatio, ut dicitur in eodem, et in I Physic., inde est quod ex hoc ipso quod cognoscitur aliquid, cognoscitur eius privatio et eius contrarium.

According to the Philosopher, whoever does not understand a thing which is one does not understand anything at all. A thing is one, however, by being undivided in itself and distinct from others. Hence, whoever knows a thing must know its distinction from other things. But the first basis of distinction lies in affirmation and negation. Therefore, whoever knows an affirmation must know its negation. Now, since privation is nothing but a negation having a subject (as is said in the *Metaphysics*), and since “one of two contraries is always a privation” (as is said both in the *Metaphysics* and *Physics*)—from the very fact that a thing is known, its privation and its contrary are known.²²³

Things are only knowable according to how neatly contrasted with what they are not (the “background” Bohm speaks of does not suffice here). A radical “background” is that of non-being. A quasi exemplar idea of it is (according to Thomas) framed in the mind of who tries to understand things personally. Words are only valuable if contrasted with what is dropped on purpose. The silence is no less telling than sounds and has its “metaphysical dimension” too. The first principle of contrasting (being is not non-being) is at work in forming the intellectual concepts. Aristotle writes:

First then this at least is obviously true, that the word “be” or “not be” has a definite meaning, so that not everything will be “so and not so”. Again, if “man” has one meaning, let this be “two-footed animal”; ... for a peculiar name might be assigned to each of the definitions. If, however, they were not limited but one were to say that the word has an infinite number of meanings, obviously reasoning would be impossible; for not to have one meaning is to have no meaning, and if words have no meaning our reasoning with one another, and indeed with ourselves, has been annihilated; for it is

²²³ <http://dhspriority.org/thomas/QDdeVer.htm>

Questiones Disputatae de Veritate, q. 2 a. 15 c. TRUTH by Thomas Aquinas; Questions 1-9 translated by Robert W. Mulligan, S.J. Chicago: Henry Regnery Company, 1952.

impossible to think of anything if we do not think of one thing; but if this is possible, one name might be assigned to this thing.)²²⁴

No surrogate of the natural unity (the integrity of objects) can replace the real one. Moreover, there is nothing inconvenient in claiming that some objects were “more one” than the others. Mathematically, it is impossible. But the mathematical unity is not the unity of being. The latter is that of being indivisible and integer. There are no points in nature, but there are substances whose integrity is to be respected to a lesser or greater degree all depending on how closely they enter human environment. Natural objects can *be one* to different extent. Minerals are divisible without breaching their integrity; for the crystal structure remains visible in small and big parts alike. The more complex a structure, however, the more liable to be unhinged. The integrity of human existence consists, first of all, in the ability (and right) to produce the inner word of the intellect without being negatively affected from without. Humans are “more one” than e.g. plant or animals are. Their right to develop their integrity must be respected. The inner word of wisdom conceived in the intellect is nigher to it than any other object can be. Paradoxically, when advancing towards the Transcendence, humans regain their inner intellectual spiritual integrity. That is why Augustine stated the God is closer to us than we are to us ourselves. The unity of God is the most perfect. The absolute integration of human existence can only result from partaking of/in the inner life of God.

The diagnosis of the modern mass culture presented by Lutosławski is deeply pessimistic. The right for tranquility is trampled uninterruptedly. But the possibly of the inner integration is absolutely indispensable for humans. The only way out is, consequently, to be sought in the participation of/in the Absolute Integrity and Dynamics of the inner life of God.

The social dimension of human existence can only stem from the personal one. But on the other hand, the environment we *actually* live in can both foster and hamper the personal development. The human freedom is a hostage to the social realm humans can only live in. Language, obviously enough, is a social function. Not even a person can ascertain as to the correctness of his/her thinking *practically* without speaking the words of the intellect aloud. Language, by its very nature is interpersonal. Still, it must be tried to be made as personal as only possible so as to express personal thoughts.

The value and intensity of interpersonal relations is proportionate to the ability to form univocal concepts. The concepts determinists speak of are univocal to the degree they are practically coextensive to the objects of experimenting. Consequently, the human personal existence was regarded in the same (quantitative) terms. People were expected to conform i.e. to act in a uniform manner. The unity of that social structure (the numerical one) is what is best expressed in the German Gleichschaltung (co-ordination, synchronization, bringing into *line*). To the contrary, the *natural unity* of a society is full of inner dynamics in producing words of intellect and integrating diverse guises of life without equaling them.

As has already been said, metaphysics is the only possible “philosophy of life”; for it

²²⁴ Metaphysics by Aristotle (IV, ch. 4, 1006a 28 – 1006b 11), Translated by W. D. Ross

can only satisfy the need deeply rooted in humans to unfold their intellectual development. The freedom of the word (strictly connected therewith) depends on existing in the environment able to foster this natural desire. It depends, as has been said, on the possibility to utter words in silence first. Silence, in turn, has a positive meaning of the inner quietude. The so called freedom of thinking is directly opposed to the freedom of word (freedom of speech). It is stamped with indelible idiosyncrasy towards any definite form of thought, advancing at the same time, what was called “thinking” without any peremptory forms. The notion must, however, prove oxymoronic. The fact was denounced some one and half century ago already albeit in the context incomparably more important than that of natural human abilities.²²⁵ The freedom of thinking manifests itself in producing disorder and the information noise.

Two things intertwine in uttering words of the intellect: the silence and the promise (foreboding). In silence, a distant call (vocation) of what transcends the whole realm of human existence can be heard, albeit being hardly perceptible. According to Thomas, all acts of the intellect include potentially the cognizance of the Transcendent Cause, which was e.g. expressed in the words: *Omnes homines vident Deum, unusquisque intuetur Eum procul*.

The freedom of the word, in its primitive social dimension, manifests itself in the right and ability to communicate the word of promise to those most nigh according to the order of natural begetting. The natural begetting (existing in family) partakes of the spiritual one (the begetting of the word of intellect and imparting moral values). To the extent the latter is spiritual, in turn, it partakes in/of the eternal begetting of the Word in God. The freedom of the word postulated in *Dignitatis Humanae*²²⁶ is ordered toward the cognizance of the Word of God. The human personal development must be defined in these terms. It extends to the social realm subsequently only. The perspective of the *cognizance of truth* results, in turn, in

²²⁵SYLLABUS COMPLECTENS PRAECIPUOS NOSTRAE AETATIS ERRORES QUI NOTANTUR IN ALLOCUTIONIBUS CONSISTORIALIBUS, IN ENCYCLICIS ALIISQUE APOSTOLICIS LITTERIS SANCTISSIMI DOMINI NOSTRI PII PAPAE IX.

§ I. Pantheismus, Naturalismus et Rationalismus absolutus.

III. Humana ratio, nullo prorsus Dei respectu habito, unicus est veri et falsi, boni et mali arbiter; sibi ipsi est lex, et naturalibus suis viribus ad hominum ac populorum bonum curandum sufficit.

§ II Rationalismus moderatus.

X. Cum aliud sit philosophus, aliud philosophia, ille ius et officium habet se submittendi auctoritati, quam veram ipse probaverit; at philosophia neque potest, neque debet ulli sese submittere auctoritati.

²²⁶ *Dignitatis Humanae*, 2: Secundum dignitatem suam homines cuncti, quia personae sunt, ratione scilicet et libera voluntate praediti ideoque personali responsabilitate aucti, *sua ipsorum natura impelluntur* necnon morali tenentur obligatione ad veritatem quaerendam, illam imprimis quae religionem spectat. Tenentur quoque *veritati cognitae adhaerere atque totam vitam suam iuxta exigentias veritatis ordinare*. Huic autem obligationi satisfacere homines, modo suae propriae naturae consentaneo, non possunt nisi libertate psychologica simul atque *immunitate a coercitione externa* fruuntur. Non ergo *in subiectiva personae dispositione, sed in ipsa eius natura* ius ad libertatem religiosam fundatur. Quamobrem ius ad hanc immunitatem perseverat etiam in iis qui obligationi quaerendi veritatem eique adhaerendi non satisfaciunt; eiusque exercitium impediri nequit dummodo iustus ordo publicus servetur.

the ability to get to know *some truths*. Truth with the capital “T” (or at least with zero article) is, however, considerably more than the Kantian “idea”. It spawns progress really (and not only motivates it formally). Dignitatis Humanae postulates the freedom of speech, whereas Quanta Cura denounces the freedom of thinking. The latter must advance into both the unpredictable and uncertain.

The *positive* perspective in question is natural, and the science based on abstractio totius is natural to man also. Nevertheless, it is no less stringent by the same token. The very splendor of truth imposes on the intellect the necessity of statements without compelling it in the normal sense of the word. This regards all human thinking indiscriminately.²²⁷ The statements are far from being just subjective and *forced* upon some by the others. It is truth itself – not the positive law – that is so imposing and commanding. The very human intellectual nature necessitates acceptance of some truths. It is the natural way to develop all natural abilities in a *definite order*. The order, in turn, may be that of the intellect only. It is but the intellect that defines the natural in humans and denounces all deceptive guises of “naturalism”.

The human rationality manifests itself in the ability to form signs. The phenomenon (manifestation) is not, however, the essence of rationality, nor its core. The latter is the use of the first intellectual principle enabling forming signs at all – the non-contradiction principle. It enables humans to distinguish the truth and false; good and evil; to build a social order consequently too.

Truth is a good. It is the good of the intellect. Over centuries, as Aristotle has it, truth herself pointed out the right way of scientific discovery. The pathway thereof was that of advancing into the unknown (or the Unknown eventually). The actual horizon of a particular science transcends it at a given point of the human history. Still, at the moment of the consummation of the *natural personal* history (the *καίρως* mentioned above) the general science points out to the Transcendent Cause. Particular sciences deal with some particular truths and some segments of the real world. Scientia naturalis deals with the totality, whereas the supreme science (in the natural order) transcends it nevertheless.

For all its being general, metaphysics is defined as for its subject matter (genus methodologicum). In other words: *it deals with facts, not with possibilities*. That God exists is a fact quite similar to the other ones witnessed in our daily life. Obviously, some facts we face are more important than the others. The fact of losing a job is more important than that of losing a watch. All the more is that of losing the life’s bearings at all. The facts are interconnected and the supreme one (God exists) makes for the human life to be ordered. The possibilities, in turn, inherent in this fact transcend the natural order of things. Metaphysics can never become an ontology (the science of possibilities). The only “ontology” possible is

²²⁷ Dignitatis Humanae, 1: Homines vero cuncti tenentur veritatem, praesertim in iis quae Deum Eiusque Ecclesiam respiciunt, quaerere eamque cognitam amplecti ac servare. Pariter vero profitetur Sacra Synodus officia haec hominum conscientiam tangere ac vincere, nec aliter veritatem sese imponere nisi vi ipsius veritatis, quae suaviter simul ac fortiter mentibus illabitur.

that of the possibilities revealed by Religion.

Wittgenstein's claim that all facts are included in the common container of possibilities cannot be proved. No fact within the container can explain the correlation of the others included in it. The correlation, however, is to be accounted for as it is no less real the facts themselves. The order of a system is conditioned from without. The order is wrought by a cause that transcends it – to lesser or greater extent. The order of the universe is conditioned by the absolutely Transcendent Cause. No one object, however, of the world save man can witness the fact of its being conditioned in this manner.

The aforementioned *angustia philosophorum* resulted from that it was really hard to face the fact squarely. It was extremely difficult to put up with the fact that an infinite distance exists between the creature and the Creator. The gap can only be bridged by the free act of God. Philosophy (no matter how “optimistic”) cannot abrogate the importance of the fact. Optimism (hope) can only be found in religion. For faith gives an impulse able to transcend the chasm. The impulse is that of the will, and spawn by God. The only *natural* impulse of the affects, to the contrary, is that of the aforementioned *angustia*. It does not belong to the supreme science essentially though; albeit the supreme science originates from it indeed (it originates from astonishment, which is an *Angst*). The supreme science is purely theoretical and no affections are needed in it. Metaphysics cannot be equaled to the Heideggerian ontology. But on the other hand, all anxieties humans can possibly foster in their lives can be reduced to that original one; the can be lived down in it. Metaphysics explains the natural confinements of human existence. In this sense it can be “useful” for both those who believe in God and who do not *yet* believe. It is the only possible “philosophy of life”. Its usefulness consists in the possibly to rationalize all anxieties, which cannot be simply repressed. In other words not even anxieties must be deemed “negative” emotions as they can be lived down constructively. Naturally, this does not add up to pampering them.

For all its existential implications, the problem was *not directly* instilled in the notion of the subject matter of the supreme science. To Aristotle's mind, the most difficult question faced by philosophy was whether being is a genus. If so, all beings (God included) would be subsumes under it. According what Plato says in “Sophist”, being is a genus. According to Aristotle, it is not (*ens non est genus*). That there is a definite genus *methodologicum* of metaphysics results from that the proper method thereof is separation (judgment). Now, it is really difficult to judge the distance between things and God uncompromisingly. Science cannot bridge the gap.

The subject matter of the supreme *natural* science must be defined accordingly. There is a tension included in its notion. The tension towards the Ultimate matched with the inability to attain its object. According to Aristotle, the most general tendency of nature is the tendency to exist. Gilson pointed out to a quaint ambiguity instilled in the term of existence. It is only natural that such an ambiguity must have appeared where the intellect is at the end of the tether. Etymologically, EXISTERE means TO APPEAR first of all. This meaning is enhanced by Aristotle. Things imitated God (tended to Him) by the very fact that they came to existence.

Thomas advanced a step further. Not only is the fact that things *come* to existence to

be accounted for but also the fact that their existence is (at least relatively) stable. For things exist for some time indeed, whereas they come to existence in one indivisible (as Aristotle has it) moment of time. (Although being and its sense cannot be defined by temporality, time is an accident and the phenomenon of what lies beneath). According to St Augustine and St Gregory, were it not for the constant and uninterrupted assistance of the Source of being, all beings would have ceased to exist in the twinkling of an eye (in *ictu temporis*). Consequently, the most natural is the tendency to being. For humans, it is tantamount to the tendency to living. All human actions must be assessed as good as far as they foster life. The latter, however, is to be cherished as far as it marks the way towards the Ultimate.

3. Definitions and signs

When abstracting specific forms of various natures (accomplishing *abstractio totius*), the intellect obtains a primitive notion of what things (natures) are. Thomas distinguishes two kinds of intellectual operation: grasping the essences of things and judgment (*STh.*, I, 84, 5; 84, 8).²²⁸ The latter operation can be also called composition and division (of the concepts corresponding to different things or different aspects of things). Forming definitions (the formalization of concepts) is, to be sure, proper to the former operation; still, as for real definitions, a judgment is involved in forming them nonetheless. Real definitions are, to Aristotle's mind, shortenings of syllogisms. Consequently, it could seem that the operation of the intellect would have been altogether simple, were it not for the interaction of something external to it, viz. the imagination. If the intellect might be compared to light (as it was in

²²⁸ De veritate, q. 14 a. 1 c. Intellectus enim nostri, secundum philosophum in Lib. de anima, duplex est operatio. Una qua format simplices rerum quidditates; ut quid est homo, vel quid est animal: in qua quidem operatione non invenitur verum per se et falsum, sicut nec in vocibus incomplexis. Alia operatio intellectus est secundum quam componit et dividit, affirmando vel negando: et in hac iam invenitur verum et falsum, sicut et in voce complexa, quae est eius signum.

De veritate, q. 14 a. 1 c. Et ideo dicit Augustinus, quod cetera potest homo nolens, credere non nisi volens. Patet ergo ex dictis, quod in illa operatione intellectus qua format simplices rerum quidditates, non invenitur assensus, cum non sit ibi verum et falsum; non enim dicimur alicui assentire nisi quando inhaeremus ei quasi vero. Similiter etiam dubitans non habet assensum, cum non inhaereat uni parti magis quam alteri.

Sententia Metaphysicae, lib. 6 l. 4 n. 10. Intellectus autem habet duas operationes, quarum una vocatur indivisibilium intelligentia, per quam intellectus format simplices conceptiones rerum intelligendo quod quid est uniuscuiusque rei. Alia eius operatio est per quam componit et dividit.

Sententia Metaphysicae, lib. 6 l. 4 n. 11. Verum autem et falsum, etsi sint in mente, non tamen sunt circa illam operationem mentis, qua intellectus format simplices conceptiones, et quod quid est rerum. Et hoc est quod dicit, quod verum et falsum, circa simplicia et quod quid est, nec in mente est.

Aristotle), the imagination might be (as it seems) similar to a prism that scatters this light. It is only because of the imagination that the immaterial thinking unfolds in time and space; for it requires some time to express *one definite* (and indivisible) thought departing from a capital letter and ending with a full stop.

According to Thomas, grasping essences in general might be considered as both a principle and the outcome of reasoning, all depending on how distinctly they are grasped (STh., I, 84, 8 ad 1). There is no vicious circle here, as, at the starting point, the essences are grasped without the interaction of imagination, which can only be responsible for errors. There are none to be found in the primitive cognition called *cognitio confusa*; however, there are no distinct notions either (CHAPTER VIII. COGNITIO CONFUSA). Distinguishing might be called *via inventionis* and opposed to *via iudicii*. The former consists in clarifying the notions; the latter – in using the concepts obtained in this way in sentences and syllogisms. The distinction was blurred (or overlooked) by Averroes (as was mentioned in PREFACE 7. and many times thereafter in the present book). Averroes disregarded the very nature of thinking, focusing of how it *appears superficially*. For reasoning unfolds in time and space *accidentally* and the force acting in it from within might be easily overlooked. Averroes considered the imagination the highest cognitive human faculty.

Abstraction (clarification) might be twofold. For its outcome might be either simple, and the mathematical abstraction called *abstractio formalis* adopted, or complex (in *abstractio totius*) and expressed in terms of a genus and specific difference accordingly. Although the two latter are not to be found in *different objects*, they correspond to diverse *aspects* of some particular natures. Differentiating consists, thus, in both grasping these natures distinctly and contrasting them to the other particular natures. Science is about ordering the relations amongst things in this manner. It cannot consist in sheer accumulation of separate data.

The formal abstraction proper to mathematics provides notions that are both simple and formal in the full sense of the word. They are, contrary to those obtained from *abstractio totius*, not *formal with respect* to diverse genera. *Abstractio totius* differentiates according to various grades of formality and entity to be found in nature, whereas *abstractio formalis* drops this diversity. Mathematical abstracts are simple by their very nature of being equally formal.

Thus, although *abstractio totius* uses up the abstracted data fully and provides a complete system of science, two stages therein should be distinguished: a primitive and providing a basic notion called *cognitio confusa* possibly used by *abstractio formalis* too, and forming concepts used in the spoken language. The two types of the aforementioned abstraction consist in processing the primitive data in different manner.

Abstractio formalis clarifies the poorest aspect of natural things, viz. their quantity, whereas *abstractio totius* grasps different aspects and diverse modes of being to the effect of obtaining a stratified formal structure of the universe. The supreme science (metaphysics), in turn, integrates the structure with respect to its Transcendent Cause.

There are two parts in definitions and corresponding to two aspects of particular natures: the specific form and the matter called “common” (*materia communis*) as giving some insight into the continuation of different natures in nature considered as a whole. Analogically, there are two sides of mathematical notions (not grasped thematically in this

science though): there is the formal aspect of things and the so called *materia intelligibilis*. Still, whereas *materia communis* provides at least some premises for seizing specific differences, *materia intelligibilis* is – as it were – “uniform” to the effect of being easily overlooked and the mathematical notions considered as “mathematical beings”; autonomous and independent of the physical reality. For the possible continuation to this reality is only hinted in the notion of *materia intelligibilis*.

At the primitive state of *cognitio confusa*, the intellect grasps something which might resemble a common genus of being so suggestively that Plato called this type of cognition the “synoptic” one (all-encompassing). Aristotle denounced Plato’s claim that such a common stratum of the universe really (actually) existed. The mode we apprehend things is different to the mode they exist. Being is not a genus. However, the outlooks of the human cognition were spotted by Plato distinctly enough. Thomas is precise in stating how it is possible for humans to seize objects simultaneously.²²⁹

What issues: the clarification (*διόρισις*) is, according to Aristotle, similar to dividing this “genus” in a sense. Plato, however, understood the dividing literally, and the genus as divisible in quantitative terms. Consequently, species were assimilated to numbers and the

²²⁹ STh., I^a q. 58 a. 2 c. (Question 58. The mode of angelic knowledge; Article 2. Whether an angel can understand many things at the same time?)

On the contrary, Augustine says (Gen. ad lit. iv, 32): “The spiritual faculty of the angelic mind comprehends most easily at the same time all things that it wills.”

I answer that, As unity of term is requisite for unity of movement, so is unity of object required for unity of operation. Now it happens that several things may be taken as several or as one; like the parts of a continuous whole. For if each of the parts be considered severally they are many: consequently neither by sense nor by intellect are they grasped by one operation, nor all at once. In another way they are taken as forming one in the whole; and so they are grasped both by sense and intellect all at once and by one operation; as long as the entire continuous whole is considered, as is stated in *De Anima* iii, text. 23. In this way our intellect understands together both the subject and the predicate, as forming parts of one proposition; and also two things compared together, according as they agree in one point of comparison. From this it is evident that many things, in so far as they are distinct, cannot be understood at once; but in so far as they are comprised under one intelligible concept, they can be understood together. Now everything is actually intelligible according as its image is in the intellect. All things, then, which can be known by one intelligible species, are known as one intelligible object, and therefore are understood simultaneously. But things known by various intelligible species, are apprehended as different intelligible objects.

Reply to Objection 2. The intellect is informed by the intelligible species which it has within it. So it can behold at the same time many intelligible objects under one species; as one body can by one shape be likened to many bodies.

The Summa Theologiae of St. Thomas Aquinas Second and Revised Edition, 1920; Literally translated by Fathers of the English Dominican Province

<http://www.newadvent.org/summa/>

“foreknowledge” of mathematics deemed paradigmatic. In “Physics”, Aristotle gives a naturalist reinterpretation of Plato’s theory of reminiscence. Aristotle accounts for *genetic* character of *knowledge* as such; for *genesis of the soul* is not as easily retraceable as Plato imagined and must not be confused with the natural way we get to know things besides. The foreknowledge obtained in the immaterial world (before birth) might have been mathematical, but might have been whatever else too.

Cognitio confusa is a habitual knowledge i.e. the one in between pure potentiality of the intellect (as no knowledge is carried from the other world). The Neoplatonic notion of *divisio entis* can be reinterpreted accordingly. Two notions fuse together in it: that of being and that of dividing proper to mathematics. The division of being cannot consist literally in dissecting it, but in contrasting a specific being with its closest background. The latter is only visible in nature, as different grades of the formality of being are to be found but in nature. Should being be taken “specifically” (and what Scotus stipulated: relatively valid), it will be only possible in contrasting diverse (*specific*) modes of being occurring in nature. Metaphysics, which does the job, is called by Aristotle the first philosophy or the first science. It is an architectonics of science not because using the term of being otherwise not-understandable, but by substantiating it in various modes natural things exists. It allows broadening the scope of interest of any science at all. In particular, the first intellectual principle tackled thematically in it (the non-contradiction principle) allows defining things according to their diversity without confusing them.

However, one might stop half way in forming real definitions and put up with a definition through a sign. There a certain similarity to *abstractio formalis* here. For figures, graphs and the like are signs indeed. Generally, definitions through signs provide mere probability instead of certitude desirable in science.²³⁰ Aristotle says that real definitions give knowledge of four causes (the final, moving, formal and material) of things (and a scientific demonstration takes place), whereas those through signs demonstrate them literally (designate them); i.e. point to the enumerated causes according to how they appear to our senses. Causes

²³⁰ *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920

Literally translated by Fathers of the English Dominican Province

Online Edition Copyright © 2017 by Kevin Knight

<http://www.newadvent.org/summa/1032.htm>

Question 32. The knowledge of the divine persons, a. 1:

Reply to Objection 2. Reason may be employed in two ways to establish a point: firstly, for the purpose of furnishing sufficient proof of some principle, as in natural science, where sufficient proof can be brought to show that the movement of the heavens is always of uniform velocity. Reason is employed in another way, not as furnishing a sufficient proof of a principle, but as confirming an already established principle, by showing the congruity of its results, as in astrology the theory of eccentrics and epicycles is considered as established, because thereby the sensible appearances of the heavenly movements can be explained; not, however, as if this proof were sufficient, forasmuch as some other theory might explain them. In the first way, we can prove that God is one; and the like.

are then hinted only, which is to say: they are known but accidentally.

Πότερον δ' ἐνδέχεται μὴ τὸ αὐτὸ αἴτιον εἶναι τοῦ αὐτοῦ
παῖσιν ἀλλ' ἕτερον, ἢ οὐ; ἢ εἰ μὲν καθ' αὐτὸ ἀποδέδεικται
καὶ μὴ κατὰ σημεῖον ἢ συμβεβηκός, οὐχ οἷόν τε·

A sign cannot demonstrate a physical cause univocally, and, consequently, is but a material to be used in science.

ὁ γὰρ λό-
γος τοῦ ἄκρου τὸ μέσον ἐστίν· εἰ δὲ μὴ οὕτως, ἐνδέχεται. ἔστι
δὲ καὶ οὗ αἴτιον καὶ ᾧ σκοπεῖν κατὰ συμβεβηκός· οὐ μὴν
δοκεῖ προβλήματα εἶναι. εἰ δὲ μὴ, ὁμοίως ἕξει τὸ μέσον·
εἰ μὲν ὁμώνυμα, ὁμώνυμον τὸ μέσον,

To use it in this manner analogy must be adopted.

τὰ δὲ κατ' ἀναλογίαν τὰ
αὐτὰ καὶ τὸ μέσον ἕξει κατ' ἀναλογίαν. (Anal. Post., II, c. 17, 99a 3 ss).

Thomas comments on the text as follows:

Expositio Posteriorum, lib. 2 l. 19 n. 1, ss. Postquam philosophus determinavit quaestionem motam, utrum ad existentiam effectus sequatur existentia causae, et e converso; hic inquit utrum ad unitatem causae sequatur unitas effectus et e converso [...].

Contingit enim aliquid assignari pro causa alicuius effectus tripliciter: uno modo, accipiendo causam per se, et sic demonstrative concludendo effectum; alio modo, accipiendo aliquod signum; tertio modo, accipiendo aliquod accidens. Si ergo accipiatur pro causa id quod per se est medium demonstrationis, non potest esse nisi una causa unius effectus in omnibus. Et hoc probat quia medium per se in demonstrationibus est *ratio ultimi*, idest definitio maioris extremitatis. Quae tamen si demonstrari indigeat de subiecto, demonstrabitur per definitionem subiecti, ut supra habitum est. Manifestum est autem quod unius una est definitio. Unde oportet quod unius effectus non accipiatur nisi una causa, quae est medium demonstrationis. Si vero non accipiatur quasi causa inferens, id quod est per se medium demonstrationis, sed accipiatur pro medio aliquod signum vel aliquod accidens, tunc contingit unius effectus accipi quasi plures causas in diversis, sicut patet in exemplo superius posito. Per se enim causa quod aliquid sit vituperabile, est esse praeter rationem rectam. Sed quod aliquid sit superabundans vel deficiens, est signum eius quod est praeter rationem rectam [...]. contingit et id quod est causa et id cuius est causa considerare secundum accidens; sicut musicus per accidens est causa domus, cuius per se est causa aedificator, qui tamen est causa receptaculi latronum per accidens, si contingat hoc in domo fieri [...].

Having settled the question he raised, namely, whether upon the existence of the effect the

existence of the cause follows, and conversely; the Philosopher now inquires whether unity of cause follows upon unity of effect, and conversely. ...

Secondly (99a2), he solves the question by distinguishing. For it occurs that something is assigned as the cause of some effect in three ways: in one way, by taking the *per se* cause and then concluding the effect demonstratively; in another way, by taking a sign; in a third way, by taking an accident. Therefore, if one takes as cause that which is *per se* the middle of demonstration, there can be but one cause of one effect in all cases. And he proves this on the ground that a *per se* middle in demonstrations is a formality of the ultimate, i.e., the definition of the major extreme, which, if it needs to be demonstrated of the subject, will be demonstrated by the definition of the subject, as we have established above. Now it is obvious that of one thing there is one definition. Hence it is necessary that of one effect there is no cause but the one which is the middle of demonstration. However, if one does not take as the inferring cause that which is *per se* the middle of demonstration, but some sign or accident is used as the middle, then it does happen that of one effect several causes, as it were, are taken in diverse things, as is clear in the example given earlier. For the *per se* cause why something is blameworthy is that it is not according to reason. But to be excessive or defective is a sign of that which is not according to reason. ... it is possible to consider both that which is the cause and that of which it is the cause, *per accidens*: thus a musician is *per accidens* the cause of a house whose *per se* cause is a builder, who in turn is *per accidens* the cause of its being a haven for thieves, if this happens to occur in the house. ²³¹

In other words: signs as such reveal the genetic character of human cognition. For *what* things are is (usually) different to *whence* they come:

Summa Theologiae I, q. 13 a. 8 c. Respondeo dicendum quod non est semper idem id a quo imponitur nomen ad significandum, et id ad quod significandum nomen imponitur. Sicut enim substantiam rei ex proprietatibus vel operationibus eius cognoscimus, ita substantiam rei denominamus quandoque ab aliqua eius operatione vel proprietate, sicut substantiam lapidis denominamus ab aliqua actione eius, [...] non tamen hoc nomen impositum est ad significandum hanc actionem, sed substantiam lapidis.

I answer that, Whence a name is imposed, and what the name signifies are not always the same thing. For as we know substance from its properties and operations, so we name substance sometimes for its operation, or its property; e.g. we name the substance of a stone from its act ...; but still this name is not meant to signify the particular action, but the stone's substance.²³²

²³¹ Expositio libri Posteriorum Analyticorum; COMMENTARY ON THE POSTERIOR ANALYTICS OF ARISTOTLE by Thomas Aquinas translated by Fabian R. Larcher, O.P. re-edited and html-formated by Joseph Kenny, O.P.
<https://dhsprory.org/thomas/PostAnalytica.htm>

²³² The Summa Theologiae of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight

The examples drawn from Isidore of Seville are of no account. But generally, all idioms and antonomasias, which use concrete names instead of abstract notions (supposed to be signified by what they are expressed with figuratively) might be such examples.

Now, if signs are what they must be; i.e. mere appearances of things, they might be justly inferred to be more or less so, and things to appear through them more or less distinctly. Still, there are two sides in the sign: the formal (and corresponding to the context it is used in) and the material (corresponding to what it is supposed to signify). Both sides could be enhanced. If the former is so, a formalism might issue to the detriment of cognizance of physical things signs are meant to represent. If the latter is the case, no science, properly speaking is obtained but an image of the world only. Mathematics builds a formalism of its own. Mathematical ideas are clear and distinct (as Descartes stipulated for science in general), but by the very fact of being so their physical counterparts are lost sight of. The ideas used in it are so clear that possibly deemed paradigmatic for science, whereas their ontological status (the relation to physical beings), becomes almost completely unclear.

The role of the sign in general consists in motivating to finding the adequate definition of a thing. Conversely, a thing (an object) might be expected to illustrate some otherwise abstract notion, which is the case in mathematics. E.g. the theory of vectors is normally illustrated in handbooks with what they are applicable to in nature: force, velocity, acceleration and the like. The same is the case with calculi, or the physical sense of the number e (CHAPTER III. 2). Mathematical signs can, in this manner, motivate to experimenting, i.e. finding a physical sense of an abstract theory. Physical theories themselves, in turn, are normally supposed to be confirmed by experimenting.

Still, mathematics abstracts from seizing causes; for *this* formal aspect of things (their quantity) cannot be identified with specific forms. First of all, mathematics abstracts from what makes these forms diverse, i.e. the final cause. But the latter cannot be dropped in philosophy. Albeit cherishing mathematics, Plato himself appreciated the cognizance of what he called “the cause of causes” – the most important one in philosophy (Plato, “Phaedo”, 99AB).

Conversio ad phantasmata mentioned above might be considered as searching for the physical sense of abstract notions. The more a science approaches the core of nature the more salient becomes the work of the final cause in it. The finality of nature becomes more and more prominent according to how complex structures of nature are faced. It is particularly the case with vivid organisms. Their parts are teleologically adapted to each other and are far from being neutral parts of mathematical continuum. An animal turns to the environment in a *privileged direction* as if expecting to find natural facilities prepared in advance there. But no privileged direction is to be found in the three dimensional space. The “space” animals can only live in must be, thus, not isotropic.

The most complex structure of the physical world is the human body. It is, at the same time, marked by most distinct finality of its built (CHAPTER II. 2; Alexis Carrel, “Man the Unknown”, VI, 3). Even Kant admitted that human body is the most beautiful object to be found in nature.

If taking into account the pivotal role of experimenting played in it, physics (in the modern sense of the word) must appear to be justly described by Aristotle as “the middle science”; unfolding in between pure mathematical theories and nature marked by its immanent finality. It stops half way in the cognizance of causes. But on the other hand, this cognizance is a natural complement of its investigations.

Equipped with a specific sign (that of quantity), an experimenter turns to nature so as to ascertain for the physical sense of some ideal notion. He/she turns in *a definite direction*; for the finality of nature is at work there too. Some real objects are supposed to be found and *similar* to those ideal ones only. For no one believes in the real existence of lines, points and other mathematical entities. Those real ones are but an approximation of them; or conversely: the ideal ones approximate to the real ones. Everything depends on whether the genetic or formal aspect of cognition is enhanced. Plato put the stress on the form of cognition and tried to confirm the ontological status of mathematical entities contradicting the deplorable relativism of the then “free thinking” (sophists). Thus, physical beings appeared to him but of a secondary importance and participating of/in those ideal ones. Still, for those who regard some more *sophisticated structures* of the universe (the living ones) and challenge *constructively sophisms* of those strayed from the right direction of discovery, mathematics might appear a simplification of what is incomparably more complex than sheer numbers. Aristotle opposed Plato’s stance, and might be called a biologist (a naturalist) in a sense.

However, the more general an theory, the closer it is to the real nature, in which different objects exist independently of the way we differentiate amongst them with pragmatic objective in mind only. For differentiating might be as well theoretical and the diversity of nature *acknowledged* along with its unity instead of *stipulating* it only (in Plato).

Distinguishing in general is pivotal in science. The objects of experimenting must be distinguished too. The simplest way to do this is arraying them according to their position and magnitude. A relation is grasped then and probably quite symmetrical. Still, physics itself discovers asymmetry in nature. According to *Relativitätstheorie* the world is built of the elements which can only be related to their cones of future instead of a neutral frame of reference. Removing them from their cones of future would equal to reversing causal relations between objects. The third law of Newtonian mechanics, which equals action to reaction, is an idealized boundary case of the asymmetrical casual relation. The validity of the one of the premises of the kinetic proof becomes visible when demonstrating the law being of restricted validity only.

Physics itself cannot put up with quantitative description of the universe. A theory expressed in purely mathematical terms might be illegible as to its physical sense (which was the case e.g. with the Wheeler-DeWitt equation). To the contrary, it was possible (e.g. for Faraday) to write a book on physics without a single mathematical equation in it.

The Aristotelian physics happens to be described as that of qualities and contrasted to

(the allegedly more stringent) “quantitative” one “discovered” by Galileo. In fact, the existence of the mathematical physics was anticipated by Aristotle himself, and on the other hand, qualities played but a subsidiary role in defining things. Aristotle avails himself, to be sure, with the “demonstrations through sign”, and the “signs” were predominantly (but not exclusively) qualities in him. Be that as it may, such like demonstrations are probable only and to be eventually verified. Moreover, it is *psychologically* difficult to discern between the stringent reasoning required in science and that following a spontaneous thread of discovery. For the latter might be of some heuristic value and *provisionally valid*. In the end, however, it must be checked in the light of the first intellectual principle (the non-contradiction principle); for the intellectual certitude is far from being the psychological one. To get to know causes, the analogy must be used: τὰ δὲ κατ' ἀναλογίαν τὰ αὐτὰ καὶ τὸ μέσον ἔξει κατ' ἀναλογίαν.

Thomas juxtaposes the distinction between the demonstration through sign and the demonstration of a cause to the distinction between the demonstration of a cause and the *demonstration that something exists*.

Super Sent., lib. 4 d. 1 q. 1 a. 1 qc. 1 ad 5. Ad quantum dicendum, quod signum, quantum est in se, importat aliquid manifestum quo ad nos, quo manuducimur in cognitionem alicujus occulti. Et quia ut frequentius effectus sunt nobis manifestiores causis; ideo signum quandoque contra causam dividitur, sicut demonstratio quia est quae dicitur esse per signum a communi, ut in 1 Physicor. dicitur; demonstratio autem propter quid est per causam. Quandoque autem causa est manifesta quo ad nos, utpote cadens sub sensu; effectus autem occultus, ut si expectatur in futurum; et tunc nihil prohibet causam signum sui effectus dici.

... the sign as such implies something manifest to us, by which we are led to the cognizance of something hidden. The effects are, on the other hand, frequently more manifest to us than causes. That is why signs happen to be opposed to causes, and the demonstration of a fact (the one through a sign; something common) [to ...] the demonstration of “why it is so”, [to that] through a cause. ...

As was mentioned in PREFACE already, the demonstration that something exists (the demonstrating of a scientific fact) crowns the demonstration of causes proper to a particular science. But the most important fact to be settled in science as such is that a Transcendent Cause of the universe exists. This Cause cannot be *defined* in any science, which is normally supposed in every particular one. For defining implies subsuming a cause and an effect under the same genus, whereas the Supreme Cause transcends infinitely every genus. In the physical world causes and effects are counterbalanced *to some extent*, which is to say: can be subsumed under one common denominator and named accordingly. The relation of them both is asymmetrical thought, and the denominator not as uniform as the three dimensional space. The real objects cannot be isolated for the sake of sheer convenience as the objects of the Newtonian mechanics can. The natural objects cannot be isolated from their natural environment they depend on it as to their existence. Ultimately, the whole system of the universe cannot be isolated from what conditions its existence from without; for it would be

tantamount to annihilating it.

Scientia naturalis grasps causes adequately and defines things in causal terms advancing towards the swathes of reality (the environment) unexplored as yet. Beyond the natural borders of the universe, a Cause that provides the energy to the whole system of the world is discovered. Metaphysics identifies It as the Transcendent Supreme Being. Being transcendent is tantamount to being infinitely more powerful than any possible effects triggered by It.

Now, should the “more” be seized in quantitative terms, sheer probability of the existence of God would issue. Many philosophers (and scientists first of all) put up with the probability (reasonableness) the existence of God. The certainty of the proof of the existence of God happens to be despaired to obtain.

The contrary is the case in Thomas. Does the existence of world equal the power of God? No. Is the creation the universe necessary? No. However, the existence of the universe equals the *reason* of creation and this suffices for the necessity of the proof of the existence of God. Does universe stem from God out of necessity? No. Does it reveal the existence of God out of necessity? Yes. God could not create a world which would not bear the marks of His (rational) action. This would not behoove His dignity. He cannot deny Himself and produce some absurd sequences of events. The natural sequence is necessary if viewed departing from effects to causes. The inverse sequence was considered by Leibniz and determinism followed. Neither, however, is God as “omnipotent” as imagined by Ockham. In Luke’s Gospel, a significant qualification of God’s omnipotence is announced in the words: [37] Because no word shall be impossible with God.²³³ Any word (any intelligent plan of the universe) lies – according to Thomas, who comments on the text – within God’s power, whereas any absurd one is discarded. A Christian believes in the Word of God, which is considerably more than following Avicenna’s *manifest signs* of God’s existence (*signa manifesta*²³⁴).

It is admissible to put up with signs for some time; for the lack of a better means of cognition. However, a definition is indispensable in the end. For a believer, defining his/her existence in the Word (dissimilar to be sure to the ordinary parts of the definition) is possible; nay, pivotal. But generally, a firm basis for every existence is crucial. Signs might profit, but never suffice. They might be more or less convenient in the cognizance of causes. They can reveal essences more or less distinctly.

The appearances are, which is rather obvious, signs of something to be known. However, they reveal, at the same time, *the manner* things are known. These two aspects are normally intertwined in human life. Man is a social being and signs presented by the others are a natural way of getting to know causes too. The situation might be generally described as

²³³ Gospel According to Saint Luke; Douay-Rheims Bible.

<http://www.drbo.org/chapter/56003.htm>

37 ὅτι οὐκ ἀδυνατήσει παρὰ τοῦ θεοῦ πᾶν ῥῆμα.

<http://www.nestle-aland.com/en/read-na28-online/text/bibeltext/lesen/stelle/52/>

²³⁴ Avicenna Latinus, op. cit., VIII Ch. 5, 411, 42-45; I Ch. 1, 5, 78-79.

that of a dialogue. Whereas some aspects of human “behavior” are to be relegated to the realm of e.g. physiology (Thomas calls them *actiones hominis*), some of them (and opposed to the former) are to be called “human” in the proper sense of the word (*actiones humanae*). Dialogue, broadly speaking, is such an action and reveals potentially human rational nature.

Contrary to what might appear superficially, the dialogue is not a typically modern philosophical topic. It was analyzed by Aristotle in a broader epistemological context; viz. in the context of the original rational human activity. Aristotle sees the danger of destroying all human bonds if hampering this activity (the freedom of the word).

First then this at least is obviously true, that the word “be” or “not be” has a definite meaning, so that not everything will be “so and not so”. Again, if “man” has one meaning, ...; if “man” means “X”, then if A is a man “X” will be what “being a man” means for him. ... there might be also several other definitions if only they were limited in number; for a peculiar name might be assigned to each of the definitions. If, however, they were not limited but one were to say that the word has an infinite number of meanings, obviously reasoning (λόγος) would be impossible; for not to have one meaning is to have no meaning, and if words have no meaning our reasoning (τὸ διαλέγεσθαι) with one another, and indeed with ourselves, has been annihilated; for it is impossible to think of anything if we do not think of one thing; but if this is possible, one name might be assigned to this thing.). Let it be assumed then, as was said at the beginning, that the name has a meaning and has one meaning; it is impossible, then, that “being a man” should mean precisely “not being a man”, if “man” not only signifies something about one subject but also has one significance ²³⁵

Two notions (of λόγος and of τοῦ διαλέγεσθαι) are coupled and the personal dimension of dialogue enhanced.

Definitions (as principles) cannot be defined. There is, however, the first intellectual principle all definitions can be deduced from – the non-contradiction principle. The principle is responsible for the formalization of concepts, and defining the form of humanity, which looms behind the phenomenon of dialogue, too. The dialogue is a specific human event. The humanity active in it can be experienced from within, as anyone entering a dialogue is, at the same time, its author and object. Humans can, in this manner, auto-define the form the dialogue appears in and the present time they live in, consequently, too. We cannot enter a dialogue with e.g. Aristotle literally speaking, but on the other hand, the possibility lies open to hark to his words as diligently as only possible. Hearing (broadly speaking) is a privileged sense in this respect. The written words, on the contrary, are only relevant if spoken out aloud and taken responsibility for. They are not (of themselves) endowed with the power to “reveal” anything at all as Husserl seems to claim when speaking of ἀποφάνσις. They are rather (as Plato rightly observed) “powerless”. The masters of the past centuries must not be silenced

²³⁵ Metaphysics by Aristotle; translated by W. D. Ross; Provided by The Internet Classics Archive.
<http://classics.mit.edu/Aristotle/metaphysics.html>

Book IV, Ch. 4; 1006a 28-1006b 16.

nor read with a hermeneutical key (Gadamer); for the same lot might befall eventually all humans indiscriminately, and the present time they live in can be treated with the same arrogance. Three consecutive meanings are included in the aforementioned parrhesia: the openness; the self-confidence and trust. Words if spoken thus are a necessary form and fulcrum of the social structure.

4. Intentionality of nature and the maximum of freedom and creativity

According to Thomas, the most formal in things is being (*esse ... est formale respectu omnium quae in re sunt*; *Summa Theologiae*, I q. 8, a. 1, c.; *maxime formale omnium est ipsum esse*; I, q. 7, a. 1).²³⁶ Thus, the formalization of concepts depends on the adequate understanding of being (existence) and the first intellectual principle, which tackles being thematically (the non-contradiction principle) too. Moreover, the right formula of the subject matter of the supreme science (in Thomas: *ens inquantum est ens*) is of no less importance here.

The Aristotelian idea of the epistemological order and hierarchization of sciences, and, generally, the idea of ordering each realm of human existence according to the first principles, is apparently at odds with the claim that the right to interpreting a theory (in the modern sense of the word) should be reserved for its creator. It was implied that a theory was a closed whole, both unanalyzable as to its parts and isolated from the other “theories” treated on equal terms. The idea of “fundamental intuition” (inherited from the late Scholasticism) is at work there.

The objective bearing of the parts of a theory (their real definitions) on the real world would be broken if the bearing of the totality as such had been the only possible. The conviction that particular philosophical tongues are untranslatable is a direct consequence of this stance. It adds up to saying that the subject matter of philosophy were not things possibly definable, but ideas bound to mediate the cognition of these things.

Those ideas were bequeathed to modernity by Scotus. The order of what is merely

²³⁶ “... being is innermost in each thing and most fundamentally inherent in all things since it is formal in respect of everything found in a thing”; “... being is the most formal of all things, as appears from what is shown above (I:4:1 Objection 3).

The *Summa Theologiae* of St. Thomas Aquinas Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province Online Edition Copyright © 2017 by Kevin Knight.

<http://www.newadvent.org/summa/1.htm>

possible to exist was the immediate object of the intellect; whereas the perception of physical things only *occasioned*, but never *triggered* the intellectual cognition. The sensual cognition informed about facts, but never about what was stable and unchanging. The latter was the subject matter of the supreme science, and of all others consequently too. The intuition of facts (a foreboding of existential possibilities) occasioned broadening the scope of scientific interest. Two things: an intuition of being and the self-consistency of a system would have decided about the validity of a theory.

The line of reasoning Scotus adopted is understandable, which is not to say: acceptable nonetheless. Some aspects thereof are right indeed. The progress of science must consist in broadening the gamut of existential possibilities of human mind. Science must reach to the realms unexplored as yet. For Scotus, metaphysics is at the apex of these possibilities, as its subject matter (*ens inquantum ens*) encompasses them all. Still, the proper understanding of the quoted formula posed a serious problem to Scotus himself. It seems that this challenge must be faced (and never shunned) by those who try to face the problem of the progress of science squarely; i.e. see it in a broader perspective. The problem of the formula of the “possibilities” must not be underestimated. It was in fact inherited by Descartes, Wolff and Brentano and those who followed suit in the 20th century. It is not about denouncing the aforementioned thinkers as those of a secondary importance, but about acknowledging the real influence (either good or bad, which is a separate question) Scotus exerted upon modernity. Many advocated for the influence having been both positive and huge (L. Honnefelder, “*Scientia transcendens*”).

Thus, the problem of interpreting Scotus’ thought aright consists in settling how the human intellect is able to advance in pursuing the aforementioned possibilities. According to Scotus, the horizon was infinite, as there was no essential difference between the finite intellect of man and the infinite intellect of God.²³⁷

According to Gödel, a complete system of axioms a priori is infeasible. In this case, the “infinite” equals “indefinite”. Both privation and excellence might be included in the term of “infinite” (as in the Greek ἀόριστον). For a theologian (which Scotus was, no doubt) the excellence of the attribute might have been obvious. The actual broadening of the possibilities must advance ad infinitum; for according to the author of *Reportaria Parisiensia* (and Kant, also), the progress of science is the indubitable fact. Really, it was the only fact to be peremptorily settled. It is quaint, nevertheless, that the fact had to be the only scientific one. For according to Aristotle, there are as many scientific facts as many are indubitable (certain) conclusions drawn by science. Still, the positive meaning of infinitum could only exist in a theological context of the omniscience of God. Once the context was dropped (the *fact* that must have occurred sooner or later) the infinitum assumed the privative meaning, and the “fact” that it was unachievable for man enhanced in Kant’s *Critique of Pure Reason*. As for those who (as Kant) assumed the mathematical method as paradigmatic for science, the meaning must be suggestive; for (as Thomas says), the *mathematical* infinity results from the impossibility of numerating parts after parts. Should metaphysics (the supreme science) be

²³⁷ É. Gilson, „Johannes Duns Scotus. Einführung in die Grundgedanken seiner Lehre“, über. von franz. W. Dettloff, Düsseldorf 1959, 565.

assimilated to mathematics, its subject matter must become as illusive and evasive as the Kantian “transcendental ideas” and the gap left by them yawn despair and nauseam. Although Kant “succeeded” in “deducing” formal concepts, he failed to invent any innovative ones.

According to Aristotle, metaphysics gives the maximum of existential possibilities. The progress of science always consisted in discovering as possible what had appeared impossible. The only problem consists in settling the nature of the progress. In other words: the problem is how *to name* these possibilities so that the name might express their nature.

The problem of naming things in general is not a linguistic one. Not even analyzing the extent of the possibility of naming (Chomsky) is the problem of naming as such. It is the philosophical problem of defining touched upon by Aristotle in *Metaphysics* IV, Ch. 4. It is the problem of how any language (the scientific one included) can originate from the sensual experience, which is to say: can be used rationally and responsibly.

Descriptive grammar enumerates morphological categories of words. Philosophy too can provide a system of categories. They are ten of them in sum, according to Aristotle. The first one is the category of substance, but – paradoxically – it is at the same time marked by some ambiguity. According to its etymology, sub-stance is an individual that stands-under-accidents. Still, substances are not definable according to accidents they support but according to species (the *second* substances) they substantiate. Genetically (to Aristotle’s mind), species can only exist (be) in individuals. Thus, substance might well be considered being first of all. But the question *why* it is so was not answered by Aristotle. Neither, consequently, was the problem of being as such solved (STh, I, 44, 2).

According to Scotus, it could not have been solved by Aristotle, nor for that matter, by any “pagan” thinker. The natural origin of concepts was inconceivable. In the subject matter of the supreme science (being as being), the “as” must not be taken to mean reduplication (reduplicative), since it would imply its natural origin, but specification (specificative). The former (incriminated) understanding was imputed to Thomas (*Metaph.*, n. 24; *Quodl.*, q. 3, ss. 76- 8; L. Honnefelder, „*Ens inquantum ens*”, p. 102, 103); for the causal understanding was (allegedly) implied (which was not justified). Scotus accepts the latter understanding and rejects what he calls “Greek naturalism”. Some price, however, had to be paid for it. The being of Scotus was assimilated to Avicenna’s *mavjud* – entity. It originated (emanated) from God’s intellect out of necessity and all intellectual possibilities were included in it (or were evolving towards it). The order of pure possibilities was the secondary object of God’s intellect. Can it be, thus, the *natural* object of the human intellect? Scotus apparently rejects the adjective. But then, what is the natural basis for accepting the Revelation? What is its natural motive? The cornerstone of rationalism consists in denouncing such like motives, but the stance is not directed against theology as such, as it might seem. It is directed against the *possibility* of its existence and thus against the freedom of word (freedom of speech) and the unhampered intellectual development in general. The problem of being had remained unsolved, much to the detriment of human understanding as such.

There are texts by Scotus in light of which the problem might appear to be plain. Scotus rejects the real distinction between the essence and existence in things. The texts might have been directed against Thomas (for whom the distinction is pivotal), but it is almost

certain that some intermediaries (e.g. Giles of Rome) influenced the way Scotus understood the distinction. Be that as it may, one is certain at least; viz. the verbal formula of the subject matter of metaphysics. The Thomasian one differs really from that Scotian. In the latter, a significant omission of “est” in comparison to Thomas’ “ens inquantum est ens” occurs. The formula reads in Scotus: “ens inquantum ens”. Existence is not included therein.

For those who are inclined to draw simple distinctions, the “est” testifies to that Thomas’ metaphysics is that of existence, whereas the Scotian is that of essence. The stance was espoused by Gilson. But what about Aristotle? Is his stance existential too? For it is realistic no doubt. The claim has been commonly rejected. But then, what is the difference (if any) between Scotus and Aristotle? Or rather there is none, and both can be labelled “essentialists”.

Another possibility lies open, nonetheless. Thomas says that it is necessary to accept, at the starting point of the science, *that something exists*. It might seem that existence in question is affirmed by the existential judgement. But Thomas follows (quotes) the doctrine of Second Analytics here. The so called Existential Thomism stipulates existential judgments as a guarantee of philosophical realism. Does Aristotle argue for realism in this way? Susanne Mansion advocated for theory the existential judgements present in Aristotle. Still, the majority of historians of philosophy reject such an interpretation and understandably enough. The interpretation of Susanne Mansion seems to be far-fetched. The relation of Thomism to Aristotelianism is, thus, no more clear than before.

Some (Kremer) claim that Thomas follows either Aristotle or Neo-Platonists (where the “genuine” notion of being was to be found). The claim, however, adds up to that Thomism is syncretic and not self-consistent. The imputation is so serious that must be thoroughly proved, which, however, Kremer failed to do. Consequently, not that much ambiguity of the texts appears as rather a slovenly manner they were read.

The stance of Gilson is less controversial. In “Unity of Philosophical Experience”, he claims that everyone is free to accept some primitive intuition of principles, but once a definite notion of them (of being) accepted, all conclusions must (or at least ought to if a philosopher should be treated as a serious one) be deduced out of necessity from them. Thus, when commenting on Dionysius, Thomas (fully aware of the fact) explicated other principles than when commenting on Aristotle. Indeed, in the commentary on Liber de Causis Thomas distances himself from some Neo-Platonist theses, remaining however, a loyal reader of the texts. The problem is that when commenting on Aristotle, he almost never does so. Moreover and just to the point: Gilson’s epistemological stance is in fact that of Scotus (which Gilson at least indirectly admits), and contrary to that of Thomas. According to the latter, all people use the same *natural* principles, but errors can only occur in explicating them. Idealism is such an error; not a fundamental option.

According to Gilson, Thomas (the “genuine” Thomas) gained some unique insight into being. Maritain speaks of an intuition there. The problem is that Thomas says nothing of the “intuition”, whereas Scotus claims that people have some indistinct intuition of an individually existent being at the starting point of metaphysics. Gilson shirks the term of intuition, but says nonetheless that the theory of existential judgments is the same in Scotus

and Thomas.²³⁸ The claim might be (so some extent at least) substantiated in Scotus' texts, but there are none by Thomas that can be read so. If the term of "existential metaphysics" should be used, it must not be so because of a luckily gained insight into some fundamental principles, but because its being systematically accomplished; i.e. taking into account *all possible modes of being to be found in nature*.

Now, if "ens inquantum est ens" cannot be translated as "a being as existent", what does the formula mean indeed? To answer the question let us juxtapose some essential philosophical ideas (some – if you like – "principles", which can be integrated into one system indeed):

- 1) The concept of intentionality widely accepted in the 20th century's philosophy;
- 2) The leading theme of the Platonian Phaedo (97E): philosophizing as searching for "what is better"; for the final cause;
- 3) The unification of the system of sciences;
- 4) The position of metaphysics (the first philosophy) in this system; its being the most general science at the same time.

As was mentioned above, Thomas advances the pathway of Aristotelianism and formulates the notion of the subject matter of the supreme science in more general terms than Aristotle did (*Summa Theologiae*, I, 44, 2). Aristotle seems at least to imply that this subject matter is substance (Thomas commenting on *Metaphysics* says that metaphysics is "*scientia substantiae*"). The most general in Aristotle seems to be that: coming to existence. Still, the substance is, at the same time, that of a definite species. What is then, the most general and the most stable in nature? It seems that species must be eternal and their existence protracted in time. According to Thomas, the existence is not that much *protracted* as rather "intensified". No "Greek naturalism" is contested here. To the contrary, Thomas' metaphysics is more naturalistic than the Aristotelian. Everything depends on what is spotted to be most general to be found in nature. The unity of the universe and the unity of the system of sciences, each of whom tackles a part of the system must be explained. According to Plato (*Timaeus*), the universe is best wrought by the best Maker. It is not the best possible (Leibniz); for the object of creation cannot equal the power of the Creator. Thomas advances Plato's line of reasoning in that he claims that the world is best wrought; it cannot be made in a better manner. In *Protrepticus*, Aristotle tackles the same problem from a purely naturalist point of view. The general (to his mind) tendency of nature (what "is better") is that of tending towards existence. Still, the ambiguity (as Gilson points out) included in the term is meaningful. For TO EXIST means both to "Have objective reality or being", and "Occur or be found, especially in a particular place or situation".²³⁹ "The objective reality" is a term to

²³⁸ É. Gilson, „Johannes Duns Scotus. Einführung in die Grundgedanken seiner Lehre“, übers. W. Dettloff, Düsseldorf 1959, s. 570.

²³⁹ <https://en.oxforddictionaries.com/>

be found in (and drawn in fact from) Descartes' "Meditations"; whereas the idea of "particular existence" is at odds with that of the supreme and general science. There is a certain relation between the intentional being or – if you like – "objective reality", and what sustains it (comes to existence). Aristotle tried to settle it. Descartes gave up.

According to Thomas, all things intend existence, not in the sense of living the present time, but in the sense of their existence being intensified by the influence of the First Being. In this sense only, it is better to exist than the opposite. The intentional appears to be in the core of nature. Moreover, and going beyond Aristotle somehow, the intensity of existence must not consist in the eternity of things but in their absolute dependence on the First Source of being. As long (as much) as they exist they tend to the First Source. They need not be everlasting to depend so radically on the First Cause.

The formula of the subject matter of the supreme science says that everything is intending being according to the way it is able to. All modes of being must be included. Metaphysics is existential not because of a privileged intuition (or whatever the like) but because of encompassing all modes of being. Being all-encompassing in this manner is, at the same time, tantamount to being an architectonics of science and responsible for integrating the system of them (and all human life in the natural order for that matter too). It is an architectonics because of using most effectively the first intellectual principle (the non-contradiction principle). This is the only one absolutely natural principle of human life and activity (the scientific one included). Moreover, as being is most formal, metaphysics is most formal too and responsible for formalization of concepts used in science.

The non-contradiction principle is the first intellectual principle and, at the same time, the most – so to say – inclusive one. Each individual intellect is potentially a competent judge of concepts and inferences presented in a science. No authority can replace it. The authority has but a pragmatic (relative) value. It cannot be the last instance in the natural order of cognition, but must be so in the supernatural one indeed. Generally, the position of an authority (in a man-wrought science) is rather uncomfortable; for it puts one entrusted with it in an awkward situation of being obliged to answer all questions, and those most "naïve" first of all.

The excessive (an unjustifiable) importance attached to the authority in science must prove deadly to it in a long run. It is contrary to the principle of economy of thinking to demand and explore the theories (totalities) regarding them as autonomous wholes. Practically, it must lead to the philosophy of the end of philosophy, but of the end of science too. Postmodernism is a cancer gnawing at the tissue of the Civilization. But its existence (in the narrower sense of the word) was something of a Hegelian necessity once the principles mentioned above were laid down. Processing the data included in separated systems is practically infeasible. The only way to process them is to judge them as *separated from* those systems, which is to say: defining them. Metaphysics is an architectonics in the sense of separating them in such a way. It is the principle of freedom (being independent of human authorities). The intellect is the root of freedom: *Intellectus est radix libertatis*. It fosters the unhampered development of all forms of human existence (integrating them at the same time). To the contrary, fragmentation and excessive specialization might only profit those

materially interested for some time, but never science as such and never for a long spell of time. The genuine scientist aims at the disinterested pursuit of truth.

CHAPTER VII. DIVERSITY OF BEINGS

The pivotal role in formalizing concepts is played by the non-contradiction principle. According to Thomas, it is the principle of differencing amongst *beings*, albeit Aristotle (Metaph. IV) speaks rather of *things*. Moreover, not even the word of *res* (things) need be used (as the notion might appear – as it were – “philosophically burdened”); for each science in general uses this principle when considering any *objects* whatsoever. Be that as it may, the full purport of the principle is only visible in the first science; i.e. metaphysics. In fact, the principle shared the lot of metaphysics and happened to be actually rejected along with it (by Kant, for instance). But distinguishing in general seems to be indispensable to science, and rejecting the principle thereof – disastrous to it. Hence, the problem of diversity of objects is principal in any science and must be tackled as the elementary one apart from the problem of metaphysics, in which the first principle is grasped thematically.

1. The separability of objects in science

The uncertainty principle is usually expressed in the following manner:

$$\begin{aligned}\Delta p \cdot \Delta x &\geq h; \\ \Delta E \cdot \Delta t &\geq h;\end{aligned}$$

The indeterminism of nature happens to be believed to be enshrined in the principle. Still, it will be tried to be proved that not that much the “natural uncertainty” is faced here, but rather the uncertainty originally inherent in our cognition of nature and possibly removed if considering nature from another coign of vantage, although no less rational than the one used in physics.

According to Einstein: “The belief in an external world independent of the perceiving subject is the basis of all natural science”. (Der Glaube an eine vom wahrnehmenden Subjekt unabhängige Außenwelt liegt aller Naturwissenschaft zugrunde.). Astonishingly, Einstein speaks of the “belief”, and the word was used by the philosophers *ex professo* (Husserl) too.

Everyone – according to Husserl – cherished a spontaneous conviction as to the real existence of the outer world. True, everyone must harbor the conviction that *some things* exist; otherwise his/her existence in the closest environment would be impossible. But the environment is not as vast as the totality of things called “reality”.

Paradoxically, science was stipulated to be founded upon a belief, but perhaps nothing else was to be expected after assuming the idea of the “philosophical faith” Kant invented. Husserl was honest enough to try and “bracket” the conviction in question; but the fact is that something was supposed to be liable to this philosophical procedure. It was Descartes who postulated the existence of God (to be “bracketed” in the Husserlian “Ideas”) so as to *use* His veracity to guarantee the reality of the world. The fact is meaningful that such a bizarre hybrid of science and faith was wrought by those who claimed the name of rationalists. “Reason” sounds of an irony there.

It seems that rationality as such should be aware first of all of the neat boundary between what could be known and what could not so. Each science must be aware of its restrictions for to be what it is supposed to be: the work of the intellect.

If analyzing the purport of uncertainty principle, apparently, the boundaries of a certain type of cognition are faced. There is something “beyond”, no doubt, but there is no reason to discarding the possibility of elucidating this realm instead of putting up with a “belief”. Instead, a reasoning must be tried to be pursued even if a faith was provisionally (for purely pragmatic reasons) assumed as useful. The boundary equations quoted above must be tried and interpreted in the light of science which envisages nature as such; not the nature as an object of experimenting (and supposed to be mastered). On the other hand, faith (properly so called) is a theological virtue; it shares the common characteristics of all virtues. Virtue is a mean between extremes of deficiency and excess, which are vices. There is an excess in it (superstition) and deficiency – unbelief. Obviously, the “philosophical faith” is the former. After Kant “had ... to remove knowledge, in order to make room for belief” – the latter, the superstition (a social compulsion) heavily weighed upon the shoulders of the contemporary man; a yoke which must be removed for the sake of the unhampered intellectual development.

For centuries, it had been believed that momentum and displacement could be measured as precisely as only wished. E.g. if an object whose mass was 100g could be measured, an object whose mass was – say – 100mg could be too, and that of 100μg analogically. And it was believed that magnitudes could be downscaled ad infinitum. The conviction proved to be false. There are some – let us call them so – “small” objects, which “behave” not so predictably as wished. Some variables are not simultaneously measurable. What had been believed proved to be bogus. There is no possibility to “pin down” a “small” object; to isolate it from its closest environment. Some natural properties proved to be “coupled” and, in fact, similar to the formal and material principles discovered by Aristotle.

Quantum entanglement is a physical phenomenon consisting in that some objects are “paired” or “coupled” in a natural manner. The “information” about one of them is transmitted with the speed faster than that of light. In other words: there is no causal relation between them (the “information” the special theory of relativity speaks of is such a relation); for matter and form are not *external* causes. Objects are analyzable to the degree the formal

and the material in them can be ascribed to diverse objects, but no further. The moving and the moved prove to be eventually separate objects. Things cannot be called causes of themselves, nor parts be so of a totality. If analyzing the phenomenon of motion, we stumble upon the unanalyzable principles; upon natural objects, in which the matter and the form are *related*, but not diverse. A relation of the moving and the moved (of the formal and the material in motion) is perceived first (is given simultaneously), but if analyzed, it reveals the existence of diverse objects (the extremes it is founded upon).

The phenomenon of quantum entanglement is – contrary to what might be believed – not restricted to objects called small in the common sense of the word. Recently, some researches have been carried out that prove living organisms “behaving” in the way similar to elementary particles. The smell perception has been analyzed and the way migrating birds perceive the intensity of the magnetic field of the earth. These organisms proved to be quite dissimilar to “aggregates” of particles luckily assembled in a mysterious way. Their teleological structure becomes visible in the moment one part reacts as if aware of the others. Obviously, they are not conscious of each other in the normal sense of the word, but the way they act shows that they are adjusted by some outer principle working with a definite end in mind and aware of it. Nor, for that matter, do they “behave” properly speaking; for *acting* aims at a definite end. Contrary to what Descartes believed, objects cannot be “machines”, as definite principles and ends of their actions demonstrate some relatively autonomous structures. The same line of reasoning observes a fortiori in humans: there are definite principles of actions: virtues and vices are such; and definite ends too; for no one can act without a certain objective (motive) in mind; albeit that objective is an end in a weaker sense of the word only (it can be an apparent good; not genuine one).

Should the term of “real” be juxtaposed to that of “elementary”, the objects identified as real cannot be possibly fragmented in disconnected parts; nor quantitative ones too; for one of them is always formal towards the other, which cannot be the case with mathematical objects.

An example of quantum entanglement is Pair Production. Some pairs are naturally related (Thomas calls them *relativa secundum dici*; for their whole being consists in being related). On the other hand, the conviction that everything in the world is related to the totality indiscriminately is baseless. Obviously, our human senses are related to some objects only; i.e. are naturally adjusted to them. Senses are receptive and not able to isolate objects – contrary to experimenting, which cannot dispense of treating them in such a way, which is to say: arbitrarily. In general, all human artifacts are, to some extent at least, discrepant to the harmony of nature.

Experimenting consists in settling precisely (and arbitrarily for that matter too) the object and the environment. Thus however, one might fall prey to an illusion that both are created in a sense, and *being isolated* might be believed to equal TO APPEAR and TO EXIST consequently too. Nature, as was said above, might be believed to be an experimenter too.

Now, such a creation proved to be impossible for elementary objects at least. They are naturally adjusted, and quite dissimilar to the Leibnizean “aggregates” which could have been constructed out of small “bricks”; the allegedly real constituents of the universe. They

happened to be named differently, but they all share the common characteristics of the Kantian Ding an sich – something whose existence “cannot be doubted”, but *believed* only, and never proved. Kant pretended to analyze the basic experience, but failed to substantiate the basic assumption (the belief) in the existence of Ding an sich. In other words: be it phenomenology, Kantianism or any other kind of phenomenalism, what pretended to be the source experience in it, was dependent upon the belief in existence of “matter” or another substratum of the universe. If Husserl afforded “bracketing” the belief, it was only because he deemed phenomenology a desirable *addition* to the otherwise unilateral stance of scientism. Thus, an Ersatz of differentiating was adopted; for the human subjectivity was defined by the absolute opposition to what it is not; to non-I (Fichte).

What is really basic in the perception of the outer world is *the coexistence of entangled* parts of natural objects. The coexistence is manifold and variegated according to various grades of perfection of natural beings. For the moving and the moved coexist really, but to some degree only. Moreover, the analysis subsequent upon the perception is far from being an “accumulation” of the sense data. In a sense, it is just the opposite: we analyze rather than accumulate. Accumulation is likely to impede understanding, and the problem of the metabolism of information seems to be insurmountable.

Even the feeblest forms of (animal) cognition consist in discomposing the primitive data in determinate manner and distancing from the outer world so as to settle a constructive existential relation to it. The durability of animal’s existence is propionate to preserving a constant amount of vital energy throughout the whole life (which can be defined just in terms of this preservation). This, however, cannot be done without setting down the precise relation to the outer world (environment). The same a fortiori must hold true as for the most perfect animal cognition: the human one. It consists in distancing itself from the entire material world. At first, the sense data are entangled (*confusa*), but the intellectual activity (a mark of human dignity) consists in differentiating them as neatly as only possible. Originally, sense data are undetermined and the path of discovery hinted only, but the subsequent cognition consists in determining them; in differentiating amongst objects. Human existence is impossible without a *constructive discrimination*.

Animals differentiate to a definite extent; and the animal instinct determines the border. The animal existence is restricted to a certain realm of the world. The human one is not. The border of its existence is the border of the universe, and the existence itself harks back to the Outer Side of the universe. Human existence is distinguished by the intellect, which is only able to transcend the material.

It is obvious that mathematics provides *some* discrimination. Still, the statement taken in its naked wording implies an *action* and the starting point thereof consequently too. Thus, the starting point ought to be given the proper name. It was indeed in Thomas and Aristotle; for the primitive sense data were said to include potentially (*confuse*) (in humans) the intellectual information to be extricated therefrom. Still, as actions about to be accomplished differ, and those of the intellect are no less natural than those of natural agents, its actions must differ too obviously enough. There are, in other words, different types of the actions (*abstraction*). *Abstractio formalis* accomplished by mathematics is one of them.

Each human activity requires a certain discipline and the degree of professionalism is measured by its stringency. The same holds true as for mathematics. Moreover, in the Middle Ages, it was called a discipline par excellence; for it requires a special and unique discipline. Still, the comprehensive intellectual development cannot advance in just one direction without availing itself of others. The development must be inclusive of as many forms as only possible. Even if a discipline requires renouncement, it, nonetheless, requires openness for conclusions drawn by other sciences. Indeed, *self-denial* implies resigning from a personal (unilateral) point of view.

It is proper to mathematics to regard what is distinguished in the aforementioned manner on equal terms. For no parts of continuum can be privileged. The potential in it, if ever, is that of infinite background the mathematical species are contrasted against. If, on the other hand, related to natural things, they can but designate them just as if delineating them on the imaginary background of (infinite) reality. A place might be different; by the manner it is so (placing) is uniform. That is why mathematical entities cannot differ as radically as common sense objects must in everyday life. That the latter should not be so, for the sake of stringency, sounds rather uncanny. Practically, everyone must distinguish objects one lives amongst. The imperative is not only pragmatic, but ethical too, and first of all so.

The mathematical objects form theories (in the modern sense of the word). The theory might be checked experimentally, but nothing save probability can be obtained therefrom. They *demonstrate* things literally, instead of demonstrating them scientifically. Hegel, on the first pages of *Phenomenology of Spirit*, shows that any particular object demonstrated in such a way can be replaced by another one. The opposition between the particular and universal in this paradigm of science is insurmountable. The theory in the modern sense of the word is considerably less than the theory of Posterior Analytics which provides certitude.

Reason may be employed in two ways to establish a point: firstly, for the purpose of furnishing sufficient proof of some principle, as in natural science, where sufficient proof can be brought to show that the movement of the heavens is always of uniform velocity. Reason is employed in another way, not as furnishing a sufficient proof of a principle, but as confirming an already established principle, by showing the congruity of its results, as in astrology the theory of eccentrics and epicycles is considered as established, because thereby the sensible appearances of the heavenly movements can be explained; not, however, as if this proof were sufficient, forasmuch as some other theory might explain them.²⁴⁰

Ad secundum dicendum quod ad aliquam rem dupliciter inducitur ratio. Uno modo, ad probandum sufficienter aliquam radicem, sicut in scientia naturali inducitur ratio sufficiens ad probandum [...] Alio modo inducitur ratio, non quae sufficienter probet radicem, sed quae radici iam positae ostendat congruere consequentes effectus, sicut in astrologia ponitur ratio

²⁴⁰ Summa Theologiae I, q. 32 a. 1, ad 2. *The Summa Theologiae of St. Thomas Aquinas* Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province).

<http://www.newadvent.org/summa/>

excentricorum et epicyclorum ex hoc quod, hac positione facta, possunt salvari apparentia sensibilia circa motus caelestes, non tamen ratio haec est sufficienter probans, quia etiam forte alia positione facta salvari possent.

The probability is measured by how accurately and diligently an experiment has been carried out. The procedure is valid pragmatically, but almost completely unclear from the theoretical point of view.

After the Aristotelian paradigm of science had been dropped, two attempts were made to define it theoretically nonetheless. Mathematics was tried to be reduced to empirical cognition; or vice versa: the source sensual perception modelled after the fashion of how the a priori mathematical objects are “seen”.

The first stance was espoused by Theodor Lipps and is notorious for being labelled as psychologism. The mathematical entities “evolved” along with the human cerebral cortex. The first work by Edmund Husserl (“Philosophie der Arithmetik”) was written in the spirit of psychologism. However, the second one (Logische Untersuchungen) abandoned it. A stringent reasoning (Strenge Wissenschaft) must be fashioned after the model of the exact science (mathematics was an Exakte Wissenschaft). Indeed, the claim the e.g. the equation: $2 + 2 = 4$, assumed its form due to evolution (or whatever the like) sounds quaint, to say the least of it. Husserl saw the outlooks for science in general in assimilating it to the mathematical apriorism. E.g. if there are values measured and counted in mathematics, there must be similar ones in ethics.

According to Thomas, it is a serious mistake to identify the mathematical unity with the natural (transcendental) one. The natural objects cannot be defined by the amount of the hypothetical “stuff” they are supposed to be made of. But the identity of the objects of the experiment must be so. For a considerable time, it had been believed that there was no difference between those two classes of objects. The supposition proved to be false. Some objects cannot be measured.

As for the vivid organisms, the tendency for preserving the same natural magnitude along with individual existence is salient enough. Each living organism intends to preserve the natural integrity. In other words: it preserves the same amount of energy, and the potential losses thereof must be made up. Otherwise, an individual would die. The so called, cicatrization index shows the ability to restore the losses and preserve the status quo. It is unequal and depending on e.g. the age of an individual.

It might have been believed that the *position* in the Periodic Table of Elements can describe at least the identity atoms (the identity would depend upon numbers). But in fact, the Atomic Number depends on the state of energy possibly stored in an object and is discrete just because the displacement of energy in nature is not monotonical. Only those atoms can exist (in the normal sense of the word) that maintain the equilibrium of energy in them. Some isotopes are not “stable” enough to “exist”. Chemical compounds, in turn, are built according to the valence of atoms; i.e. the state of energy of electrons in them. The same *mutatis mutandis* must hold true as for all more complex objects. If there was a “number” in them, it would be the “number” of energy which cannot be added ad infinitum but must stop at the border of the universe pointing out to its Transcendent Cause.

The same general tendency to preserve natural integrity and natural being permeates the whole universe. That we see different objects (species) is only possible due to that the species are organized down to the “bottom” of the universe and teleologically so. There is a definite order in which more complex objects (species) are built of the elementary matter. Otherwise, an abyss of the indefinite (the Kantian Ding as sich) would yawn before our eyes every time we tried to see something really *different* to our mind i.e. something *beyond* it. According to Kant, things are only defined because *in* our mind; whereas, the transcendent was as amorphous as mysterious.

The elementary sense cognition consists in grasping some teleologically built structures. The primitive cognition can be used differently all depending on the type of abstraction used. Mathematics envisages the poorest aspect of being i.e. its quantity and that is why it is the most exact of sciences. But the mathematical abstraction cannot satisfy the human intellect, which was admitted even by Kant. To resist that dissatisfaction Kant devised a sophisticated system of mental compulsion called transcendentalism. But in fact, mathematical abstraction alone cannot satisfy full requirements of science either. As was pointed out above, scientists themselves (e.g. Bohm) understood perfectly the need for what they called qualitative notions so as to bolster the abstraction used in mathematics.

As was said above, the qualitative notions need not be treated pragmatically only. Scientia naturalis tackles them thematically. The differentiated in it (and more so than in the sciences called exact) is respectively: movens and motum; the cause and effect. Eventually, natural unities (substances) are to be known. The identity of a natural object is defined by the specific mode of preserving its integrity and being. This being is bestowed upon an effect by its cause; and Neoplatonists speak of fluxus entis as if it could be *imagined* that being – literally – flows from a cause to the effect. Were it the case, it rests therein too, and that is why a definite mode of being can be known and expressed in real definitions. The definitions are more than just signs (e.g. used in mathematics), nor do they mirror the reality, as it could have never be done peremptorily. According to Aristotle, the words do not correspond to things immediately, but via a specific mode we grasp them intellectually. A kind of transformation occurs in the intellect when sense data are grasped in “pairs” hinting the path of discovery to be advanced. Things, according to Aristotle *intend* to perfect our mind.

Scientia naturalis identifies the pairs as form and matter, and the method adopted in it is abstractio totius. It faces “crude nature” mathematics and physics are unable to see. At best, some “dark spot” happens to be seen beyond the proper scope of their discovery. The “parts” they speak of might well add in some respect and be *imagined* to be infinitely divisible. In fact, they are not so, at least as for elementary objects. Plank’s constant is “very small” but is not *infinitely* small as differential parts in calculi are, which allow the addition.

The distinction between objects “small” and “big” is far from being precise. Instead, the distinction between natural and ideal (phenomenal) objects should be used. The identity of the latter is defined by the algorithm of their production. Apparently, a cat is “big” phenomenally only as able to be replaced by a phenomenal object of the same mass. But it cannot be produced for all the dreams of biotic engineering. The parts of the feline organism add constructively (like only waves can which correspond to the energy associated with them)

and as minutely as impossible to be copied in experimenting and producing. Natural form and matter “add” in the manner different to the matter used in producing, albeit producing can be called “forming” indeed.

Phenomenally, the feline body is similar to any other macroscopic object comparable as to dimensions and mass. But the inner side thereof cannot be measured that precisely. Biology was supposed to be assimilable to mathematics, but no biologist can deny the finality of nature. This finality is the pivotal theme of *scientia naturalis*, which analyses the entire teleological structure of bodies and their inner energy. The form of a thing-to-exist is intended by the natural agent.

The objects of *scientia naturalis* are not as readily isolable as those of mathematics. An ideal object can move without acceleration – due to its inertia – *ad infinitum*. But there are no ideal objects in nature. Nature is asymmetrical: the moving and the moved are joined and point to some direction beyond them both. That is why the causal relation must permeate the entire universe up to its borders.

There is, to be sure, an indeterminism to be found in nature, apart from the indeterminism of cognition we have been speaking of. The latter is dependent upon the potentiality of the human intellect, and nobody can deny that this potentiality really exists. It is up to a good teacher to unfold this potentiality in a disciple despite all obstacles possibly met. A clever teacher is someone who can unearth what could have otherwise seemed to be hopelessly buried under the ashes of individual problems and frustration.

Nature is not such a preceptor, obviously enough. It cannot anticipate our problems, but only hints the way of discovery. Every time we stumble upon a “problem”; upon that a cause is thwarted (and an indeterminism of a sort appears) we are in fact spurred to search further. There is such a dialogue with nature in Augustine’s *Confessions*. Every time pressed for an answer, nature responds with the same “not yet”; “I am not your Homeland”. And nature, contrary to people, cannot be deceptive in this respect. There is a margin of uncertainty in nature; for natural events occur, as Thomas, has it: *ut in maiori parte* (in the majority of cases only). Every natural cause can be foiled; but on the other hand, no effect can exist without a cause. In sum: nature points to *something beyond* every time we try to understand it.

Natural causes must not be credited with too much. They can satisfy the human intellect (at least for a time), but can never satisfy the human will. There is Something acting beyond the scenes of nature. And the human mind can only rest in It. Some discipline can provide a rest and satisfaction for some time indeed. But every science should be aware its restrictions first of all. That is why no intellectual aspirations should be disqualified *a priori*.

Over centuries, people had believed in – so to say – absolute causality; i.e. determinism of nature. The belief was an inevitable outcome of the undue extrapolation of the validity of mathematical method. A mathematician departs from causes and concludes the effects. E.g. the essence of the circle is a “cause” of its having certain properties. Now, it had been believed that the analogical relation observed in nature. Some causes produced effects out of necessity. Not even the human will was exempted from being determined from without (Leibniz).

There is such a relation in experimenting, otherwise it would cease to be what it must be: triggering definite outcomes. Descartes' idea of Deity is similar. God (like an experimenter) gave the first impulse of motion and everything had been unfolding since then mechanically.

Feynman's theory of trajectories falsified such an assumption:

Richard Feynman postulated in 1948 that the path of an electron can be best described by the sum or functional integral of all possible trajectories rather than by the notion of a single, unique trajectory. As a consequence, the position of an electron does not harbor any information about the paths that contributed to this position. ...²⁴¹

The path integral formulation of quantum mechanics is a description of quantum theory that generalizes the action principle of classical mechanics. It replaces the classical notion of a single, unique classical trajectory for a system with a sum, or functional integral, over an infinity of quantum-mechanically possible trajectories to compute a quantum amplitude.²⁴²

In consequence, the principle of sufficient reason in the Leibnizian sense of the word was falsified, and the inverse causality in the Aristotelian sense reappeared.

Retrocausality or Backwards causation is a concept of cause and effect where the effect precedes its cause in time, so a later event in time can affect an earlier event in time. In quantum physics, the distinction between cause and effect is not made at the most fundamental level, so time-symmetric systems can be viewed as causal or retro-causal. ...

Philosophical efforts to understand causality extend back at least to Aristotle's discussions of the four causes. It was long considered that an effect preceding its cause is an inherent self-contradiction because, as 18th century philosopher David Hume discussed, when examining two related events, the cause, by definition, is the one that precedes the effect ...

The ability to affect the past is sometimes taken to suggest that causes could be negated by their own effects, creating a logical contradiction ...²⁴³

Feynman interprets Fermat's principle in this context, and the principle was given the well-known illustration.

Imagine you ... see someone struggling to stay afloat. ... you want to get to them as quickly as possible. You're pretty fast when swimming, but even faster running on sand. So what's the

²⁴¹ Robin Ketteler, The Feynman Trajectories: Determining the Path of a Protein Using Fixed-Endpoint Assays. Article· Literature Review (PDF Available) in [Journal of Biomolecular Screening](#) 15(3):321-6 · March 2010.
https://www.researchgate.net/publication/41405147_The_Feynman_Trajectories_Determining_the_Path_of_a_Protein_Using_Fixed-Endpoint_Assays

²⁴² https://en.wikipedia.org/wiki/Path_integral_formulation

²⁴³ <https://en.wikipedia.org/wiki/Retrocausality>

quickest route to get to the swimmer? It may not sound like it, but this puzzle, which was laid out by famed physicist Richard Feynman, is actually an analogy for the behavior of light. ...

At first thought you might consider whether a straight line ... is the fastest path. This is indeed the shortest one, but it isn't the quickest. You can do better, because if you run further along the beach, you'll cover more distance on land than in water. And since you're faster on land, you get there in less time.

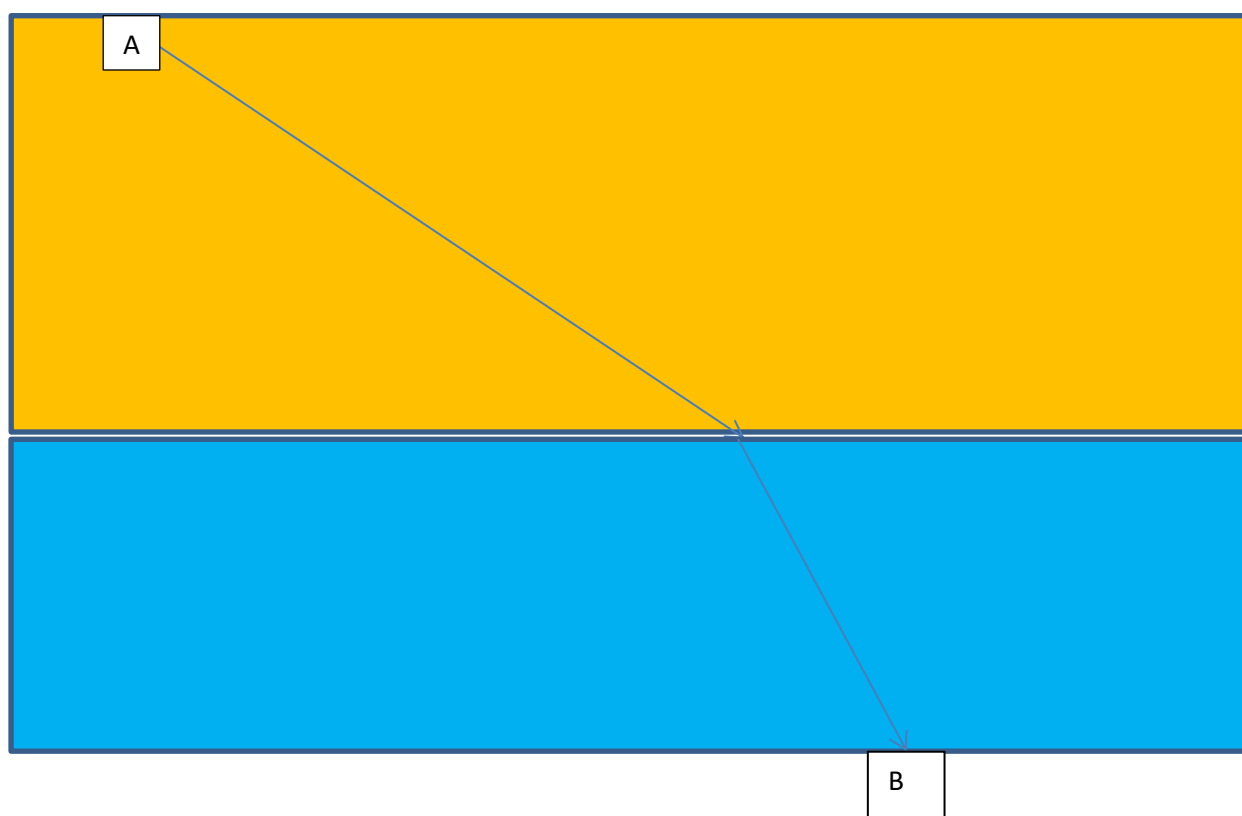
So maybe option ... [the] path [which] involves the least swimming is quickest? ... But that's not right either. Although you're moving faster now, this route is too long, and it slows you down.

As you can see, there's a trade-off here. As Feynman puts it, "the path of least distance has too much water in it; the path of least water has too much land in it; the path of least time is a compromise between the two."

The quickest route is C—a very specific path that lies somewhere between A and B. ...

You might be wondering what this has to do with light. In 1657 the French lawyer and mathematician Pierre De Fermat (...) worked out that when light travels from one place to another, it always takes the path of least time. ...²⁴⁴

The problem can be illustrated in the following manner:



²⁴⁴ To Save Drowning People, Ask Yourself "What Would Light Do?"

POSTED BY AATISH BHATIA ON MAR 26, 2014

<http://nautil.us/blog/to-save-drowning-people-ask-yourself-what-would-light-do>

Now, let us assume *the inverse* point of view, viz. that of the drowning person. Imagine he/she is conscious to some degree; not however, to the extent of being able to see objects *distinctly enough*. The rescuer might be outwardly (as to the shape) similar to any material object, and not identified at first as a person. Theoretically, it might have happened that a huge bird had flown just above the land and the water and approached this person, without any “altruistic” objectives in mind. But then, it would fly along the straight line. Now, the drowning person might be aware enough to see that “it” chooses a “strange” path, which is, in fact, *the good* one. Consequently, the object approaching *might be recognized* as a (rescuing) person *just because moving* not along straight line, but along some “sophisticated”; “good”, i.e., the best one to get to the drowning person.

The mental experiment sketched above is meant to unearth the basic in the sense perception. Jaspers could have called the example of the drowning person a Grenzsituation. Now, let us assume that the basic in question is just that: the boundary situation in which our mind begins to work. For what does it mean to be conscious in general? Apparently, the situation described above is paradigmatic for any sense perception whatsoever, provided it is what is must be: fundamental. Normally, people are not “aware” that e.g. the snow they see in a dim light is blue. They *remember* that it “should be” white and that is enough. Only impressionists are naïve enough to see things as they are: as unique. This chimes in with what Aristotle himself says about sense perception: It is a “salvation”; “liberation” (σωτηρία). People happen to be accustomed to hackneyed and dull ideas. They happen to be lost in them too. Now, it is essential to show the pathway of the original cognition so as to set them free from boredom and despair.

οὐκ ἔστι δ' ἀπλοῦν οὐδὲ τὸ πάσχειν, ἀλλὰ τὸ μὲν
φθορά τις ὑπὸ τοῦ ἐναντίου, τὸ δὲ σωτηρία μᾶλλον ὑπὸ τοῦ
ἐντελεχείᾳ ὄντος τοῦ δυνάμει ὄντος καὶ ὁμοίου οὕτως ὡς δύ-
ναμις ἔχει πρὸς ἐντελέχειαν.²⁴⁵

Thus, it becomes visible that sense perception is far from being sheer action of particles on our sense organs, nor a similar “reaction” for it. Light is not exceptional then. Perceiving and living organisms act just like “small” objects.

The ... creature with this uncanny ability is one of the world’s most invasive species — the little fire ant, or *Wasmannia auropunctata*. Ants help each other navigate by leaving trails of pheromones as they travel, and over time, these trails converge onto a straight line from a food source to their nest. These little guys are natural optimizers, and they can even find the

²⁴⁵ *De Anima*, II c.5, 417b 3-5;

shortest path in a pretty complex maze.²⁴⁶



The objects in question are, consequently, not that much “small” as rather *minutely built* and that is why they can be precisely distinguished. Apparently, even animals can distinguish objects relevant for their closest environment.

So, the Fermat’s Principle has some important and – according to Feynman – philosophical meaning. As known, the beam of light “chooses” *the best*, which is not to say: the shortest possible, way to travel through the unequally transparent media.

The principle of least time is a completely different philosophical principle about the way nature works. Instead of saying it is a causal thing, that when we do one thing, something else happens, and so on, it says this: we set up the situation, and *light decides* which is the shortest time, or the extreme one, and chooses that path. But what does it do, how does it find out?

²⁴⁶ To Save Drowning People, Ask Yourself “What Would Light Do?”

POSTED BY AATISH BHATIA ON MAR 26, 2014

<http://nautil.us/blog/to-save-drowning-people-ask-yourself-what-would-light-do>

Does it smell the nearby paths, and check them against each other? The answer is, yes, it does, in a way.²⁴⁷

Now, the point is that what nature (“light”) decides about is the same as what nature *intends to do* – it is the aforementioned Aristotelian intention of nature (βούλημα φύσεως).

The sense perception we have been speaking about is the natural basis for differentiating in scientia naturalis. For objects are differentiable against each other (in pairs), and not only possibly contrasted with a potentially infinite continuum (entity, mavjud of Avicenna). The “entity” (should the term be used after all) is the general tendency in natural things to preserving the natural integrity and existence of separate objects. At first, they are known by us but indiscriminately (confuse), but identified later on as movens and motum; the cause and effect. They appear (are given) indiscriminately first. But apart from how they are *given*, they might be analyzed as to how they *are* entangled or coupled. What is, then, the cause of this relative unity of the universe; of what Dionysius calls mirabilis conecctio rerum? (Being *connected* is considerably more than being *indeterminate* obviously enough). The natural general tendency permeating the whole world is meant. Nature *chooses* “the best way” indeed. The choosing might be called entity or being. Being, according to Thomas, is the first datum of the intellect. As however, knowing implies distance, human existence is not entangled in world, but cognizant of the entanglement, and liberated therefrom by the intellect.

Thomas distinguishes what he calls relativa secundum dici;²⁴⁸ the objects whose whole being consists in being related. There are no such like *autonomous substrata* in the *created* world. If there are some *beyond* it, they are not knowable in the natural way. In fact, the dissatisfaction of the human intellect with what exists in the ordinary way (as diverse

²⁴⁷ Ibid.

²⁴⁸ Summa Theologiae I, q. 13 a. 7 ad 1. Ad primum ergo dicendum quod relativa quaedam sunt imposita ad significandum ipsas habitudines relativas, ut dominus, servus, pater et filius, et huiusmodi, et haec dicuntur relativa secundum esse. Quaedam vero sunt imposita ad significandas res quas consequuntur quaedam habitudines, sicut movens et motum, caput et capitatum, et alia huiusmodi, quae dicuntur relativa secundum dici. Sic igitur et circa nomina divina haec differentia est consideranda.

De potentia, q. 7 a. 10 arg. 11. Praeterea, huiusmodi relativa quae de Deo dicuntur ex tempore, aut sunt relativa secundum esse, aut secundum dici. Si sunt relativa secundum dici, in neutro extremorum aliquid ponunt realiter. Hoc autem est falsum, secundum praedicta: nam in creatura relata ad Deum realiter existunt.

De potentia, q. 7 a. 10 ad 11. Ad undecimum dicendum, quod distinctio ista relativorum secundum esse et secundum dici, nihil facit ad hoc quod sit relatio realis. Quaedam enim sunt relativa secundum esse quae non sunt realia, sicut dextrum et sinistrum in columna; et quaedam sunt relativa secundum dici, quae tamen important relationes reales, sicut patet de scientia et sensu. Dicuntur enim relativa secundum esse, quando nomina sunt imposita ad significandas ipsas relationes; relativa vero secundum dici, quando nomina sunt imposita ad significandas qualitates vel aliquid huiusmodi principaliter, ad quae tamen consequuntur relationes.

substrata) bears a testimony to that the human destiny is not tethered to the created world but open to the Relations (in God's nature) that exist in some incomprehensible manner. Thomas opposes Gilbert de la Porrée's opinion that Divine Relatives do not inhere in God's nature. The point is, however, that they are to be identified with this Nature, but not with each other, which (the conjunction) is exceptional and admirable indeed.

Determination philosophy provides is no contrasting with a matrix or background. It is not a negation (Spinoza) or *Nichtung* (Heidegger). For no totality can be supposed to be known as a background for particulars. Particulars are not "emerged" in, or "thrown" into, the universe, but constitute it. A particular form might be imagined to be immersed in a particular matter, but it is sheer *mode de parler*, and no special importance should be attached to such a wording.

Quantity is a form, no doubt. But it is not a *subsistent* form. Mathematics stops half way in differentiating objects. That is why, if applied to natural objects, sheer probability of their existing is obtained instead of certainty Posterior Analytics speaks of. For if the subsistent form rests in a thing (which is not the case as for the accidental one) both matter and form that constitute this object can be known with certitude.

Moreover, the idea of being (entity) as the allegedly adequate object of the intellect should be revised too. The adequacy in question might pose a serious difficulty if understood in a simplistic manner. A totality happened to be supposed to exist "outside", and the intellect was expected to conform to it. Isaac's de Stella definition of truth (*veritas est adaequatio rei et intellectus*) happened to be believed to make such a supposition. If it did, the belief was bound to be questioned sooner or later. It was the case in Descartes already and all the more in Kant, who believed that things should rather "conform" to the mind than vice versa. In consequence, human existence was as "independent" of them as isolated and simply incarcerated in the "cage of consciousness." This confinement is a determination of human existence, but its value is problematic, to say the least of it. According to Husserl, the consciousness cannot be transcended; for the cognition of what is not included in the cognizant is a self-contradiction: knowing of what was not known. And Aristotelianism was labeled as naive for the (allegedly harbored) conviction that "reality" exists and independently of what might be rationally known of it.

So, let us examine the problem more closely. It is in fact the problem of what Descartes calls *realitas obiectiva*. According to Husserl, reality and consciousness exist and distinguished from each other. As for the consciousness, Avicenna's "floating man" experiment (the icon of the man of Enlightenment), seemed to have settled its existence. And the devout worshiper of "Reason" must not commit idolatry of believing in the reality independent of the deity of the Enlightenment. But on the other hand, "unbelievers" were treated with condescension; for the "toleration" requires looking down upon them. What they were really forced to do was the choice to be done between the two realms in question. Now, the idiosyncrasy of "rationalists" towards Aristotle is explicable by the suspicion of his not having taken the choice. In fact, the suspicion was fully justified.

According to Aristotle, not that much "reality" as rather *res* (πράγματα); the closest environment we live in, is known originally. Obviously enough, no one lives in a "totality".

The Husserlian idea of *Lebenswelt* is a feeble echo of the awareness that humans cannot live in what is in fact that vague. The testimony, however, is not a proof. Let us, then, ask an idealist a simple question to prove the point. Do you admit the real existence of the books you appreciate so much that you are *certain* that the same (adequate) ideas exist in them and in your intellect? A book is, obviously enough, a physical being, and a library it is to be found in all the more so. Analogically, the “world we live in” is the closest natural environment made up from physical beings. Albeit existing for me in a sense (*Für-sich-sein*) the natural objects exists on their own first. The only problem consists in settling precisely the way the objects are fundamentally given to us (*für uns sind*).

The reductive analysis sketched above demonstrates (in the sense of being possibly reiterated by anyone) that relatives in the primitive sense of the word are not the Husserlian “two realms” (reality and consciousness) but the phenomena originally undistinguished as to their parts. The Husserlian stance stipulates too much; the Aristotelian stipulates *nothing*. Kant rejected the existence of natural things but naively supposed the existence of – so to say – the “thingness” of matter; for *Ding an sich*, is in fact nothing else than that. The stance can hardly be called critical.

But the Husserlian *Lebenswelt* is an Ersatz of a purely rational attitude to the outer world too. The *Lebenswelt*, for all its alleged “existential dimension” is, in fact, an isotropic three-dimensional space man happened to be artificially placed. No such a “container” of what might exist is able to foster the real life.

The natural place Aristotle speaks of is existential indeed; for it is a derivative of how wave courses superimpose constructively or not constructively. No material particles can be added in the way waves (and energies associated with them; the “forms”) can.

The wave particle dualism might be interpreted in terms of the Aristotelian distinction between form and matter. The formal is more than just a geometrical outline of an object, and the matter more than just a stuff things were made of, all the less the Fichtean not-I the human mind allegedly stumbled upon. Things are formal (and naturally placed for that matter too) because of a definite amount of energy associated with the waves which carry the particles. The waves (if added constructively or not constructively) outline the natural borders in a special way. And in this sense natural objects are diverse.

Ideal objects can be isolated *ad libitum* (and their outlines blurred consequently too). Artifacts as such must be isolated from the natural environment so as to facilitate human existence therein. But on the other hand, the existence facilitated in this way need not be necessarily behooving human dignity. The third law of the Newtonian Mechanics observes without restrictions in phenomenal objects. It observes *to some extent* in those natural too, and in vivid organism in particular. An action is likely to prompt the reaction: the evil inflicted demands a punishment (or even occasions vengeance). The fact is natural to some extent only, because natural objects are not as symmetrical as to obey the rule without a restriction. Neither natural action nor natural cognition is mirrored in what is acted upon (sense organs are so from without). It is rather obvious that e.g. a child cannot (at least immediately) retaliate upon the evil inflicted on him/her by a debauchee. It reacts, no doubt, but the reaction might bear a certain resemblance of compensation. The “vectors” of natural actions cannot be

as perfectly directed (e.g. against an evil-doer) as might be desired. The penal law is expected to do the job, but for all its importance, it cannot work 100% effectively.

There is a margin of uncertainty in the natural world we live in and nothing is able to annihilate it. The natural law is always asymmetrical (and the participation of the eternal one). There is a certain direction in our actions to be followed but not as ideal as mathematical vectors are.

Let us focus once more on the principle: *omne quod movetur ab alio movetur* (everything moved is moved by something else). There is a chain of actions and reactions in the world, but it is not a circle chain, similar to an orbit in which the end of motion turns out to be a principle of the next cycle, and the motion reiteratable *ad infinitum*. For all what Aristotle says about the eternity of motion and its periodicity, he assimilates the whole world to one vivid organism. Thus, neither “infinity” nor the “principle” nor yet the periodicity of motion are to be taken in geometrical terms. Now, a vivid organism accepts a certain amount of energy from the environment. The sense perception informs about the magnitude of energy needed, and the other potencies implement the information. When acting and reacting, a vivid organism maintains an equilibrium between what is accepted from, and produced to, the environment. But that equilibrium cannot last infinitely. Nor can the world as a whole dispense of the Outer Side.

Now, if sense data had been accumulated in the way Locke, Hume, Condillac and Wittgenstein²⁴⁹ believed, the equilibrium could never exist. The flawed idea stems from Scotus’ concept of the fact; of “what simultaneously exists” (In Met., VII, q. 15 [4] 17). The essence of a thing (the distinguishing principle) lay deeply buried under the appearances. The depth some philosophers, in turn, pretended to have explored, turned out, every time tried to be described, an abyss of absurd and despair.

The idea is flawed because things are not “opposed” to our mind in such a simple manner. They are *beneath* appearances, no doubt, but remain in a definite relation to them after all. Now, distinguishing, the proper task of science, is meant to elucidate the relation. Causal relations *prove* to work in a definite manner. How they at first *appear* to work is a separate problem. Apparently, no one may justly suppose to know the motive of someone else’s actions just because they “resemble” something one is acquainted with.

The notions of cause and effect have been used throughout the present book. The notions seem to be necessary in the everyday life; for otherwise, people could not be hold accountable for their actions. The problem was announced in PREFACE 7.

Still, and as the very title of the book suggests, the notions are not absolutely indispensable. Theoretically, they can be “bracketed” for a time. In other words: in the elementary cognitive situation, relatives are simultaneously given as the “objects” (of motion) mutually related to each other. There is a special opportunity to illustrate the problem by

²⁴⁹ Wittgenstein, Tractatus, 2.0272.

https://en.wikisource.org/wiki/Tractatus_Logico-Philosophicus

showing how the Latin idiom developed. For the “movetur” in question is idiomatic in sense. There was no passive voice in the proto European language. Consequently, the ancestor of the Latin “movetur” (and the Greek κινεῖσθαι too) was read as “something which moves” (in the intransitive meaning). The primitive stage of the language suggests what precedes any language at all. We are not at first aware of that “something is moved” by something else (another substance). But we cannot deny the fact that *something changes* in the world we live in. Otherwise our life would be “... a tale Told by an idiot, full of sound and fury, Signifying nothing.” In Latin, moving and the moved are related to each other as something acting and something acted upon, and the relation of a cause to its effect is enhanced. Now, the Thomasian *relativa secundum dici* are just the primitive data of experience. Even if an idealist could try and deny the existence of substance and causal relations, he/she cannot deny the fact that the senses are affected from without. In consequence, Thomas’ statement that the First Way (the kinetic proof) is “more manifest” is to be understood in the sense that it is easier to accept for idealists too. To be precise: the proof is persuasive enough to *make them drop* their stance as irrational. *Movens* and *motum* are causes at least in the sense of Posterior Analytics II, Ch. 11; for the terms of syllogisms are (known) causes indeed. No one can dispense of reasoning, unless, perchance, about to utter the statements no importance is attached to.

There is an “is” of a statement included in both premises and conclusions of deduction (and the proof in question too). But the sense of being is variegated according to how this “being” is originally given. For it is given not separately from what it unites: the moving and the moved. Thus, a certain inaccuracy of the Platonean *Phaedo* (75C 10-D 3) appears: being is not a “seal of understanding” *directly*:

... ὁ λόγος
 ἡμῖν ... περὶ πάντων
 οἷς ἐπισφραγιζόμεθα τὸ “αὐτὸ ὃ ἔστι” καὶ ἐν ταῖς ἐρωτή-
 σεσιν ἐρωτῶντες καὶ ἐν ταῖς ἀποκρίσεσιν ἀποκρινόμενοι.

Plato is speaking here about a dialogue; about the fundamental questioning – ἐν ταῖς ἐρωτή-
 σεσιν ἐρωτῶντες, and the fundamental answering – ἐν ταῖς ἀποκρίσεσιν ἀποκρινόμενοι, in
 which the naked “is” (what exists) – “αὐτὸ ὃ ἔστι”, is suggested to appear, but the dialogue
 with nature is specific, as mentioned above. Thus, being is immediately given only in the
 sense of “sealing” the relatives of motion. Language cannot replace experience, for it precedes
 any tongue. Consequently, ὁ λόγος ἡμῖν, is but *my* reasoning and not universally valid. It can
 even be believed to be being-for-me (Für-sich-sein). But Plato himself could have never
 drawn such a conclusion; for he is saying expressis verbis that his stance is provisional. He
 had been awaiting Aristotle to settle the problem.

This being is something *between* the moving and the moved; it is the general tendency
 of nature that unites and permeates (ἐπισφραγίζει) the whole universe. Without it, our sense
 perception could have never existed. Human senses are moved from without. But there is
 certain relation to what originally moves – to the substratum, the substance. Being is grasped
 differently according to various types of abstraction adopted. *Abstractio totius* grasps the
 essence of natural beings. A definite sense of being is obtained therefrom. This sense happens

to be elucidated in many ways; seized in many sciences; and the “is” has different meaning in them. On the other hand, it must always be contrasted to “is not” and the non-contradiction principle used. The meaning of the “is” might be different (according to Aristotle: πολλαχόῳ λέγεται τὸ ὄν), but the sense is analogical in *scientia naturalis* and metaphysics.

According to Aristotle, “metaphysics is the science of substance”. Indeed, the *substrata scientia naturalis* speaks of need not be understood as subsistent at first. For the notion of substance implies a more prominent mode of being. The same holds true, *mutatis mutandis*, as for the causal relations. As causality (action) follows upon being, an autonomous acting implies an autonomous being.

Thus, two Thomasian Ways are to be distinguished. The First (the kinetic proof) uses the notion of *substrata* (*movens* and *motum*), whereas the Second (from causality) implies the notion of *subsisting* *substrata*. Substances, according to Aristotle, become and perish, whereas a *substratum* (which changes only) remains. The First Way uses more neutral notions.

Even if some (e.g. Hume) rejected causal relations, no one can deny that something *changes* in the world. A *substratum* “stands – so to say – under motion” only, whereas a substance “stands under” a form or even an act of existence, which, however, seemed to some philosophically burdened. A SUB-JECT of motion undergoes an ICTUS from without. Now, SUBICI is *in fact* the same as MOVERI, albeit the latter is more readily usable.

The superiority of the First Way consists in that it is closer to the sense cognition. Eventually, the causes and effects might be extricated from the primitive sense data, and that is why the two Ways are rather to be juxtaposed than opposed. They are, in a sense, complementary.

According to the scholastic principle: *causam et effectum oportet esse simul*. If the sense perception is what it eventually must be: primitive; all foreign (e.g. “remembered”) elements must be eliminated from the relation of an effect to its cause. The inverse relation, implied by determinism; the relation of causes to effects can never be the source datum of experience.

Aristotle espoused the concept of “inverse determinism”; there is but one immediate cause for a given effect (Physics II). It is the aforementioned retro-causality. *Scientia naturalis* proceeds from effects to causes. This is why natural objects appear distantly in it, without elements likely to “blur their outlines”.

2. The intentionality and complementarity

The diversity of objects (implied in the minor premise of the kinetic proof) was, most probably, far less controversial in Thomas’ times than today. So, a special stress must be put on this point, and the cause of – so to say – “modern monism” be pointed out. Now, the ontological status of objects (their integrity and diversity) is directly affected by how intentionality happened to be understood in philosophy. There are two opposite concepts thereof. According to Aristotle and Thomas, it is the mode of natural beings; according to

Avicenna, Scotus and Husserl, it was a mode of understanding. As, however, Avicenna himself was (at least in his own eyes) an Aristotelian, it might be advisable to analyze his stance so as extricate therefrom a common denominator for both aforementioned philosophical options, despite them being so radically opposed, or perhaps just because the opposition inversely affected the development of the Western Thought. Some reconciliation should be attempted, and a constructive solution sought. The importance of Avicenna's thought for the West cannot be denied. In fact, some modern discoveries were anticipated in philosophical guise some thousand years ago. Now, let us try to extricate the genuine Aristotelianism from Avicenna's thought.

All possible specific forms might be imagined to be similar to a field of potential. For that things come to existence – so to say – within a species, is in fact somehow similar to objects appearing in a in a given field of potential. The latter is not directly measurable; but on the other hand, once an object appears in it, the potentiality becomes “substantiated” and indirectly measurable, whereas it has no physical factuality per se. Naturally, measuring implies a disturbance of the field of potential. Accordingly, the real existence would spring the stiff outlines of species to the effect of blurring the actual borders amongst them. Now, the entirety of species might be imagined as a-local as the field of potential is. It would be a certain ideatum substantiated by individuals which appear within it. Moreover, the ideatum should be imagined isotropic, and the field of potential differentiated only according to how it was intensified or remitted. Particular things would appear more or less close to that ideatum and differentiated accordingly.

Apart from a different language having been used, the idea was conceived by the Arab medieval philosopher Avicenna. Moreover, in holism, the idea of the field of a whole plays a pivotal role. The stance will be addressed later on.

Things approach, to a lesser or greater degree, a point of convergence of the cosmic formality of being. Avicenna called it God. Still, the point might have been given other names too, or even denied any name and implied only – without any theoretical explanation of its ontological status. Be that as it may, the Principle was defined just by its a-locality. To use the Kantian language the Principle was transcendental.

Still, what Kant and Hegel called God (or the idea of God) in the aforementioned sense, was considerably less than what people had thought of God before. Bergson used the word (the idea), but evolutionists in general did not, which is rather understandable. At best, they would speak of a “mathematical mind of the universe”, which (not: Who) assists the evolution only. Originally, Darwinism was devised to replace or simply eradicate the traditional notion of God from human minds. Nevertheless, some “domesticated” forms of evolutionism (e.g. that of Bergson) accepted (or condescended to) the idea of God. For if the actual idea evolved along with the totality of the universe (and the truths enshrined in the Church's dogmas too), there were no borders to the human creativity: all ideas could be “meliorated”. Darwin's theory of organic descent was coupled with the idea of human creativity.

No “idea” can claim the rights of the handicapped (e.g. the unborn or terminally ill), understandably enough. No Transcendent Cause would exist to legitimize human actions or

hold people accountable for them. In reality, it has been believed that the possibility exists to enchant the reality just by shutting the eyes before it. The dream could last for some time indeed, but the *facts* must be awakened to eventually. Now, the point is that the factuality of the universe was denied (or at least disrespected) along with its substantiality and necessity. These two terms fuse together in the notion of the finality of nature (*intentione naturae*).

There is no explicit evolutionism in Avicenna, but an archetype of it only. For Avicenna assumes a different frame of reference to that of modern evolutionists. The cosmic processes began from God, who enlightened (made things emanate as) the whole universe via the so called *Dator Formarum* (the giver of forms-species of the Latin translation). *Dator Formarum* operated *without discrimination*. The prime matter, in turn, (not dependent directly on God) accepted the species to the extent it was prepared thereto. The species were adapted differently and not (rationally) selected by a cause acting on purpose, but “selected naturally”, i.e. at random, all depending on how the prime matter was prepared to accept them. Obviously, the species were supposed to adapt to each other. As however, they are *actually* definite in number, the question arises what they, as a whole, adapt to. The question was not answered in modern evolutionism (and perhaps not even posed pointblank) what the word assimilates to, if it be taken as a whole. For it was *implied* only that it adapts to the mathematical ideatum mentioned above, or the imaginary “mathematical mind of the universe”. Thus, a complement holism proposes seems to be at the right place.

Darwin’s theory of organic descent placed primary emphasis on the role of natural selection, but there would be nothing to select if not for variation. Variations that are the result of mutations in the biological sense and variations that are the result of individually acquired modifications ... further ... because variations appear in complexes and not singly, evolution is more than the outcome of individual selections; it is holistic.²⁵⁰

The archetype and the modern type of evolutionism differ but in the point of view, whereas the presuppositions were left unquestioned. *Principia sunt salvanda*. Species and individuals obtained a more perfect guise of being just by way of trial and error when approaching to an imaginary point of convergence of the formality of the universe. Be that as it may, they can never be as radically different as in Aristotle, for whom the path of the universe is not that much “evolving” as rather determined by what is the best in, and intended by, nature.

Still, the original guise of evolutionism is superior to that modern one at least in that it *tries* to elucidate the relation between the species existing in human minds (the ideas) and the species existing in the real world. The elucidation presented by Avicenna is considerably less than a systematic methodology of Posterior Analytics, but it is *an* elucidation after all.

No such an elucidation was provided in modernity, unless a belief that man was a privileged part of the evolving universe should be taken as such. Man was – so to say – an expository or a *porte-parole* of evolution.

Zukav introduces the concept of the alignment of personality with soul as the creation of

²⁵⁰ Holism

<https://en.wikipedia.org/wiki/Holism>

“authentic power”. He asserts that a transformation of humanity is underway from a species that is limited ... evolves by growing spiritually, and grows spiritually by creating authentic power. He further asserts that this transformation brings with it the new potential of authentic power ...²⁵¹

Albeit, the weird supposition of Th. Lipps that mathematics evolved along with nature was dropped, mathematical theories were in fact supposed to emanate (or evolve) into the material world every time an experiment was performed. The experimenter acted with an operator on the inert material object and the object “adapted” in a sense (Kant would rather speak of a “conformity”), which is to say: some probable information about what nature might be was obtained. Once however, Lipps’ stance had been abandoned, a being, an imaginary container of mathematical truths: consciousness was called into existence (or its existence sanctioned in the peremptory manner). The consciousness “intended” to ascertain as to the probability of what could exist. Material objects might well act mechanically, but consciousness was believed to be superior to them in that its existence was as transcendental as the Avicenna’s Dator Formarum was. Humans were “superior” to the extent human minds participated of the transcendental Dator Formarum. Kant calls the participation “regulative” of human actions.

Avicenna tried to explain the relation between the consciousness and reality by assuming that both species existing in the human mind and those existing in reality emanate (parallelly) from Dator Formarum (and eventually from God). The parallelism was expected to explain why mathematical truths could correspond to the factual world. Albeit Avicenna’s Dator Formarum worked like *deus ex machina*, some explanation was provided. The key-word here seems to be the term of ENLIGHTENMENT (Avicenna postulates the *general* enlightenment). Aristotle’s intellect is, to the contrary, a *specific* (and specifiable by various habits) light.

Thus, the problem consists in settling what the “cognitive” light *really* is. Albeit it is not physical in the normal sense of the word, it might be some analog of the natural one. In other words: if nature is teleologically built, an intentional factor exists in it along with the allegedly inert matter. Nature, according to Aristotle acts so as to perfect the human mind. Thus, the intellection originates from the physical. It is, however, a living act, and in this sense the human intellect is compared by Aristotle to light as it is habitual (not: transcendental) in man, albeit *actually transcending* the material world.²⁵²

To Avicenna’s mind, to the contrary, the intellect was formal to the extent it partook

²⁵¹ Zukav

https://en.wikipedia.org/wiki/Gary_Zukav

²⁵² De anima, III, c. 5, 430a 14-17. καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν, ὡς ἕξις τις, οἷον τὸ φῶς· τρόπον γάρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργείᾳ χρώματα. καὶ οὗτος ὁ νοῦς χωριστὸς καὶ ἀπαθὴς καὶ ἀμιγής, τῇ οὐσίᾳ ὦν ἐνέργεια· ἀεὶ γὰρ τιμώτερον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἡ ἀρχὴ τῆς ὕλης.

of the Dator Formarum, which was the common source of light. In Avicenna, and all the more in Averroes, who radicalized his stance, consciousness was collective, for it was a light illuminating *indiscriminately* objects it fell on. A bizarre hybrid of the human and the divine intellect made some believe that the consciousness faced a dark place man had to operate in.

As was said above, Aristotle compared the sense perception to liberation. Normally, however, no definite *salvation* can be wrought by human natural forces, but some *prerequisites* met only that allow the *ultimate* liberation being wrought freely by God himself. The natural way of cognition points in a definite direction, for the finality of nature is such. Every human inquiry, provided it is pursued for the sake of theoretical knowledge only, “reveals” (but figuratively only) the source of the cosmic energy. The light we see objects in is, in fact, participation of, or rather a natural means prepared on purpose by, the Subsisting Light. Everything depends on the disinterested pursuit of truth. The exclusively pragmatic approach to nature (“darkness”) is contrary to nature human desire to know for the sake of knowledge only.

The Avicennian scheme is plain or even persuasive, which is not to say: stringent. For some objects proved to be unmeasurable in the way measurable objects were supposed to correspond to the ideal ones. Mathematically, some equations (the proper wave functions) include the imaginary number i , which cannot be “measured” in the real world. The very name of this number might be confusing though; for natural objects are just the opposite of what can be imagined. In Polish, this number is called UROJONY (which means: “illusory” rather than “imaginary”). Measuring, on the other hand, is possible only after having eliminated the imaginary number by the so called complex coupling. The wave function of the form:

$$F(x) = e^{i\omega t};$$

can be expanded to the form:

$$F(x) = \cos \omega t + i \sin \omega t;$$

There are two parts of the wave function. The radial component of e.g. electric forces makes for two objects to act (and react) as ordinary macroscopic objects do. They are describable in the terms of the Newtonian mechanics with a good approximation. The transverse component, on the other hand, produces no measurable effect, but carries the information only about the state of energy of a given object. The information is measureable indirectly only, but is perceived by the naked senses *almost* directly since via the natural medium only (characterized by the natural properties: μ_0 ; ε_0 .)

Some objects very distant from our senses (e.g. stars) can be seen due to the second coefficient; for in the “void” the energy is transferred without losses. This coefficient can be called the intentionality of nature in the Aristotelian sense. This type of action is just the opposite of exerting measurable effects. For e.g. the pressure of light on the retina of our eye (albeit measurable theoretically) is of no importance for seeing.

Thus, two types of natural actions appear. The intentional one (carrying the information about the state of energy of an object via a wave transmittable potentially ad infinitum) and the material one (connected with the radial component of the phasor of a source of the wave).

Those two parts are rooted in the very core on nature, and not in “God’s mind” (nor in the Great Mathematician’s mind for that matter too). All the less, human consciousness can be a source of intentionality.

The intentional part of natural actions is not directly measurable; for measuring implies a disturbance of e.g. a field of potential. Measuring apparatuses are in a sense “blind” to specific modes of being; to how nature appears fundamentally. The purely physical phenomenon was given some fantastic explanation in holism:

The field of a whole is not something different and additional to it, it is the continuation of the whole beyond its sensible contours of experience. The field characterizes a whole as a unified and synthesised event in the system of Relativity, that includes not only its present but also its past—and also its future potentialities. As such, the concept of field entails both activity and structure.

Wholes are composites which have an internal structure, function or character which clearly differentiate them from mechanical additions, aggregates, and constructions, such as science assumes on the mechanical hypothesis. The concept of structure is not confined to the physical domain (e.g. chemical, biological and artifacts); it also applies to the metaphysical domain (e.g. mental structures, properties, attributes, values, ideals, etc.).²⁵³

The material objects, on the other hand, could be believed to be similar to the Leibnizian “aggregates” but to the moment only the until then unheeded component has been spotted. Imaginary and real members cannot be added in the way “aggregates” were supposed to. They can only be juxtaposed.

The paradigm of “addition” is intrinsically connected with the aforementioned determinism. An experimenter, (a privileged part of the evolving universe) acted with an operator on a material object (Avicenna’s “prime matter” duly disposed) to the effect of obtaining determinate outcomes, and they were determined *to some degree* indeed. Still, some proved to be “undetermined” nevertheless; some values proved to be not simultaneously measurable. They are *inversely* determined in the sense proposed in the preceding paragraph. The principle of complementarity holds that objects have certain pairs of complementary properties which cannot all be observed or measured simultaneously.

Von Neumann proved that some operators must exist which produce non commuting values. And the “image” (whatever the meaning of the word) of the universe must not be determined in this sense. Thus however, the traditional paradigm of science, in which the

²⁵³ Holism

<https://en.wikipedia.org/wiki/Holism>

rational structure of the world was, in general, accessible to human mind seemed to break down. It shared the lot of determinism. And it must have been so, as long as measuring was equaled to knowing things.

John Steward Bell reacted angrily to Von Neumann's stance (or rather to its possible implications). Bell tried to rescue the reality of the world (and its cognoscibility consequently too). Significantly enough, he attempted this by stepping "Against Measurement" (the title of his famous book). Indeed, in what is real (in the wave function) the second power of the modulus of the wave function is measured, not the wave function directly.

The measuring in question is not a new problem, although it might appear so in the science unaware of its philosophical bequest. The problem is not "scientific" in the narrow sense of the word; for although worded differently it was posed by Fichte. It is the problem of the subject posed against the object. The latter is tackled in science *directly*, but the former *implied* only. Let us observe that no such a subject existed in Aristotle and Thomas. There are diverse subjects of natural actions instead, and as many as many are natural motions (in stricter or broader sense of the word).

Fichte tried to explain the relation of the subject (consciousness) to the object (reality). There was a border between the two realms, and Fichte believed it movable according to the requirements of what he called "human freedom". Indeed, species must *adapt* to something (as it seemed). Now, they were supposed to adapt eventually either to the mathematical form of the universe or at least to human mind (Kant was modest in this respect). Things conformed to human consciousness. They adapted in the sense of being *uniformly enlightened* by the mythical consciousness. They differed in the human mind only. Darwin's stance was bolder. Things differed as long as adapting to some ideal horizon.

The theoretical interpretation of adaptation need not be posed directly. Leibniz spoke of God's intellect, having in mind the ideal horizon. And the God (His "veracity") was useful for Descartes also to guarantee the existence of the world and species (things) appearing in it. There was a *definite* trajectory of the *absolute* mind, although, perchance, the *actual* trajectory of *human* mind participated of it only. The path of discovery was advanced along the rifts in the mist of the natural objects hiding the transcendental light. Heidegger speaks of *Lichtung* in this context; for the term means both the rift and light. An experimenter, at least potentially, could approach the ideal. The paradigm was at least pragmatically valid, and hardly anything else was expected of it by the minimalist scientific stance. But now and again it was tried to be interpreted in more general ("philosophical") terms. Thus, an idea of creativity and self-deification loomed before human eyes.

For Kant, the transcendental was a mere incentive of scientific discovery. Naturally, once Kant's stance appeared unsatisfactory for science itself, it began to exert an influence upon the "philosophical" side of the problem. The dream of auto-deification was dreamt, although *practically* it proved to be a nightmare.

For all its being so "sober", Kant's stance was aware nonetheless of an absolute horizon. Hegel tried to substantiate it, which, however, amounted to attempting a "domestication" of the traditional notion of God.

Niels Bohr attached a special importance to the principle of complementarity. It might

be called “philosophical” in a sense of *reaching beyond*. It was implied that some guise of rationality existed beyond the actual scope of scientific research; beyond the science seized reductionistiacally, or even beyond the reasoning dealing with numbers only. Motion can be numbered, no doubt. But the number mathematics speaks of cannot explain the modalities of motion minutely enough; for the formalism adopted does not allow this. To the contrary, the Greek system of conjugation is formalized to the extent of being capable of setting down diverse modes of natural being. What is pivotal there is λόγος, not ἀριθμός mathematics must put up with.

According to Aristotle λόγος is more than just WORD. It is the concept; the definition or even the essence of a thing (Metaphysica, I, c. 3, 983 a 28). If a parallelism between science and objects exists, it is because there is something stable in both nature and human understanding of it. Nature intends to perfect human mind and its intention rests in it, similarly as in matter after introducing stable substantial forms.

Heidegger idiosyncrasy towards this stability is as notorious as his loathing λόγος. It was manifested on the first pages of Being and Time. The Avicennian notion of intentionality was to be defended. There was Lichtung (Enlightenment) in human understanding but there was nothing similar to light (the Aristotelian οἶον τὸ φῶς) in human *natural* mind. The two notions: of abstraction (a personal act) and the general Enlightenment are irreconcilable.

There has been, since Descartes, a deep distrust in the Western Thought towards the sense perception. Senses did not inform “adequately”. Descartes in fact anticipated the statement that measuring must not so; for he implied that senses were similar to measuring instruments. A collapse of a wave function occurs every time the “subject” faces “objects”, and the same (as in measuring), in fact, was supposed as for senses.

Let us return to the starting point of the paragraph. What is (if any) the positive meaning of the “metaphysics of light” we have been speaking of? For the medieval thinker, Robert Grosseteste, calls it just so. Is it bogus or a constructive sense can be extricated therefrom? Now, let us assume that this metaphysics can be built, provided, the light is not understood in the terms of geometrical optics, but it as a natural object.

Light beams can delineate on “material objects” as long as they are believed to be similar to “lines”, “planes” and “shapes”. There no lines in nature though. The nature objects approximate the ideal ones only. Those two must be opposed. But there are two real components of the electromagnetic wave. The formal side of phenomena makes them cognoscible as far as being a-local. Still, there are two irreducible sides of natural phenomena in Aristotle too: the moving and the moved: some substrata which must be *distinguished* to some extent at least. Ultimately, the matter and form of *diverse* objects might be distinguished.

Light beams happened to be so radically opposed to “matter” that believed to be “spiritual”, which was the case in those who followed Avicenna. Thus however, the intentionality would be severed from nature and allotted to the aforementioned consciousness – a carrier of immaterial light.

But on the other hand, the human intellect might be called light too, analogically so. To use the Platonic term quoted above, when abstracting we *seal* the intention of nature

(ἐπισφραγιζόμεθα – the first plural) and the trajectory of the human mind is delineated by retracing the finality of nature (which ἐπισφραγίζει – the third singular – the continuity of motion all by itself). There are, moreover, different paths of discovery and different methods used in sciences, as some trajectories might be *in some respect* easier to follow. They are *formally different*, albeit the *actual source* of energy (and of the human activity too) is the same.

Avicenna was wrong in assuming the divine frame of reference; for he could not have any notion of it (he did not know the Revelation). But as the words happen to be similar to a poor tender, the very words used in those who knew the Revelation devaluated along with the influence Avicenna exerted on their minds. REVELATION, LIGHT WHO ILLUMINATES, and even GOD were cut to the measure of the so called “Reason”. The divine frame of reference is *naturally* inaccessible to man. Nor can some *pretend* to be enlightened and mediate the ultimate goal of human existence, unless chosen by the free (and intended) act of God. The dispersonalized Light had been assimilated to the absolute formality of the universe and determinism was a consequence.

There is no such determinism to be found in nature. There is conditional determinism in it only (the necessity of end). *If* a definite outcome is to be obtained in science, a certain discipline *must* be preserved. *If* a man is to obtain beatitude, he/she *must* be honest. There is no absolute necessity in the relation to the ultimate. Not even the inner life of God unfolds according to necessity; for there is Nature in God too. All the less, the created nature “emanated” from Him out of necessity.

Bohr’s statement that the complementarity principle was going to assume quasi-religious meaning must be read in this context. For its importance is far-reaching indeed. There is the absolute source of the cosmic *energy* and irreducible to the source of the *formality* of the universe. Mathematical signs are formal no doubt. But they cannot produce natural effects, unless, perchance, experimenting be imagined creating. Objects, however, are not additive in the way artifacts are. There is always a potentiality in them and a form “added” to it. Nor is the entirety of the universe additive. The totality is opposed to its (actualizing) Outer Side; and the fact can be called *potentia oboedientiae*.

There is finality in nature, but nature as such cannot be its own end. What is most prominent in nature is the phenomenon of motion, but potentiality inheres in it. The definition of motion given by Aristotle makes the point clear. It is the successive actualization of a potentiality. Things can only be actuated from without. The same is the case in humans. They can never be their own end. Moreover, albeit man is a social being, not even a society can be his/her end. Society must “be open” in a sense indeed. It must be open to the Ultimate Transcendent Source. It is unnatural to both individuals and humans as such to focus on themselves. The end is more than what can be found in us; more than what can be thought of. No “modest” theory can satisfy human intellect. God is not “modest” in that sense. Neither may He be asked for what is modest; for it is outrageous to ask a King for e.g. an apple. The King is willing to give king-like gifts only. To those who advance towards the ultimate, no phenomena are “given”, but real things. Without acknowledging the *diversity of natures* it would be impossible to accept a real gift. If, ultimately, the divine is given, it can be accepted

by a human person only.

3. Between the measurable and unmeasurable

The discussion between Bell and von Neumann reveals, at least indirectly, the problem of the validity (and applicability) of the experimental method. According to von Neumann, some properties of the system must be non-additive and some observations impossible too, and using operators corresponding to certain observables must be restricted. As however, in general, mathematical theories might be deemed operators *sensu largo*, an unobservable residuum of nature appears and its ontological status undetermined. Moreover, the fact might be sanctioned in a way, and given a theoretical explanation. The problem might assume the philosophical form of idealism.

Bell granted the fact that some values are non-additive. Moreover, some values might be simply unmeasurable. The stance chimes in with Aristotle's conviction that the unmeasurable lies at the bottom of the measurable – the quantities are the accidents of things (different natures which are *knowable* but not measurable). Thus, the mathematical approach appears to be *a* theory and restricted to some realm (or “stratum”) of the world, whereas *other theories* (in the Aristotelian sense) should be juxtaposed (Metaphysics VI, 1).²⁵⁴

The values in question might, seem even “problematic” in a sense as being *practically non-discountable*. Their worth (if any) would not be practical. The relation of objects called useful to the human mind is rather perspicacious. But the relation of the unmeasurable to the measurable is far from being so.

The model of science in which the progress consists in formulating hypotheses, verifying and amending them so as formulate some others (more comprehensive ones) seemed to be practically efficient and applicable *ad infinitum*. Moreover, it pretended to satisfy the need for ultimate rationality; which is to say: the ultimate wisdom accessible to man. But the verification of some theorems proved impossible.

Should the paradigm of science be called experimental, some type of *experience* (different to experimenting) must bolster it after all, and just for the sake of the validity of the paradigm. In other words: apart from the mathematical and experimental approach, there must be another one yet, as the former proved to address some *aspect* of the real world only: the one delineated against the unexplored background; for the manner it was contrasted with it proved in fact unsatisfactory. Now, grasping an aspect is tantamount to dropping the rest;

²⁵⁴ (Metaphysics VI, 1; 1026a 18-21) ὥστε τρεῖς ἂν εἴεν φιλοσοφίαι θεωρητικάι, μαθηματική, φυσική, θεολογική (οὐ γὰρ ἄδηλον ὅτι εἴ ποὺ τὸ θεῖον ὑπάρχει, ἐν τῇ τοιαύτῃ φύσει ὑπάρχει), καὶ τὴν τιμιωτάτην δεῖ περὶ τὸ τιμιώτατον γένος εἶναι.

which is to say: to abstract.

The consequence is less “philosophical” than might be supposed. In fact, it might be the opposite. For without accepting the conclusion, the acknowledged philosophical stance called idealism (in the historically determined form) had to be accepted in bulk and unreservedly; whereas, after accepting it, a free space for purely theoretical considerations looms. They might be called philosophical, but do not need to. There is no need to stick to the words too rigidly.

Bell was a realist because he assumed the existence of hidden variables so as to rescue the common sense conviction that things exist beyond our mind and independently of it. The conviction was rejected by idealists. According to Einstein, the rejecting is nonsensical; indeed, it might seem to be deadly to science. The problem is, however, how to repudiate the rejecting and justify the conviction *rationally*. For the difficulties raised by scientists (e.g. von Neumann) *are*, and those raised by idealists *seem to be*, rationally founded. There is, at bottom, the problem of the relation of mathematical objects to nature.

Since Galileo, it had been assumed that the relation (albeit theoretically undetermined) is practically discountable. It had been hoped that the praxis would unfold forever. The conviction exploded.

Galileo’s paradigm was based upon the conviction that all values must be additive. The assumption was not scientific (should philosophy be denied the name of science; for philosophical errors must be so no doubt) as it hails to the ancient theories of Pythagoreans and Plato, and all the more, to the philosophical transcendentalism of Avicenna. Moreover, it was acknowledged as such by philosophers themselves; for Edmund Husserl calls Galileo’s discovery “fundamental”, which is to say: “phenomenological”. To be precise: the phenomenological is not the theoretical, and modern philosophy does not pretend to provide as definite explanations as Aristotle did.

It was supposed that objects could be both analyzed and synthesized. As for those artificial ones, the claim seems to be fully justified. What, however, about those natural ones? Can e.g. a cat be “analyzed” and “synthesized” too? If it had been a “machine” (Descartes), it must have been so.

The answer that cats are not worth being analyzed and synthesized is not to the point. True, we have so many living cats that producing the artificial ones seems to be superfluous. But “producing” e.g. human body parts (if possible at all) could not be called so. Now, the problem is to which extent (if any) the “producing” is feasible. To which extent natural beings might be “meliorated” artificially? The answer that the possibility is to be checked experimentally is again not to the point. Someday people might awaken to the fact that the “meliorated” would not be what they could have expected. But this experience could not be used then. Most probably, every one of us will experience his/her own death. But the experience of someone who takes his/her own life cannot be discounted. The attempts to “meliorate” the human race might prove as suicidal as they proved to be felonious in the past.

First of all, the question must be asked if the specific reality of natural objects could be changed at all, and some modifications obtained similar to those obtainable in artificial objects.

Albeit analyzing and synthesizing might be juxtaposed, the problem of analyzing natural objects is easier to cope with. Literally speaking, a cat can be analyzed at least in the sense of its body being possibly dissected. The problem is whether the process is reversible; for experiments must be so indeed. Anyway, producing living cats smack of nonsense.

Thus, the fact that a cat fell prey of “analyzing” first is rather understandable. For it was *an* imaginary cat; the famous Schrödinger’s cat. The problem is that it was regarded as *the* cat (i.e. replaceable by any living one). Let us make the point clear:

- 1) Elementary particles are supposed to act statistically;
- 2) A cat can be “analyzed” up to its elementary components;
- 3) If depending (in its existence) upon the elements; a living cat is “statistically alive” too.

To be precise: the Schrödinger’s cat was not that much “statistically alive” as rather “statistically dead”; for the mental experiment was meant to prove the possibility of killing it. Now, as for killing animals (e.g. when hunting) the point is clear. There is a certain probability that a bullet hits the mark. *Some individuals* of a given species can be killed no doubt. But the Schrödinger’s cat pretended to be more than just an individual. It pretended to be not just *an* animal; but *the* animal. The problem is that the imaginary cat was supposed to *represent adequately* the feline nature.

It goes without saying that natural objects can be both positively and inversely affected by artificial procedures. The problem is, however, how to understand the natural in this case.

The statement that some species were exterminated by humans is not tantamount to that they had not existed. For it is not about a *history of species*, but about what they have been. It is the fact that bison were exterminated in Europe. Nothing, however, can change the fact that they had existed. Not the species as such was exterminated, but all individuals thereof. The difference is pivotal; for the empty place left is a privation indeed. It is the privation of a *form essential* for the ecosystem of the world. The fact of its existence is necessary, and in this sense the Aristotelian claim that species are eternal is understandable. Still, no special importance should be attached to the very word of “eternity”. It is not about *durability* at all. It is about some facts being absolutely unchangeable, no matter how artificial and sophisticated the procedure adopted to nullify them. Most probably, man is able to destroy definitely the life of the earth. Such a possibility seems to be open. But nothing can change *the fact* that the environment he/she found of the earth in the moment he/she appeared on it was perfect; was perfectly prepared for his/her existence.

The core of nature is unchangeable. The sense perception informs about the fact to lesser or greater extent. In what is called species sensibilis information about what things really are; about the discrete displacement of the cosmic energy is potentially included.

To sum up: despite undisputable advantages of Avicenna’s and Galileo’s paradigm of science, some drawbacks thereof must be made out too. There must be something *beneath* phenomena, and not “above” them; not “transcendental”. The phenomena might be called observables. By sheer contrast a new term of beable was coined. For TO BE is considerably

more than to be OBSERVED indeed. Bell introduced the term. But words must not be credited with too much; they might be λόγοι, but then, they are definitions and correspond (in a system of science) to discrete forms of the world energy (to species). The real definitions are indispensable in science. They enable us to distinguish objects.

4. A non-physical interpretation of the principle of complementarity

If Niels Bohr's statement about quasi-religious meaning of the principle of complementarity should be taken literally, it must be analyzed nonetheless. Discipline must remain what it meant originally, which was, however, not the case with some modern interpretations of science.

... the discipline's metaphysical inclination was determined, so to speak, at the outset by the fact that quantum mechanics' founding father, Niels Bohr, had the reputation of something of a guru with "a quasi-mystical understanding" of the field and a preponderance for gnostic utterances over which physicists still pore today. "I have been getting sporadic flashes of feeling that I may actually be starting to understand what Bohr was talking about," wrote the physicist David Mermin, "Sometimes the sensation persists for a many minutes. It's a little like a religious experience."²⁵⁵

Apparently, some implications of the principle (some general conclusions of science) suggest some *direction* of discovery. Every natural movement and action *turns* to the Transcendence. In particular, human activity taken as an existential act points out, to a greater or lesser extent, to Something Beyond. The *vector* of the act is defined naturally; for the relation is asymmetrical. Thus, in the aforementioned "experience" the vector thereof must be determined too; which is to say: its natural status examined. To be precise: no *natural* relation of God to creatures can exist. God enters the human history as the *Subsisting Relation*. The relation of the universe to Him is asymmetrical.

The statement that scientists are subjectively motivated to some conclusions that reach beyond the actual scope of discovery is banal. Some ordinary circumstances of life are likely to occasion similar generalizations. In fact, every time a man stumbles upon an existential impasse, he/she asks about the cause; which is to say; about the sense (of life), as the sense of some life activity has been questioned. If actions are rational (sensible), every obstacle could problematize their rationality. Obviously, ordinary actions are not rational to the extent scientific ones are. Still, as they might be reflected upon (and quite thoroughly so) they can, at least potentially, reveal the depth and drama of human existence. At best, it might be

²⁵⁵ Nick Spencer, Quantum Theology.

<https://www.theosthinktank.co.uk/comment/2018/09/14/quantum-theology>

supposed that Bohr's reflections were fundamental and all-encompassing and thus rational par excellence. However, the claim is to be proved after all, as existential considerations have accompanied human existence on the earth from its very beginnings, and those most ancient ones were in many respects considerably more profound than the modern ones. Homer's *Iliad* says more about human life than e.g. Kierkegaard's books.

Thus, the objective sense of the statement should be settled; for the very conclusions of the modern science are not restricted to a narrow realm of the reductionistically treated science. What is to be settled is the relation of man to God, and, as it must not be arbitrarily so, some method must be adopted. Let us examine the methods which had been adopted in the past. There was a special science designed to cope with the problem.

For many centuries, theology had been believed to settle the nature of the relation. As for the science which is called theology in the common sense of the word nowadays, it ceased to, once it was believed to tackle the relation of *man to God* principally. Human consciousness was believed to evolve, and no objective sense could be enucleated from the evolving. Theology had been a science and its statements objectively valid as long as *set in the objective* context; and for theology itself it was that of God revealing Himself. Things do not reveal themselves in science in the normal sense of the word, but science in general must unveil their nature nonetheless. Thus, the fact that theology can be (and was) a science becomes visible. Moreover, historically, the science about God in general was science par excellence.

According to Aristotle, the science called by him theologies, is divine in two senses: in the objective sense, as it is the science about God; in the subjective, as it is the science God has of Himself. As however, the latter point of view is not *directly* accessible to man, the subjective and man-like theologies would equal – to Aristotle's mind – what he called θεολόγια – some poetic utterances about God bereft of stringent meaning. No existential theology could exist, as no subjective and existential engagement is allowed in science. There is a personal act of will which follows understanding, but for the understanding to be what it must be i.e. *motivating* the will, it must be disengaged and disinterested.

Historically, in modern times, it happened to be the opposite: the theological disputes used to be extremely heated. The fact might be given a twofold explanation. Either some statements were deemed extremely important; or some deemed themselves extremely important just because uttering the statements. Obviously, only the first attitude is constructive for knowledge. In a concrete person, an emotional engagement *precedes* and *follows* understanding, but should never affect it.

The worth of Revelation was questioned by rationalists and tried to be replaced by “philosophical faith”. Now, whilst the Revelation cannot be emotional, the “philosophical faith” must be so. Both types of reasoning listed by Aristotle (both types of theologies) are originally (in the Middle Ages) theoretical. They must have been apparently so if regarded historically. A purely naturalistic point of view must have preceded the Revelation. Otherwise, the Revelation could have never appeared as a free gift of God and be literally *super-natural*. Gifts might be accepted more or less willingly (or rejected for that matter too). If the gift should be acknowledged as such, it must be so theoretically. The personal

engagement that follows is *disproportionally more vehement* than any “philosophical faith” can be, and most probably the vehemence was dreaded by those who thought of the “philosophical faith” as a remedy. Historically, *this* philosophy was allotted the improper place when facing some principles transcending in fact its subject matter. In the Middle Ages, the principles were explicated by the other type of theologies. Then, two vectors of the aforementioned relation were regarded from appropriate points of view.

The two types of theologies were neatly distinguished by Thomas. Some modern philosophers regard the distinction as a cornerstone of Thomism. John Duns Scotus blurred the distinction albeit his theological work can make up for the philosophical mistakes if the distinction be restored. Not the work of those who accepted his *philosophical* bequest so. Goclenius, Clauberg, Wolff and Kant created a hybrid of the two theologies to the detriment of them both. John Duns Scotus must have been completely unaware of how disastrous the conclusions drawn from his principles could be. They were so as to the natural foundations of the religion. They were so as to the emotional engagement of scientists who wasted their energy on vague fantasies. The fact that prominent physicists were engaged in what must have been purely theoretical considerations is notorious. The distinction between science (in the narrow sense of the word) and what transcends it must not be blurred. There is something scientific ideas are checked against and, consequently, related to. Normally, a relation presupposes objects it is founded upon, e.g., in the physical world paternity is (spotted as) the relation between the father and the son. But on the other hand, the parenthood can be understood as constitutive of the members of a family, as long as *indented*. Indeed, science must be (essentially) related to its objects and the ideas conceived in the mind rather than accumulated like letters on a sheet of paper can be. The letters are significant as long as intended to convey intelligible purport. Science, in general, is about relations; for its very being consists in being related.

Metaphysics is no material object, albeit a material object (a book) can have the name printed on it and be known as *a* metaphysics first. It is the first science not in the sense of preceding the other in time (as the material precedes the formal), but in the sense of being intended (as Aristotle has it) from the beginnings of human existence. It is the science which tackles *ens inquantum est ens* (the order of the universe) and that is why – as no other relation – it substantiates that which might be found on its both extremes. Metaphysics regards the natural relation of the world (and of man consequently too) to the Transcendent Principle. Still, once the status of the relation settled, a possibility looms to obtain a definite knowledge about the world on the one hand, and to accept the free initiative of God who reveals Himself on the other. Aristotle himself did not use the name of metaphysics. Strikingly enough, the supreme science was called by him theologies; it is an “expectation”, albeit no “religious” meaning can be ascribed to it. Thus, what was *between* physics and religion (as a relative in the full sense of the word) made (later on, in Thomas) both science and the knowledge about the nature of God occupy the proper place in the *human* world.

5. Holism

There appeared, on the margin of science, a “theory” pretending to make up for the deficiencies of the mechanist bias in it. It was called holism. It was occasioned by some (interpretation of) facts observed of quantum mechanics. Some systems existed that are a-local. On the other hand, some phenomena seemed to undermine the traditional notion of causality. As was pointed out above, the “traditional” meant “deterministic” there. The transfer of some signals was observed to be faster than the speed of light so that objects was to be located outside their cones of future; which is to say: outside normal causal relations. As for the a-locality, the simplest example thereof was the “statistical” presence of electrons behind diffracting slits. Now, as quantum entanglement was *observed* in some objects indeed, it was assumed that it *observed* as a general truth whose glimpses could be obtained by means as far foreign to science.

The intentional part of natural actions was compared above to a field of potential. In holism, the purely physical phenomenon was given some fantastic explanation:

The field of a whole is not something different and additional to it, it is the continuation of the whole beyond its sensible contours of experience. The field characterizes a whole as a unified and synthesised event in the system of Relativity, that includes not only its present but also its past—and also its future potentialities. As such, the concept of field entails both activity and structure ... Wholes are composites which have an internal structure, function or character which clearly differentiate them from mechanical additions, aggregates, and constructions, such as science assumes on the mechanical hypothesis. The concept of structure is not confined to the physical domain (e.g. chemical, biological and artifacts); it also applies to the metaphysical domain (e.g. mental structures, properties, attributes, values, ideals, etc.) ...

The whole exhibits a discernible regulatory function as it relates to cooperation and coordination of the structure and activity of parts, and to the selection and deselection of variations. The result is a balanced correlation of organs and functions. The activities of the parts are directed to central ends; co-operation and unified action instead of the separate mechanical activities of the parts...

It is the intermingling of fields which is creative or causal in nature. This is seen in matter, where if not for its dynamic structural creative character matter could not have been the mother of the universe. This function, or factor of creativity is even more marked in biology where the protoplasm of the cell is vitally active in an ongoing process of creative change where parts are continually being destroyed and replaced by new protoplasm. With minds the regulatory function of Holism acquires consciousness and freedom, demonstrating a creative power of the most far-reaching character. Holism is not only creative but self-creative, and its final structures are far more holistic than its initial structures.²⁵⁶

That the totality of the world might be system, was not a novelty. What was new was the claim that it cannot be known in the way an ordered totality used to. Everything was believed to be connected with everything without order, which rendered the traditional paradigm of science null and void. For science had always consisted in ordering objects so as to obtain

²⁵⁶ Holism

<https://en.wikipedia.org/wiki/Holism>

some complex notions. The stance was simply reversed. The complex (totality) was supposed to be known first.

Holism was a consequence of some theses espoused by John Steward Bell, albeit the consequences of holism itself spring the narrow boundaries of the science which had existed before. The term of holism is used by the advocates of New Age, the adherents of the Orient religions; by those who believe in paranormal phenomena; in the efficacy of the medicine called holistic. Some believe in telepathy or the possibility of a “passion at a distance” (Shimony). Even the term of quantum theology was coined. All those stances seem to be inspired by a spirit of mutiny towards the existing order.

As Heisenberg put it, science had ceased to be a way of peeking unnoticed at the world, and instead had become “an actor in [the] interplay between man and nature.” ... You can see the religious appeal here. If science has allegedly been the extended story of sidelining humanity as Freud famously thought – first from the centre of the universe (Copernicus), then from the centre of life (Darwin) and then from the centre of ourselves (Freud, of course) – quantum mechanics has done our pride a whole load of good by rediscovering the reality and significance of human subjectivity right at the deepest most intimate level of all creation. “We turned the world inside out”, Bohr tells Heisenberg in Michael Frayn’s play *Copenhagen*. “Throughout history we keep finding ourselves displaced. We keep exiling ourselves to the periphery of things”: *“Until we come to beginning of the twentieth century, and we’re suddenly forced to rise from our knees again... here in Copenhagen...we discover that there is no precisely determinable objective universe. That the universe exists only as a series of approximations. Only within the limits determined by our relationship with it. Only through the understanding lodged inside the human head.”*²⁵⁷

Holism is a monism and thus it must face its normal consequences. If everything was connected in the sense of being confused, then human thinking (in all its forms) must be so too. But then, it would impossible to know anything without knowing everything else. The consequence was at least indirectly admitted; for instead of reasoning an idea of intuition appeared in this context.

According to Zukav, creating authentic power is a highly personal endeavor that requires the development of emotional awareness, responsible choice, intuition, and trust in the Universe, which he describes as “alive, wise, and compassionate”. He asserts that each individual can create authentic power only for himself or herself. He defines intention as a “quality of consciousness that infuses an action”, i.e., the reason or motivation for the action, and choice of intention as the “fundamental creative act” that each individual performs continually, whether unconsciously or consciously. Creating authentic power requires consciously choosing intentions that create consequences for which the chooser is willing to assume responsibility (responsible choice), which requires emotional awareness, and which intuition can assist.²⁵⁸

²⁵⁷ Nick Spencer, Quantum Theology.

<https://www.theosthinktank.co.uk/comment/2018/09/14/quantum-theology>

²⁵⁸ Zukav

https://en.wikipedia.org/wiki/Gary_Zukav

This, however, undermines the very foundations of the European science, which consisted in preponderance of reasoning over vagueness of statements. Really, resigning from them used to be a mark of science. But in fact, holism cannot pretend to be a definite explanation either; for such an explanation could not be incorporated into “holistic” paradigm of science. The spirit of destruction permeates the stance.

Let us focus on the essential in it then:

The fundamental holistic characters as a unity of parts which is so close and intense as to be more than the sum of its parts; which not only gives a particular conformation or structure to the parts, but so relates and determines them in their synthesis that their functions are altered; the synthesis affects and determines the parts, so that they function towards the whole; and the whole and the parts, therefore reciprocally influence and determine each other, and appear more or less to merge their individual characters: the whole is in the parts and the parts are in the whole, and this synthesis of whole and parts is reflected in the holistic character of the functions of the parts as well as of the whole. [In brief:] The whole is greater than the sum of its parts.²⁵⁹

The latter statement is not as new as may be supposed. It is a not, to be sure, a literally translation of: *omne totum maius est sua parte*, which appears in Thomas, but a slightly different form of it. The claim that Thomism is holistic is nonsensical though, as the Thomasian formula is more precise. “The totality is greater than any of its parts” means that it is more than sheer accumulation thereof. Still, the statement appears in Thomas in a different context, and thus has a different status. In Thomas, it is *a principle*. The principle is not trivial, as it might appear at first glance. The full purport thereof will be discussed in the next CHAPTER. According to Thomas, a definite cognizance (proper to science), in which parts are those of definitions and syllogisms, is preceded by the cognition of *a totality* in which the aforementioned parts are potentially (habitually) included.

Although the term of parts does not seem to apply to causes fittingly enough, it is essential to science *to divide* so as to obtain a systematic and ordered knowledge. The term seems to apply to elements perfectly though. So, let us focus of the elements of material objects we normally see.

No one would deny the fact that an animal’s body is composed of parts. The parts are material; which is to say: they are bound to fall apart some time. Death (falling apart) is a natural phenomenon. To the contrary, the life of an animal consists in preserving the totality of those parts (for say, 10 years in dogs, for instance). *This totality*, however, is *conditional* only, as dependent upon a constructive interaction with the environment. The environment conditions the life.

Now, as to the *constructive* meaning of the aforementioned principle, a simple question might be asked *to Cartesians*: if I see an animal’s body, do I see it part after part and my perception is an integration of parts as Locke, Hume and Condillac believed, or rather I

²⁵⁹ Holism

<https://en.wikipedia.org/wiki/Holism>

see *a totality* (and indistinctly so), in which some parts can be distinguished subsequently? But as to the *absolutized* meaning of the same statement, a question might be asked *to the advocates of holism*: are not the totalities *different* for different objects? The statement that my dog is such a totality is plain, whereas the primitive cognizance of the *absolute* totality is problematic to say the least of it.

The paradigm of science connected with the names of Descartes and Leibniz opted for the “computing” of parts. Now, holism is an excessive reaction for that paradigm. Empathy, intuition, emotionality and the like “values” appreciated in holism are in fact an awkward expression of the sentiment that animals (and people in this respect too) are more than just “machines” and “aggregates”. A harm inflicted to an animal is more than “damaging” a “machine”. But things are what they really are not only apart from being “computed”; they are so apart from our being compassionate with them too. No experiment can render things real, and “experiencing” (an empathy) either.

This holds true both for human experimenting (and human sentiments) and the cosmic experimenting performed by the allegedly evolving nature. None of them can render things real; as dreamt of in the following words:

We can be quite specific about this, and even conduct elaborate experiments into the topic. Herein lies Heisenberg’s famous point about never being able to determine (to some arbitrarily precise degree) both the velocity and the position of a sub-atomic particle. And herein also is the oft-cited fact that the mere act of making the measurement seems to turn a wave into a particle. “Different ways of looking can elicit apparently mutually contradictory answers”, Ball writes. “Different measurements produce different realities. Not just different results, but different realities – and what’s more, ones that are not necessarily compatible with one another”.²⁶⁰

Holism and Darwinism are complementary in this respect. They differ but in the stress put of “objects” or “subjectivity”:

This reality-shaking, metaphysically-inclined reading for quantum theory is grounded in the way in which it seems to re-introduce subjectivity into scientific debate. The scientific method has been a long slow ascent of Mount Objectivity, removing personal perspective (and bias) from our understanding of reality to get an ever clearer view of that which is the case. Through experimentation, repetition, collaboration, and the like, the ‘I’ is withdrawn to make space for a truth that is, and should be, frankly indifferent to my existence. Gravity, evolution and the second law of thermodynamics are real, irrespective or not of whether I want them to be. My presence, let alone my involvement or approval, do not matter.

And then quantum mechanics comes along. In the words of Werner Heisenberg, another founding father, “the natural laws formulated mathematically in quantum theory no longer deal with the elemental particles themselves but with our knowledge of them.” This “was the

²⁶⁰ Nick Spencer, Quantum Theology.

<https://www.theosthinktank.co.uk/comment/2018/09/14/quantum-theology>

unsettling thing for the pioneers of the theory,” Ball told me in discussion. “Most theories propose to tell us something about the underlying phenomena that are causing what we see – it points down into the world, if you like.” In contrast with this, quantum mechanics is pointing towards us. “It says, ‘this is what you will see’ and it’s even that specific. It is not saying this is what one will generally measure; it is saying ‘you under these circumstances in this experiment will see this.’”²⁶¹
... “the act of measurement actively constructs the reality that is measured.”

In the words of Bohr’s colleague Pascual Jordan: “we ourselves produce the results of measurement.”²⁶²

Darwin’s theory of organic descent placed primary emphasis on the role of natural selection, ... and variations that are the result of individually acquired modifications in the personal sense are attributed by Smuts to Holism; further it was his opinion that because variations appear in complexes and not singly, evolution is more than the outcome of individual selections; it is holistic.²⁶³

Despite being so radically opposed to mechanicism, holism is – paradoxically enough – a continuation nonetheless. There was a proxy anticipating the reconciliation. The role was played by the theory of evolution. It showed how to overcome the drawbacks of the traditional Newtonian paradigm (objective measuring) so as to evaluate “spirits”; “mystics”; “intuition” (subjective measuring), all of which was (how “undeservedly!”) banned from science. Holism is adamantly consequent in exploring the virtuosities inherent in the theory. For it are we who “strive for survival”; explore potentialities; create new entities. The stress was put on the subject. The “we”; the human subjectivity is that advancing in the avant garde of evolution.

Not only parts of the natural (material) environment are inversely affected by Descartes’ computing paradigm. The human environment, made up of reasoning individuals; of persons passing morally upright decisions, is affected too.

Imagine a person you are talking too. You hear his/her voice; see his/her face; squeeze his/her hand. Now, do you compute the partial experiences obtained via different senses, or rather perceive a definite object; a *conditional totality* which can be called a person? The information obtained via different channels of perception (and different experiences gathered in time too) are impossible to be integrated in terms of “computing”; “association” or the like (Locke, Condillac). It cannot come as a surprise that *those* senses were blamed for being “blind” for what is essential.

“Our evolution, until very recently, has been as five sensory humans evolving through the

²⁶¹ Ibid.

²⁶² Ibid.

²⁶³ Holism

<https://en.wikipedia.org/wiki/Holism>

exploration of physical reality. That is the same thing as the pursuit of external power. Now we have crossed the threshold, we're in new territory, a brand new domain. We are now becoming multi sensory. That means we are no longer confined to the five senses. Now I use these terms because the five senses together form a single sensory system and the object of that sensory system is physical reality. That's what it is designed to detect. As we become multi sensory, we move beyond the limitations of the five senses and we now are evolving to a different mechanism in the exploration of physical reality. We are evolving through responsible choice of and with the assistance and guidance of non physical guides and teachers.

We are spiritual beings, we have always been spiritual beings and we will always be spiritual beings. The difference is that now we are becoming aware of ourselves as spiritual beings and that is making all the difference."

Zukav introduces the concept of the alignment of personality with soul as the creation of "authentic power". He asserts that a transformation of humanity is underway from a species that is limited to the perceptions of the five senses, evolves by surviving, and survives by pursuing "external power", which he defines as the ability to manipulate and control, into a species that is not limited to the perceptions of the five senses, evolves by growing spiritually, and grows spiritually by creating authentic power. He further asserts that this transformation brings with it the new potential of authentic power and that the pursuit of external power is henceforth counter-productive to our evolution and produces only violence and destruction.²⁶⁴

The solution proposed by holism is far from being satisfactory; in fact, it can hardly be called understandable. The nature of the human original perception has remained unclear. Now, it was given by Thomas a quite precise term of *cognitio confusa*. It will be discussed subsequently.

Human rationality is manifested first of all in the faculty of speech. The paradigm of addition might well satisfy those who relish in deciphering "the language of chimpanzees", but cannot satisfy the requirements of human speaking, which should be more than gibberish. A sentence begins with a capital letter and ends with a full stop. What is between is not "added" in the way points of a section can. A sentence is a meaningful and conditional totality. It can only exist as such, and can never be "computed" in the way numbers and magnitudes can. Parts (the quantitative ones) can add on equal terms. But in a sentence, one part is *formal* in respect to another one. Otherwise no whole could have been built. Forms are rather *superadded* than juxtaposed. They are "added" to the matter prepared to it only. In Avicenna, the point is visible yet, despite the implicit transcendentalism, which was bound to bear poisonous fruits in modernity; for the idea of *formality* replaced the notion of *different forms*. The stress put on *computing* (subjectivity) instead of *the computed* (objects) has changed in fact nothing (in principle) save destroying the valuable in the traditional paradigm. For nothing constructive was invented by holism to replace it.

The value of the traditional (Cartesian) paradigm is unquestionable though. With some

²⁶⁴ Zukav

https://en.wikipedia.org/wiki/Gary_Zukav

(pragmatically valid) *approximation* we might assume *provisionally* that e.g. food we consume; the air we breathe; and the transplants used in surgery are “parts” which are accepted from without. The only problem is that the human nature (and any nature for that matter too) cannot be defined *peremptorily* in quantitative terms. The portions of what might be imagined the “stuff” of the universe cannot define the parts of the universe. For food, transplants and all natural objects are transformed in a *specific* manner (or rejected at all for being not specified enough) by a specific nature. There are no material “parts of the totality”; there are *the* “parts” of a totality only. The latter however, is known first, and that is why the computing paradigm can work at all (albeit actually unconscious of the natural basis it has been founded upon). The natural way of cognition is that in which grasping “a totality” (principles) intellectually precedes enumerating its parts. The principle: The whole is greater than the sum of its parts; *omne totum maius est sua parte*; must be adopted as explaining the genesis of (*personal*) cognition, but on the other hand, it can never be adopted otherwise. Holism is (if it be anything at all) a *principle*, but is never a *science*. There is a possibility of expanding principles (nay, this seems to be the only genuine existential possibility), but there is no possibly to set up a dialogue with what is inarticulate. Children babble, which is natural, as long as expected to grow up. What is primitive in cognition can never satisfy what is expected to be enucleated therefrom. Principles are but principles. They cannot be used in a rough form.

As for the aforementioned a-locality, the principle is conditionally valid, obviously enough. It cannot observe unreservedly, albeit its validity is proved in that it *observes in specific* objects. The principle observes as to diverse, specific objects only, and that type of “holism” is justified only. Parts exist *within* an individual. Similarly, the aforementioned a-causality observes in individuals only. Nothing is a cause of itself. In natural phenomena, the moving and the moved must be distinguished, but they prove to be eventually different objects. Nature works in a definite manner intending their generation.

The Darwinian nature is similar to an autistic child, who puts up with arraying material objects because unable to do anything else. It can be doubted whether the child can “determine” the objects in that manner. At least, he/she cannot name them properly. Science is just more precise in naming objects; for defining is naming par excellence.

The parts might be, theoretically, “very distant”, but the distance as such does not affect the identity of a natural objects. Their parts are entangled, which is naturally visible in the objects we see with our eyes: they are different from each other but each one is not different to it itself. (They are *relatively* identical). No other totalities than those of the specific objects are naturally and *directly* accessible to human mind. The totality of the universe is not so, albeit the idea of a three-dimensional space might have suggested so.

We perceive some objects and differentiate them next. We distinguish the moving and the moved; the form and matter. At least, we abstract the form of quantity and apply it material objects. Human rationality can only proceed from what is related essentially (entangled) towards what must be distinguished.

The paradigm of science in which individual humans are “machines” (possibly partaking of the common psyche) is unhuman, understandably enough. This explains why the

reaction might have seemed attractive. The world of scientism resembled a gigantic dissecting-room in which everything can be divided and added, with purely pragmatic objectives in mind. Objectives are a mark of rationality after all; for a means imply a notion of an end and order, at least a pragmatic one. No such an order appears in holism. It reassembles nothing save disorder.

Bohr's metaphysical option mentioned above must be given a strict interpretation. Metaphysics can come as a fulfillment, but no intuition can claim its name. Thomas writes that metaphysics is a mark of intellectual maturity and the complement of the systematically raised edifice of science.²⁶⁵ It is so, because "the conclusions of metaphysics are nighest to its principles". Still, they are not as nigh as being possibly identified with the principles. They are nigh because human intellectual nature unfolds its potentialities fully in this science.

6. Evolution

The idea of matter bequeathed by Avicbron to Descartes and those who followed him in modernity weighed heavily upon both science and the common day image of the world. The idea of ὕλη, a "stuff" undergoing accidental modifications only i.e. those not affecting its essence had accompanied the Greek thought since Tales. However, that modern one differed in that it was supposed to be absolutely uniform. The ancient notion had had some provisional value, but both Plato (indirectly) and Aristotle (systematically) disposed of it. As Thomas has it, the notion of prime matter appeared in them to be more precise than that of the predecessors.

The Cartesian *res extensa* (and Avicbron's *forma corporeitatis*) was, according to Thomas, a mathematical form. Still, it underwent motion in the way similar to the "matter" of e.g. Anaximenes. In Descartes, it was momentum which was the number of motion; in Leibniz, it was the (doubled) kinetic energy (*vis viva*). The first impulse of motion must be (if ever) understood to be first in time. The linear idea of time prevailed.

No such an idea existed in the ancient Greece. The notion of stability; of harmony is pivotal there. This chimes in with the physical statement that, in nature, the amount of the potential energy is counterbalanced in relatively closed systems by the amount of the kinetic energy. Some relatively stable systems exist, in which the two types of energy interchange. An ideal system of this type is a RLC circuit. In nature, the energy is stored and transmitted in an analogical way in substances, which is most salient in those vivid ones. Moreover, there is an analogue of resistance there too. Some amount of energy must be in nature irretrievably

²⁶⁵ Super De Trinitate, pars 3 q. 6 a. 1 co. 22. Unde patet quod sua consideratio est maxime intellectualis. Et exinde etiam est quod ipsa largitur principia omnibus aliis scientiis, in quantum intellectualis consideratio est principium rationalis, propter quod dicitur prima philosophia; et nihilominus ipsa addiscitur post physicam et ceteras scientias, in quantum consideratio intellectualis est terminus rationalis, propter quod dicitur metaphysica quasi trans physicam, quia post physicam resolvendo occurrit.

lost (dissipated; dispersed) as all substances, according to Aristotle, must perish after coming to existence. The loss is being made up for some time only (e.g. the life of an organism).

The Aristotelian substance might be called the harmonic oscillator. Richard Feynman lists many examples of harmonic oscillators existing in nature. It may be added that the whole universe is, most probably, one gigantic closed system of this type. As, however, some amount of energy must be lost (due to the inertia of the prime matter), some amount of energy must be pumped into the system from without; from the Transcendent Cause.

The transfer of energy observing here has nothing “mystical” in it. Nor is the world “compassionate” albeit passion (*moveri*) is its natural feature. The totality of the universe is a structured system in which only discrete (definable) levels of energy are admissible.

Contemporarily, the mechanist reductionism becomes (at least practically) contested as the awareness is growing that the universe (or at least the world we live in) is a closed system indeed. The observations able to bolster the conviction are nowadays incomparably more comprehensive than ever. Still, the sentiment that the world is a harmonious system (*κοσμός*; *mundus*) harks back to the antiquity.²⁶⁶ The myth of Antaios depicted the attitude of man to nature. Every time when thrown down onto the Earth (the Earth – *Ge* was his mother) the Giant regained his strength. Heracles only managed to vanquish him after hoisting in the air. Cut off his/her touch with nature man becomes a weakling. Hence, the Greek postulate of living according to nature.

Our European notion of nature has been inherited from the ancient past. Etymologically, *φύσις* (nature) stems from *φύειν* (to be born). The abstract notion was elaborated upon an actual phenomenon. The tendency to abstracting is typical of Greeks and was bequeathed to us also. The concept of nature was fertile enough to unfold along the same pathway. In Boethius, the term of nature applies to God. Moreover, there was theologian whose work inspired the Middle Ages there too, albeit his very name is wrapped in a shroud of mystery. (Pseudo-) Dionysius Areopagite spoke of *mirabilis coniectio entium* (a marvelous continuation of beings). A hierarchy of diverse beings exists, all of which is distinguished by just one “degree” of the perfection of being. According to Aristotle, species are like numbers: the unity added or subtracted to one of them would have changed it into another one. To be precise: they are similar to natural numbers, and quite dissimilar to sets. The levels of cosmic energy must be discontinuous, and the continuation Dionysius speaks of consists in relations amongst diverse objects first, and in them being *actually* related (matched) by an efficient

²⁶⁶ Sancti Thomae de Aquino, *De motu cordis*

Item animal perfectum, quod est movens seipsum, maxime accedit ad similitudinem totius universi: unde et homo qui est perfectissimum animalium, dicitur a quibusdam minor mundus. In universo autem primus motus est motus localis, qui est causa alterationis et aliorum motuum. Unde et in animali magis videtur motus localis esse alterationis principium, quam e converso. Unde et Aristoteles in octavo *Physic.*, hanc similitudinem sequens, dicit quod motus est ut vita quaedam natura existentibus omnibus[...] quia, ut Aristoteles dicit in *Lib. de motu Anim.*, existimandum est constare animal quemadmodum civitatem bene legibus rectam.

cause eventually. If an *elán* had existed in nature, it could not lead to blurring distinctions and to disorder. It can only be rational; for the mark of rationality is to intend definite outcomes. The outcomes are definable (possibly grasped in definitions and syllogisms) first of all; but in quantitative terms secondarily only. The natural unity is prior to the mathematical one.

The relation of man to nature is a Schlagwort of the contemporary culture. That the relation might be settled precisely, two extremes must be avoided. 1) The infantile conviction of Rousseau that the civilized man was a debauched animal and the liberation was to be sought in restoring the state of the bestial innocence. 2) The conviction (directly opposed to the former) that man is only definable by his/her culture; i.e. “consciousness”. The stances are contrary, which means that they imply a common presupposition. (We must only choose between what is *contradictory*; and these types of existential choices are pretty scarce in the real life. In fact, they all depend upon the first intellectual principle; the principle of non-contradiction; the root of liberty.) The flawed supposition shared by the two stances reads: Humans culture is transcendental towards the crude nature.

The “burden of civilization” might be scarcely bearable, if the “civilization” is meant to define people and some “existential choices” forced upon them. For people are sociable because being rational and not vice versa. Some choices need not to be done. E.g. instead of “choosing” between the assisted suicide and gradual degradation in hospital (profitable either for those “assisting” or those selling the medicines) man has the right to refuse to be cured at all.

It is really astonishing that the “civilized” man would rather abandon all facilities meant to render his/her life “easier”. Perhaps, the authentic life must not be “easy” at all. Some dangerous animals and extreme habitats appear attractive. Now, the problem is *what* is really attractive here.

The key-notion here is Dionysius’ *mirabilis conectio entium*. It are not entia (beings; species as such) that are attractive but *them being so marvelously connected*. Civilization might (at least potentially) disrupt the continuation and the restoring comes as an enlightenment. Eventually, the *cause* of continuation and connection must be sought. According to Thomas, the First Cause connects all causes to the effects. It is this glimpse into the ultimate that ravishes. The fact might not be given the proper name; for it is by no means obvious what is most natural to man. The easiest is decidedly not so.

The path towards the ultimate might be (sometimes) as dangerous as climbing without protection (e.g. a rope). Now, what is really “attractive” in it is not sheer abyss of uncertainty yawning beneath, but the ability to master the situation. When climbing an extreme wall, one must measure each step carefully and systematically. Some obstacles might be waylaid by the reckless or irresponsible. They all are to be removed. The Way towards the Ultimate must be fully rational.

Mirabilis conectio entium might appear to be broken by some artifacts meant to facilitate human life. In fact, they could so (break it and pretend to facilitate) as far as being irrational. In principle, all human activity might be spurred both by the rational and irrational in man. In the latter case, the artifacts are bound to turn against man sooner or later. So that the civilization be what it should be, it must be a rational structure and the principle of the

upright intellect adopted in it for all its discrepancy to what seems “modern” today. Both natural and moral laws must be observed. The sentiment that the only role of society consists in accumulating material goods, was taken for granted, but it was not so for the ancient Greeks. Neither is the sentiment as progressive as it looks; for it was invented by the medieval Averroist Marsilius of Padua. For ancient Greeks, the power (ἀρχαί) was legitimized as long as stemming from principles (ἀρχή means principle).

Thus, the provenience of the notorious: “greed for the lack of a better word is good” becomes visible. Averroists managed to damage the core of the Western Civilization.

Normally, the intellect conditions human decisions. Still, the relation might be tried to be reversed and the rational in man tried to be defined by (existential or economic) choices. According to libertarians, the social equilibrium is obtained by matching demand and supply. Not only material goods can be concerned. By extension, ideas (and political programs) might be provided to the “free market of thinking” too with the prospect of being purchased by “consumers”. As however, the consumers are (by definition) uncritical and expected to follow emotions suggested in advertisements, the rational in the libertarian society assumes somehow ironic sense. It is really astonishing why a layman is expected to judge adequately the economic policy of a political party.

Greeks searched for the ἀρχαί of the universe. The social ἀρχαί were assimilated to the natural ones. Now, the relation was reversed as the libertarian relations were transposed on nature. Darwin believed that the principle of the society he lived in was the principle working in nature. Francis Bacon would have called the belief an *idolum specus*.

There was a supply in Darwin; for nature “tried” some species, and a demand; for some were accepted (“adapted”) whereas the “misfits” rejected. According to Hume, the rejection should replace morals. The misfits were to be eliminated (e.g. by eugenics invented by Darwin’s disciple Francis Galton.)

In both libertarian society and the Darwinian nature, some equilibrium of “demand” and “supply” would account for its stability. As however, the stability was believed to be definable in quantitative terms only, the systems (species) existing in it were considerably less stable than the Aristotelian ones. The flow of time was imagined a linear motion, and the history of the universe accounted for the existence of species.

In Aristotle and Dionysius the motion of nature terminates at discrete levels of every only (which is in the perfect accordance with quantum mechanics discoveries). Species were stable and human ideas should be so too. To the contrary, those of evolutionism were evanescent and of fleeting character. No safe footing for human existence was provided. All ideas could be “improved”; “amended”, which is to say bluntly: sold. The system of the organized greed proved to be a system of the organized chaos. Nor even moral values were exempted; for they were believed to “evolve” also. The conclusions of science (e.g. theology) too.

The awareness that the notorious “greed” is able to destroy the natural environment is growing nowadays. Still, the awareness is not capacious enough to define the natural in question. It is not a science. Yet, it is natural for man, in general, to be given a firm footing in the natural environment to live in; the environment of discrete moral values; of peremptory

definitions along with natural species, which make up their closer environment. That the latter might be endangered is but the tip of the iceberg. It is but a token that something really harmful has been done to human nature in general.

When appearing on the earth man met the perfect environment; a perfect system of nature prepared for him/her. The history that preceded it is not relevant; it does not affect in the least the nature of preparation, which was a rational act of the Transcendent Cause. The history that followed neither. It managed to distort the fact only.

Not man (as Rousseau naively thought) was innocent though. It was nature untouched by human greed. In the structure of the society about to come, two elements appeared. There was human rationality respecting all natural rights (those of the handicapped first of all), and the human greed despising the rational and appreciating the emotional only. The fact was spotted distinctly by Horace and Seneca already. The human history is strewn with the carcasses of the “weaker”; of those who fell in “the fight for survival”. The fact was triumphantly heralded as the victory of humanity. Now, the point is that the “fight” was not fair after all. E.g. Hitler appealed to *compassion* for the tragedy of the German nation after Versailles, and prophesied that he would be deemed a benefactor of humanity in the future. The prophesy *has not yet been* fulfilled, but the possibility remains open, as *Umwertung aller Werte* (the evolution) “is” ongoing. That humanity is not at all similar the Ciceronian *humanitas*.

Breaking as the idea of evolution might have appeared, nature failed to comply and proved impervious to the Darwinian argumentations. Nature proved to be less “crude” than expected (and perhaps wished). It proved to have its own definite rights, which, if breached, are bound to turn against who breaches them. No *elán* could explain such a bizarre situation that the most perfect species acted against what was essential for *the totality* of species (the natural environment), and was thwarted in the acting (by nature claiming its rights). The destruction wreaked upon nature must turn against man. The fact must be acknowledged, but is inexplicable in the evolutionist paradigm.

The tragedy of “humanity” (thwarted in commanding nature) was deplorable indeed. It affected in reality, the most commanding “achievements of civilization”. The Kantian Ding an sich behaved scandalously; in the way it had no right to. In fact, no reaction was admissible to Kant’s mind.

In the natural world we live in, acting and reacting follow upon each other. The relation is *in some respect* (taken as a mathematical abstract) symmetric, albeit the moving is *in nature* a cause and the moved is always an effect. The fact that nature behaved “unpredictably” or in the way undesirable to some was made out at the beginning of the 20th century. Natural harmonic oscillators were discovered. They are *to some extent* similar to some artifacts (to those most sophisticated ones). E.g. a string (an artificial harmonic oscillator) is clasped on some artificial supports. The natural ones, though, have no “nods” with zero amplitude of oscillations. There are natural places instead for any of them. The entire system of “places” might be called the natural environment.

In the real world, discrete levels of energy can only exist, and no continuous flux of energy. The continuity Dionysius speaks of is – to use Maritain’s expression – the unity in

diversity. The statement chimes in with what quantum mechanics says about elementary particles. In an atom, only definite levels of energy can exist. The nucleus is able to bind a definite number of electrons only.

The same must hold true in nature in general. There is a “nucleus” of the universe too, and able to bind a definite number of objects and species only – in a definite order.

A nucleus of e.g. plutonium can be bombarded with particles. Some of them can be bound, whereas other ones are going to be eliminated (not “adapted”). The process might unfold in time, but time is not relevant to the structure of the atom.

Some species might have existed on the earth and been eliminated subsequently just because unable to be peremptorily bound to the center of the energy of the universe. The “evolution” (if the name be granted) consisted in differentiating the levels of the cosmic energy. The scope of the process, however, was anticipated from the very outset. The capacity of the prime matter was able to be fulfilled to a certain definite measure only. Terra informis could be informed so only. Some species must have existed for some time so as to prepare a natural place for others. The process had been unfolding until the most perfect (and the best balanced) species appeared on the earth. The world is not perfectible any more since then. Man found the perfect system of the natural environment unable to evolve any longer. Or else, it might only “evolve” in the sense of being possibly damaged and degraded.

In the eyes of the ancient thinkers, man was minor mundus. Not, however, in the sense of being “compassionate” to the totality and mingled with it; nor yet in the sense of – literally – mirroring the universe, but in the sense of the order of the universe being possibly analyzed and known in science. The displacement of the cosmic energy is discontinuous, and the fact can be “mirrored” (if you like) in the human mind to some extent, so that a definite principle of life (wrought by knowledge) is obtained. People differ significantly in how intensely they live and how effectively they act. There are, moreover, different styles of human life, or else the uniformity would make for the degradation of life. The diversity of human existence is striking enough, and nowhere else to be found (in no other species.) Animas act uniformly, as their actions are instinctive (“schematized” in the Kantian formula).

The diversity might be illustrated by a physical analogue. There are some – so to say – “potential wells” of the human life. There is no – to the contrary – a “potential” holism speaks of. The rhythms of human life are describable as included in those potential wells. The relative uniformity of human habits is understandable in the light of the fact, that for a physical object it is difficult to leave a definite potential trough. Some energy must be provided therefor. Most probably, there are no Grenzsituationen in the human life (other than mentioned above) albeit some borders (“Grenzen”) happen to confine human activity indeed. Now, some possibility exists to abandon a definite style of life (a potential trough) if some *amount of energy* is provided *from without*. There is always a possibility to break away with a habit and to ascend towards the fullness of life and being. The process, however, cannot undermine the stability of human nature (as existentialists assume); for should the substratum of motion be changed, the motion would be longer *its motion* (it will be no longer *human* life). To change his/her nature man would have to change into non-being first. That type of “evolution” can hardly be called “créatrice” (as Bergson has it). The ascent cannot advance at

random. If tethered to a certain place (confined existentially), man might despair to be liberated, and some flawed ideas on nature might deepen the frustration. True, there are “places” the human life happens to be confined indeed, but it is never absolutely so. Man is existentially (i.e. naturally) open for the fullness of life and being. Man is *capax Dei* (capacious of God). The process of ascension can barely be called “evolution”; for other names describe it better. Be that as it may, human subjectivity is open to the *Absolute Object* of its desires.

The natural actions of objects can be described – with some approximation – by a mathematical model. There are “classically forbidden” realms in which the wave function assumes the form: e^{-xk_2} and wanes exponentially. On the other hand, *within* the natural borders of a harmonic oscillator, the function assumes the form: e^{ixk_1} (k_1 and k_2 are wave numbers).

Now, growing and decaying (generation and corruption) are relative to diverse substances in the real world. Becoming terminates at discrete levels and perishing is its privation. The wave function with the imaginary number in exponent can describe a system in which an equilibrium exists between the potential and kinetic energy for some time (e.g. the life of an organism).

The history cannot be understood as an *absolutized becoming*. The becoming is relative to diverse objects. The evolution consisted in fulfilling admitted levels of energy. It could have never affected the essence of the objects about to exist.

CHAPTER VIII. COGNITIO CONFUSA

1. The subject matter and the starting point of science

The European science was born in the moment people realized the essential difference between the disciplined inquiry and a free movement of imagination. The former must be called reasoning; the latter *happened to* be identified with it, which, however, it had no right to. There are, according to Thomas, two elements in reasoning: dividing and composing. In other words: the dividing and composing of *imaginations* must be *counterbalanced* by the action of *the intellect* so as to be rational. Without rational composing ideas become barren; without analyzing – fanciful (the Greek φάντασμα means: image or specter). In fact, in the moment composing was bereft of its rational character, and the so called empiricism appeared with the idea of the amassing of simple elements of experience, it deserved fully the name of ideology (the term coined by Napoleon Buonaparte). Its ironic tint was an allusion to that the simple elements (called ideas) had been amassed without being rationally ordered. Ideology is rather believed in than questioned. Albeit both reasoning and dividing are actions of reason,

an analogous action (of the intellect) conditions them both and is responsible for forming concepts.

In empiricism, the “law” of “associating” was meant to replace the laws of nature; for the latter can only be known by the intellect. For all its deserving the name of ideology, empiricism could not dispense of *a* general principle. In fact, some principles must underpin every human understanding no matter how rough their guise. The general truth tacitly assumed there reads: there no essential difference between the human and animal cognition save in the degree of amassing the “ideas”.

Albeit the principle was not reflected on and, consequently, tried to be forced upon rather than proposed, the reflection must be attempted. The empirical cognition if reflected upon, proves the opposite of the principle taken for granted. The animal cognition unfolds towards some schemes which might be called “principles” analogically only. The schemes of acting and cognition are instinctive. Now, as for humans, no such schemes exist, or else, the meaning of the term must be specified. People tend to question *almost* everything (which animals are unable to do). Nietzsche overestimated the fact (and postulated the notorious *Umwertung aller Werte*). He boasted the love of liberty (questioning *might be* its token) allegedly inherited from his Polish ancestry, but the Polish ethos was hardly ever understood aright. What is (or should be) undoubtable is that no ideology can satisfy human mind. The ideology of Enlightenment failed to satisfy those clinging to the principle underpinning the First Polish Commonwealth. But that it be so, *the principle of questioning* must remain *absolutely stable* and unshakable. The principle makes for the very possibility of questioning in both science and morals. The principle is called intellect.

Human actions might be irrational and the ideas wicked (i.e. felonious; not: smart), but the possibility must remain open to verify them and settle the objective value of truth and good.

Everyone accepts some principles, which are, consequently, *subjectively* valid. But they might not to be objectively so after all. Hence, the Kantian difference between maxims and principles. An unreserved toleration of the former would wreak the complete destruction on the social structure. Both in acting and reasoning some principles must be effective. Kant believed that they are *regulative* only. That amounts to that their efficacy cannot be verified. Effectiveness might be reflected upon, which, however, cannot be the case with the principles which were *formal* only, and bereft of the power *to move* the intellect and the will *in nature*. Be that as it may, even Kant would have admitted that sheer accumulation of ideas might lead to unexpected (and possibly disastrous) effects.

The Aristotelian theoretical principle of morals reads: *talis unusquisque est qualis finis videtur ei* (Thomas, *Sententia Ethic.*, lib. 3 l. 13 n. 2). “According as each one is, such does the end seem to him.” (The *Summa Theologiæ* Question 83. Free-will. Does man have free-will?)²⁶⁷ Each one of us accepts some principles and adheres to them more or less

²⁶⁷ The *Summa Theologiæ* of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight.

consequently. They might be clung to obstinately or even desperately, which might be deplorable indeed. Still, without the clinging human life cannot thrive at all and must be deprived of dynamics. No one can tread the path of life without a firm ground under his/her feet. Now, relativism is a swamp.

Some principles if *fancied* only are bound to make people *fanatics*. The *wicked* ideologies of the 20th century bear a testimony to how felonious human *phantasy* can be. The dynamics of evil is striking in them. As a remedy relativism has been invented. It has seemed that Umwertung could deprive the dynamics of evil of its destructiveness just by depriving human acting of dynamics at all. In the past, some crimes were punished by mutilation. In modernity, the *anticipated* crime was punished by softening characters and breaking the moral backbone. A cripple cannot act badly, for the simple fact that he/she cannot act at all. The remedy was radical indeed.

The great champions of the 20th century's ideologies had undoubtedly some virtues. There were who admired some in Stalin. They must have being in him indeed, otherwise the tyrant could not have allured people (his *fans*) with some resemblance of truth and good. The greatest criminals are, in fact, miscarried saints. They manage to beckon and seduce just because *appearing* good and wise. Otherwise they would be simply loathsome. No pure evil can exist; for it would destroy itself first. The dynamics of evil consists in imitating the objective good.²⁶⁸

<http://www.newadvent.org/summa/>

²⁶⁸ Summa Theologiae I, q. 49 a. 3 c. Respondeo dicendum quod ex praedictis patet non esse unum primum principium malorum, sicut est unum primum principium bonorum. Primo quidem, quia primum principium bonorum est per essentiam bonum, ut supra ostensum est. Nihil autem potest esse per suam essentiam malum, ostensum est enim quod omne ens, inquantum est ens, bonum est; et quod malum non est nisi in bono ut in subiecto. Secundo, quia primum bonorum principium est summum et perfectum bonum, quod praehabet in se omnem bonitatem, ut supra ostensum est. Summum autem malum esse non potest, quia, sicut ostensum est, etsi malum semper diminuat bonum, nunquam tamen illud potest totaliter consumere; et sic, semper remanente bono, non potest esse aliquid integre et perfecte malum. Propter quod philosophus dicit, in IV Ethic (c. 11, 1126a 12-13), quod *si malum integrum sit, seipsum destruet*, quia destructo omni bono (quod requiritur ad integritatem mali), subtrahitur etiam ipsum malum, cuius subiectum est bonum. Tertio, quia ratio mali repugnat rationi primi principii. Tum quia omne malum causatur ex bono, ut supra ostensum est. Tum quia malum non potest esse causa nisi per accidens, et sic non potest esse prima causa, quia causa per accidens est posterior ea quae est per se, ut patet in II Physic. Qui autem posuerunt duo prima principia, unum bonum et alterum malum, ex eadem radice in hunc errorem inciderunt, ex qua et aliae extraneae positiones antiquorum ortum habuerunt, quia scilicet non consideraverunt causam universalem totius entis, sed particulares tantum causas particularium effectuum. Propter hoc enim, si aliquid invenerunt esse nocivum alicui rei per virtutem suae naturae, aestimaverunt naturam illius rei esse malam, puta si quis dicat naturam ignis esse malam, quia combussit domum alicuius pauperis. Iudicium autem de bonitate alicuius rei non est accipiendum secundum ordinem ad aliquid particulare; sed secundum seipsum, et secundum ordinem ad totum universum, in quo quaelibet res suum locum ordinatissime tenet, ut ex dictis patet. Similiter etiam, quia invenerunt duorum particularium effectuum contrariorum duas causas particulares contrarias, nesciverunt reducere causas particulares contrarias in causam

There is always a possibility to persuade a *wicked* person as to the irrationality of his/her principles. Otherwise, morals must have consisted in “eliminating” (Hume) or “regulating” (Kant). Both stances differ but in what was supposed to be eliminated. An individual might be so obviously enough. But if a man had been but a tissue of simple elements (Condillac), some of them might be (as it seemed) eliminated too, and a new man “constructed” just like artifacts can. The language used thereto (in science and in morals) would be, a means of manipulation (acknowledged by von Humboldt). Social ingineery would replace personal life”.

Respecting human dignity is only possible if respecting human integrity and acknowledging the principle of integration and personalization, which is the intellect. Now, the elimination (if the word be granted) must be ceded upon a person able to reflect upon the validity of the principles he/she espouses so as eliminate what he/she thinks (aright) inappropriate. There are always principles of actions and, lest they be wicked, they must be reflected upon. The intellect is in that case called the conscience.

Taking realistically into account the fact that some are simply unwilling to do this, Aristotle underscored the value of punitive justice. Some are of a slavish frame of mind and hardly persuadable. *For the time being*, a remedy must be adopted to set the wickedness of their actions before their eyes bluntly. However, the remedy must not be as brutal, as to rescind the possibility of acting in the future *willingly* after accepting sound principles of justice and truth.

There is, according to Thomas, an intellectual principle of human acting indeed; for in the actions themselves the so called syllogismus operativus is adopted. There is a major premise in it (a maxim or a principle) and the minor too. Now, if the major reads (for instance): money is the only good, and the minor: this man can be taken advantage of; the conclusion (the imperative of acting in particular circumstances) could be: let us try to cheat him/her out of his/her money. Obviously, the exemplary principle is (must be so) questionable. It must be, moreover, *actually questioned* by the intellect, i.e. personal conscience.

All principles might have been so (questionable), if Umwertung had been based on a debauched assumption that the Werte could be definable in social terms only. Thus, Nietzsche’s defiance becomes somehow understandable. But in fact, the social structure is founded and dependent upon the natural in man; nay, upon the *most* natural, viz. his/her intellect. The Umwertung must not be interminable; it must stop at objectively valid principles.

That the Werte be what the must be, the personal responsibility must be taken for them; which is to say: the (physical) consequences of one’s actions must be accepted. The

universalem communem. Et ideo usque ad prima principia contrarietatem in causis esse iudicaverunt. Sed cum omnia contraria convenient in uno communi, necesse est in eis, supra causas contrarias proprias, inveniri unam causam communem, sicut supra qualitates contrarias elementorum invenitur virtus corporis caelestis. Et similiter supra omnia quae quocumque modo sunt, invenitur unum primum principium essendi, ut supra ostensum est.

consequences might be *almost* or *totally* unbearable for an individual. No Übermensch ever existed in the human history nor will so able to alleviate the burden. But Someone bore it nonetheless. A Man who bore the burden of human guilt, illness and despair. Albeit not *superior* in respect to our nature, He was, nevertheless, more than just a man.

Wittgenstein believed that science is an activity. But if so, an analogous scheme of acting to that proposed above must, at least in some respect, observe in science. There are principles in it and questionable as far as *the actual state* of science is concerned. As, however, the questioning must be defined so to have scientific value, its status proposed by Heidegger (the way he described or rather absolutized its nature) cannot be accepted. Questioning is only possible if some *definite* questions are asked.

Normally, in human actions, the principles might not be as expressly worded as in the example adduced above. Practically, principles are implied rather than formulated explicite. For the very formulating demands a certain distance towards to the *objects* formulated, and a degree of reflection consequently too. Thus, the problem of whence the reasoning begins remains unsettled. It is, at the same time, the problem of what is (at least subjectively) obvious (taken for granted). The principles, in general, are not worded and are prior to the words they might be expressed in.

As for science itself it is the problem how to “compose” and “divide” ideas so as to obtain a definite and valid outcome (possibly subsumed under its subject matter – γένος ὑποκείμενον). The problem adds up to what is primitive in our cognition.

Some believed that the so called protocol sentences are so. Sill, not even the advocates of the stance managed to defend it eventually, which is rather understandable. There is something in language that excludes such a possibility; there something so to say – evasive – in it. Language cannot mirror the reality; for the reality must have turned out to be its copy rather than the other way round. As, however, we cannot express our thoughts save by a tongue, the problem seems to be very serious what our thoughts might correspond to.

Let us then, take into consideration the (probably) simplest tongue. Music is called the most universal “language”, but notes written on the stave are far from being thus universally knowable. In fact, they are *symbols* rather than signs. They are practically useful, which seems to be definitive of symbols as such. The Greek συμβάλλω means to “add; compose; mingle”. (Let us remember the last characteristics of what is – at least relatively – primitive in our cognition). The mathematical symbols and the musical too are definite just because a definite algorithm is ascribed to them. There is the formal in them (both mathematics and music are – so to say – formal par excellence) but decipherable to those initiated only. As, however, nature cannot be so (decipherable), something which is formal in the way different to the formal in mathematics and music must underpin its cognition.

Before Aristotle, philosophy had been predominately that: symbolized rather than formalized, and some philosophers had pretended to be initiated indeed. Philosophers saw facts *mingled* with phantasies (ἁμδρωζ).²⁶⁹ Thomas, when commenting on Metaphysics, says that philosophers spoke “balbutiendo” (stammering), not knowing precisely the full meaning of the words used (their relation to real objects). The words were rather understandable to

²⁶⁹ Metaph. I, c. 10, 993a 13.

them themselves than to the others. (Similarly, notices taken in a special way are rather understandable to who took them than to a casual reader). But words must be formalized that science be formal too. The way signs used in mathematics were originally so, might have well gone into oblivion, but is essential nonetheless. Addressing the problem in the terms adduced above, we might say that “composing” must be counterbalanced by “dividing”. The first Greek ideas were rather “creative” and “fertile” than systematized. A turning point was, according to Thomas, the moment when Aristotle adopted a new method in philosophy called aporematics. Philosophy must consist in questioning first (ἀπορεῖν). The questioning seems to be indispensable for all “creativity” of those who would rather invent new ideas than analyze them. The language of symbols might be fascinating to those only who relish in the primitive barbarism which preceded the formal language of the Civilization.

It has been said that “our science is childish and naive if compared to reality, but is the most precious we have nonetheless”, which seems undeniable. But on the other hand, comparing requires knowing both extremes first. How is it possible to settle the nature of the relation without knowing the “reality” first? Superficially, the problem seems to be unsolvable, but Aristotle managed to solve it nevertheless. Our cognition might be “naive” or even symbolical as to its expression, but, according to Aristotle, it should be formalized in some respect nonetheless. The respect is the subject matter of a science. The pragmatic value of symbols is unquestionable. Still, they all must be *actually questioned* so to enable scientific progress. At the very outset of inquiry, we must be equipped with a firm principle which is *naturally and not only pragmatically formal*. The systematic questioning is aimed at obtaining it (having realized its validity). Still, the principle is definable as *related* to the subsequent form (the subject matter of a science) only, and in this sense “comparison” is feasible indeed. The principle is the habitual knowledge called cognitio confusa. The state of the intellect is not purely potential (as in a toddler); the intellect is imbued with some primitive notion after grasping species intelligibilis (abstracted from species sensibilis). A definite form of a science can be *compared* to something primitive indeed. Paradoxically, however, the “primitive” in question is more than what is imperfect; it is the opposite in a sense; for it is pregnant with the information possibly used.

Each particular wording of a potentially important truth must be systematically questioned. It might be deemed an apory as far as regraded as a possible conclusion of the demonstrative syllogism. Conclusions are usually taken for granted both in thinking and morals (which is to say: them being just conclusions and not absolute values might go unnoticed or be ignored on purpose). In morals, the fact that they are but conclusions of the demonstrative syllogism called syllogismus operativus (and require a personal responsibility) might be even awkward. Similarly, as a blunt response to the question on the major premise of syllogismus operativus: What is most important to you? The principles can be various. This, however, cannot justify accepting them uncritically.

Every language is organically disproportioned to reality (is “naive”) as long as not regarded as the language of conclusions of demonstrative syllogisms. No ideas can “mirror” the reality, but judgments (the scientific and systematized ones) can correspond to facts. The statement lay at the foundations on the European science, whereas the opposite: ascribing

some “magic” power to words is destructive thereof and typical of Islam. The latter posed always a challenge to the Western Civilization.

The animal cognition (and the “language of chimpanzees” e.g. too) must be only that: symbolic. The primitive data of animal cognition are *mingled* that radically that unable to be analyzed (divided). Animal knows facts and “name” them in a way. But “naming” is pragmatic only and the “language of chimpanzees” can never develop so as to form a morphological system in which facts are not only related but analyzed also. On the other hand, every human language consists in analyzing. Facts are the instances of natural motion. The motion, in turn, is describable with different verbs and in different aspects (e.g. tenses). In science, natural motion is analyzed further. Not that much verbs as rather the “is” of the premises and conclusions of the demonstrative syllogism is important. No wonder that the “is” attracted especially the attention of philosophers.

At first glance, it might seem that the “is” must be simply more general than other “ordinary” verbs. The conviction underpins Hegel’s absolute philosophy. Still, that philosophy appears to be hardly different to logics. There is, according to Thomas, a certain similarity between metaphysics and logics. The “is” makes for it. But the material world is different from that thought of, after all. Hegel saw the problem in his own way, speaking of the *Umweg des Geistes*; *Vermittlung*, and rejecting intuitionism (the direct cognizance of being). The problem is that he accepted the frame of reference of thinking after all, as if it had preceded *objects* which are thought of (and normally believed to exist before thought of). Apparently, no insight into the thought of (being as such), not even a primitive one, is possible without knowing facts first; without substantiating the sense of being in the real world first. The problem of the Hegelianism consisted in that the insight was believed to be meditated by knowing historical facts. Now, according to Aristotle, they are least analyzable of all. Hegel admitted the fact at least in that used them as if they had could be readily manipulated (“the worse for the facts”).

The absolute meaning of TO BE is only understandable in the eschatological perspective. In John Duns Scotus, the perspective is outlined plainly enough. Scotus saw the end, but failed to see the Ways nonetheless. The Way might be called *Umweg*, provided it advanced along the path of nature (in science), and human Nature assumed by God (in religion). The *Umwegs* are variegated according to the variety of personal lives and experience. The uniformization, to the contrary, must lead to depersonalization as in Schopenhauer. There are many Ways to the Absolute Being (the Transcendent One). But generally, the five canonical proposed by Thomas are to be explored first. Be that as it may, the only way towards God leads through the personal experience of the natural world. No short-cuts are available.

Science and morals must respect the fact. The modes of existence must be variegated and the Aristotelian *πολλαχόῦ λέγεται τὸ ὄν* accepted. There are different formalities of being and knowable by different sciences. The common in them (if any) is the personal character and the personal responsibility for the words uttered in them. Neither is a privileged insight into the factuality or reality of the world available.

Not even logics profited from being credited with so much in Hegel. Pure thinking

becomes barren if cut off the natural world. The banal principle of identity predominates. In Kant, the principle was believed to be superior to the non-contradiction principle. Aristotle defends the latter pointing out to the personal character of thinking. The “proof” was called *ἐλεγχος*. The “is” of every statement must be taken responsibility for and contrasted to the “not is” opposed. *Elenchos* is practical in a sense, and in this respect Wittgenstein’s claim that science is activity is true.

The only problem is that the non-contradiction principle cannot be a major premise of any syllogism. The reality (being as such) cannot be named. The non-contradiction principle underpins each valid statement but cannot replace any. In syllogisms, the “is” and the opposed “not is” are contrasted. But there must be something in the experience of the natural world basic for the distinction. Lest metaphysics become logics (or ontology), and its first principle be deemed secondary to the identity principle, the “meta” in it must be “bracketed” and the natural (that of “physics”) evidence of the facts faced. Besides the self-evident principle or reasoning, there must be a self-evident principle of experience too. If reasoning differentiates between the “is” and “not is”, the self-evident in experience must underpin the distinction. The objects thought of are related in syllogisms. As however, nature is far from being as “rational” as Hegel wished, the primitively given must be related *not as different objects* are, but *essentially* so. The primitively given is essentially related; is coupled; entangled. The pairs entangled were called by Aristotle *συγκεχυμένα* (mingled) and the primitive notion of nature in Thomas was called *cognitio confusa*.

The problem of being-given is pivotal in phenomenology. Husserl adopted a sophisticated procedure aimed at obtaining the *primitively* given. Still, the method was flawed for the same reason as that of Hegel; the wrong frame of reference was adopted. It was the frame of reference of words, and words were believed (at least tacitly) to be endowed with some magic power. In consequence, the allegedly given in Husserl was but a copy of words. For the given to be what it must be, it must *condition* statements and words and be *prerequisite* to any guise of language. The statement that a language must be learned from scratch is banal; but the statement that the personal learning is based upon a *pure intellectual principle* called *cognitio confusa* is decidedly not so. No eidetic reduction can replace the Aristotelian reductive analyzed thereof proposed on the first pages of *Physics*. If spell-bounds in the magic circle of words, man is unfit for any innovative thinking. The well-known problem of the hermeneutical circle is emblematic for the modernity. The modern hermeneutics is the philosophy of decay.

The principle of the European science consists in rejecting the allegedly obvious for the sake of discovering the objectively obvious. The turn phenomenology underwent in the late Husserl testifies to that reduction adopted in it must lead in the opposite direction, viz. that of subjectivity, and postmodernism was a consequence. It is, at the same time, the problem of defining the world we live in (in the late Husserl’s philosophy). Is that of ideas (and words) the real one?

Plato’s deep distrust towards the written words has been acknowledged since the Tübingen Scholl analyzed the very written (textual) evidence. Not, however, the discovery is striking. What is really astonishing is that the existence of the Unwritten Teachings of Plato

had gone into oblivion after Schleiermacher and the advocates of “hermeneutics”. The Unwritten Teachings were well known to Thomas. According to Plato, words “cannot defend themselves”. Tampering with information is notorious nowadays. Facts happen to be distorted on purpose, or at least given unprecise rendering. Sometimes it is different to draw a borderline between the culpable and inculpable ignorance there. In brief: facts might be related differently all depending on how honestly related. *Rashōmon* by Akira Kurosawa depicts the situation.

Human language is liable to manipulation to the extent the precise meaning of the statements is refused to be accounted for. The situation, however, is not desperate. The subjectivity must be bracketed and the objective meaning of words regained. Paradoxically however, the reigning is a personal act (an act of a *subject* of rational *nature*). The meaning of the Greek ὑπόστασις is instructive. The term was used by the Greek theologians and as an equivalent of the Latin PERSON. But, at the same time, an ordinary material object might be called ὑπόστασις too. So, it becomes visible, that human person can only exist in nature and the principle of life (the rational soul) is the form of material body.

Person (in the Roman law) is defined by responsibility. No anonymous subjectivity can replace the personal existence. Personal life unfolds along the path of the intellect. The path is variegated according to various modes of being. For the meaning of being is manifold and variegated (πολλαχοῦ λέγεται τὸ ὄν. The paths terminate in the Absolute TO BE *eventually*, but can never originate therefrom. The paths are different and perhaps incomparably more so than usually expected, provided a free initiative is permitted to discover a new way. The genuine way towards a new insight into *a* being and the *plenitude* (of Being) is the personal and innovative one. The world of ideas must be bracketed and a free space left for personal development. Not, however, sheer destruction is meant. Nor must ideas be rejected in bulk. They are tools of thinking and might be used accordingly. Still, tools are but tools. It would be sheer barbarism, nonetheless, to destroy the precious ones; e.g. the writings of brilliant theologians and philosophers, or even to disrespect them. The most commanding achievements of the human intellect are ravishing just because of being wrought by the intellect and personalized (Krapiec). The intellect is the root of freedom (*radix libertatis*).

The absolute validity of the first intellectual principle cannot be doubted. The non-contradiction principle must be accepted (at least implicitly) even by the most ardent advocates of relativism. It is *used*, but refused to be acknowledged to be so. The situation is described in the IV book of *Metaphysics*. The world of ideas might be deemed a safe abode for idealists, but imposes the yoke of the human bondage on the others. The existential impasse Aristotle speaks of in *Metaphysics* is instructive. The human communication is broken. Some are marginalized. At bottom, it is the same continuation Dionysius speaks of; the continuation to the natural environment of man. To the contrary, any word of ideas must be marked by the atrophy of life.

As to the origin of words in general, its temporal aspect cannot be denied. Children learn a language. As, however, they may do so more or less effectively, the problem consists in defining the situation. Do they learn it by observing the naked facts, and the language is

learnt as far as their own one; or else: are they trained rather than thought and the training assumes the form of hominization by means of the language? What is *behind* the words then? Is it a dark spot impervious to the human mind just because the mind was defined in terms of interiorizing the language?

For all its importance, language cannot define human rationality. Language is what it must be to the extent it is personalized and particular utterances taken responsibility for.

Thus, the genesis of any language must be analyzed in a-temporal terms too. It is the problem of being-originally-given. No words can present the immediately given, for it is a vicious circle to try and define in words what conditions the words themselves. The only way possible is the reductive analysis Aristotle presents in the first chapter of *Physics*.

Astonishingly enough, a certain continuation of the Platonian thinking appears here. Plato analyzed the origin of words too. Still, the origin can hardly be called temporal; for the eschatological perspective (adopted by him) is a-temporal indeed. Plato tried to solve the problem of objectively valid cognition by resorting to the in-born knowledge people carried with themselves from the world they had existed before. It is difficult to say whether Plato himself understood it literally, or it was rather a figurative mode of speaking. Be that as it may, Aristotle took innatism just so: figuratively. No special importance must be attached to the words themselves, provided confusion of meaning is avoided. David Hume pointed out to another sense of innatism: notions might be called so as long as acquired naturally and “born” as if matured in who grows up. In “*Meno*”, Plato described a situation in which seemingly innate cognition was unearthed, and the cognition is “innate” indeed at least in the sense that when discussing (communicating) with the others we cannot see the reality with his/her eyes, but only *effects of the previous* cognition.

We see facts, motion, changes in the natural world. Still, before we name them this or that way, we must understand them at least to some extent. The naked being-given of the natural facts is described in the first chapter of *Physics*.

2. *Cognitio confusa*

The problem how to understand the primitive cognition; the source one; viz. that of the nature of the perceived facts, has already been touched upon throughout the present book. The problem is of pivotal importance for science in general; for the starting point determines (as it seems) the scope of discovery possibly obtainable in it. The safer a footing the higher objective can be reached.

Science must consist in differentiating. Nevertheless and paradoxically so, it is essential that the starting point be just the opposite: the primitive data must be undifferentiated. Not, however, to the effect of being disordered. Apart from being potentially ordainable, the data must at least hint a possible path of discovery.

Being so (συγκεχυμένα as Aristotle has it), the original objects appear to be relatives coupled (correlated) essentially. The nature of facts consists in being related in such a way.

The relatives are naturally entangled to the effect of them being originally undistinguished. The scientific (or if you like: adequate) cognition consists in differentiating and separating objects in a *definite order*.

To the matter at hand: the primitive data of cognition include the moving (movens) and the moved (motum): the relatives of every “atomic” fact. The starting point of science is called by Thomas *cognitio confusa*. The facts are “atomic” if taken in their intellectual purport. On the other hand, some amount of wanton play of imagination *actually* might impede the intellectual in man unfold freely (might handicap it).

Thus, we face an awkward situation of expressing in words what conditions wording as such. The situation is extremely difficult, but not desperate if the Aristotelian analyzes are followed. Perhaps, Aristotle’s language is just more philosophical than any other one. Even the Latin idiom might be misleading and it affected English so. CONFUSED implies normally a privation. In the Latin Psalms “non confundar” means: “I shall not be ashamed”. The misunderstanding might issue from the fact the CONFUSED is a *literally* translation of the Greek *συνκεχυμένα*, and should be isolated from ordinary collocations so as to be taken – so to say – analytically. The root of the participle is the verb *συνχεῖν* (confundere; mingle); (*συν* = con; *χεῖν* = fundo). The term in Aristotle does not denote a privation, but a virtuality and correlation only. In other words: it is applied to the habitual cognition, the middle one between the pure potentiality of the intellect we come to the world with and the perfect cognition obtained in science. To express it in another way yet: *cognitio confusa* is the *effect* of abstracting the intellectual (species intelligiblis) from the sense data (species sensibilis). This *primitive* abstraction is natural to man and precedes every disciplined inquiry (the abstraction *sensu stricto*).

The connotation of privation (the evil of the intellect) would be inevitable if the distinction between the natural (which is to say: material) and cognitive processes was blurred. In material objects, a form is (according to Aristotle) acquired by a substratum originally deprived of it. The evil of the intellect (being deprived of truth) might actually precede its good (science) but need not so. It might bear a certain resemblance to the otherwise *neutral* starting point of science. That handicapped starting point was called by Aristotle the “blurred” (*ἀμδρῶς*) cognition. It is *incidental* to our cognition (for we need not advance by way of trial and error), whereas *cognitio confusa* is *essential* to it. We depart from the habitual state of mind (pregnant with the information included in species intelligiblis) so as to distinguish the data in a science.

Aristotle describes *cognitio confusa* minutely, but was an heir to the Greek tradition there nonetheless. Anaxagoras spoke of the intellect which separates the primitively mingled elements. As however, the intellect is taken in singular, the aforementioned distinction between the elements of cognition and those material ones was lost sight of. Not in Plato so. Aristotle’s master speaks of the “synoptic” cognition appreciating it as a privileged approach of philosophers. No privation was implied. Plato reacted to Anaxagoras’s stance here (as testified in *Phaedo*), and the reaction was excessive. According to Thomas, *intellectus est res naturae* after all. Although not reducible to matter, it shares the common characteristics of all beings which proceed from potentiality to actuality. Be that as it may, it was the problem of

the original (and potential) in man.

Plain distinctions have some didactic value, but may be deceptive in seeing the essential in philosophy. Plato's innatism happened to be contrasted to Aristotle's empiricism. Now, the point is that they both aimed at describing the source cognition. Being innate might be just an awkward way of expressing the natural in man.

At any rate, a certain ignorance is admitted (or should be so) if embarking upon a completely new way of discovery. Not many are as bold as Socrates to acknowledge the fact. Paradoxically, if Aristotle is right in assuming that the intellect is most natural in man and definitive of him/her consequently too (Nicomachean Ethics), the most natural is, at the same time, the most laborious. The Greek Heracles was an icon of this attitude to life. It comes as no surprise, then, that the source cognition is described by Aristotle in *The Treaty on Nature*. Albeit being immaterial and not originating from any privation, the intellect comes to actuality departing from potentiality, *analogically* as any other natural beings do. The problem of the relation of those two spheres (nature and science) would baffle man as both might (as it seems) be given the status of the formal contrasted against the other (the material). The privation was not always seen on the part of nature (and compared to the human formal "consciousness"). The regard was suspected to be vitiated (and it was indeed), and the reaction was a consequence. According to Rousseau the thinking man is a debouched animal. The thinking man impaired the harmony of the nature. Pedro Calderón de la Barca) says: *el delito mayor del hombre es haber nacido* (man's worst crime was to be born). Now, the harmony had been affected indeed, but rationalism (not thinking as such) was a culprit. In fact, the harmony can only be disturbed by wanton play of imagination, which is but *incidental* to the genuine thinking. Aristotle sees the problem in due proportions in the first Chapter of *Physics*.

Ἐπειδὴ τὸ εἰδέναι καὶ τὸ ἐπίστασθαι συμβαίνει περὶ πά-
σας τὰς μεθόδους, ὧν εἰσὶν ἀρχαὶ ἢ αἷτια ἢ στοιχεῖα, ἐκ
τοῦ ταῦτα γνωρίζειν (τότε γὰρ οἰόμεθα γινώσκειν ἕκαστον,
ὅταν τὰ αἷτια γνωρίσωμεν τὰ πρῶτα καὶ τὰς ἀρχὰς τὰς
πρώτας καὶ μέχρι τῶν στοιχείων), δῆλον ὅτι καὶ τῆς περὶ
φύσεως ἐπιστήμης πειρατέον διορίσασθαι πρῶτον τὰ περὶ
τὰς ἀρχάς. πέφυκε δέ᾽ ἐκ τῶν γνωριμωτέρων ἡμῖν ἡ ὁδὸς
καὶ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει καὶ γνωριμώ-
τερα· οὐ γὰρ ταῦτα ἡμῖν τε γνώριμα καὶ ἀπλῶς, διόπερ
ἀνάγκη τὸν τρόπον τοῦτον προάγειν ἐκ τῶν ἀσαφεστέρων μὲν
τῇ φύσει ἡμῖν δέ᾽ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει
καὶ γνωριμώτερα. ἔστι δ' ἡμῖν τὸ πρῶτον δῆλα καὶ σαφὴ τὰ
συγκεχυμένα μᾶλλον· ὕστερον δ' ἐκ τούτων γίγνεται γνώριμα
τὰ στοιχεῖα καὶ αἱ ἀρχαὶ διαιροῦσι ταῦτα. διὸ ἐκ τῶν κα-
θόλου ἐπὶ τὰ καθ' ἕκαστα δεῖ προιέναι· τὸ γὰρ ὅλον κατὰ
τὴν αἴσθησιν γνωριμώτερον, τὸ δέ᾽ καθόλου ὅλον τί ἐστι·
πολλὰ γὰρ περιλαμβάνει ὥς μέρη τὸ καθόλου. πέπονθε δέ᾽
ταῦτο τοῦτο τρόπον τινὰ καὶ τὰ ὀνόματα πρὸς τὸν λόγον·
ὅλον γάρ τι καὶ ἀδιορίστως σημαίνει, οἶον ὁ κύκλος, ὁ δ' ὅ-
ρισμός αὐτοῦ διαιρεῖ εἰς τὰ καθ' ἕκαστα. καὶ τὰ παιδία τὸ

μὲν πρῶτον προσαγορεύει πάντας τοὺς ἄνδρας πατέρας καὶ
μητέρας τὰς γυναῖκας, ὕστερον δέ᾽ διορίζει τούτων ἑκάτερον.

When the objects of an inquiry, in any department, have principles, conditions, or elements, it is through acquaintance with these that knowledge, that is to say scientific knowledge, is attained. For we do not think that we know a thing until we are acquainted with its primary conditions or first principles, and have carried our analysis as far as its simplest elements. Plainly therefore in the science of Nature, as in other branches of study, our first task will be to try to determine what relates to its principles.

The natural way of doing this is to start from the things which are more knowable and obvious to us and proceed towards those which are clearer and more knowable by nature; for the same things are not ‘knowable relatively to us’ and ‘knowable’ without qualification. So in the present inquiry we must follow this method and advance from what is more obscure by nature, but clearer to us, towards what is more clear and more knowable by nature.

Now what is to us plain and obvious at first is rather confused masses, the elements and principles of which become known to us later by analysis. Thus we must advance from generalities to particulars; for it is a whole that is best known to sense-perception, and a generality is a kind of whole, comprehending many things within it, like parts. Much the same thing happens in the relation of the name to the formula. A name, e.g. ‘round’, means vaguely a sort of whole: its definition analyses this into its particular senses. Similarly a child begins by calling all men ‘father’, and all women ‘mother’, but later on distinguishes each of them.²⁷⁰

When commenting on the text, Thomas points out the equivocation included in the term of PARTICULARS. In *Metaphysics* and *Posterior Analytics*, it are concrete material beings that are known first. In *Physics*, to the contrary, species (words; universals) are meant. The *Treaty in Nature* passes by (the obvious) fact that our cognition originates from senses. Only the effect of the sense cognition was taken into account (in pretty much the same way as in Plato, for whom the fact might be not that much apparent as rather irrelevant). We depart from the cognition of the-yet-undistinguished objects. Next, we distinguish (“analyze”) (διαίρεσις) and proportionally to the method assumed in a science. *Diairesis* plays the pivotal role in Plato. Albeit critical of its unreserved validity, Aristotle assumes a certain interpretation thereof.

The main problem was to avoid mathematicism here. For διαίρεσις (if taken literally) might suggest “division” similar to that of the set theory and John Steward Mill’s *Cannons*. Defining things cannot be deemed separating some “chunks” of reality. *Diairesis* might be supposed to be that of continuum, whereas its specific philosophical character consists in matching the formal and the material (not: parts) in definitions. A line can dissect a plane, but the human mind has no matter to operate on in such a way.

Still, Plato’s stance was not as antinaturalistic as the advocates of plain distinctions

²⁷⁰ Aristotle, *Physics*, translated by R.P. Hardie and R.K. Gaye
<https://ebooks.adelaide.edu.au/a/aristotle/physics/>

could relish. Ideas are, according to Plato, φύσις. The only problem (as Thomas has it) is how to understand τῇ φύσει in the text quoted above (and could imply the ideas are thoughts). The dative used might suggest that “nature knows”, which is at odds with what Aristotle intended. Ideas (if the very term be granted) are in mind (ἡμῖν) and *the natural order* of cognition is described here. (The same is the case with the Latin ablative put in this place).

The analogous way of thinking was adopted (according to Thomas) in the second book of *Metaphysics*. Thomas did not know that the book was unauthentic. Pasicles of Rhodé was a Platonist, but (as Thomas points out) Aristotle deemed himself a Platonist too. The author of the second book of *Metaphysics* was not Aristotle but was *an* Aristotle. The unity of the Greek philosophy appears salient once more in the following words:

Ἡ περὶ τῆς ἀληθείας θεωρία τῇ μὲν χαλεπὴ τῇ δὲ
 ῥαδία. σημεῖον δέ᾽ τὸ μήτ' ἀξίως μηδένα δύνασθαι θιγεῖν
 αὐτῆς μήτε πάντας ἀποτυγχάνειν, ἀλλ' ἕκαστον λέγειν τι
 περὶ τῆς φύσεως, καὶ καθ' ἓνα μὲν ἢ μηθεν ἢ μικρὸν ἐπιβάλ-
 λειν αὐτῇ, ἐκ πάντων δ' συναθροιζομένων γίγνεσθαι τι μέγε-
 θος· ὥστ' εἴπερ ἔοικεν ἔχειν καθάπερ τυγχάνομεν παροιμια-
 ζόμενοι, τίς ἂν θύρας ἀμάρτοι; ταύτῃ μὲν ἂν εἴη ῥαδία,
 τὸ δ' ὅλον τι ἔχειν καὶ μέρος μὴ δύνασθαι δηλοῖ τὸ χαλε-
 πὸν αὐτῆς. ἴσως δέ᾽ καὶ τῆς χαλεπότητος οὔσης κατὰ δύο
 τρόπους, οὐκ ἐν τοῖς πράγμασιν ἀλλ' ἐν ἡμῖν τὸ αἷτιον
 αὐτῆς· ὥσπερ γὰρ τὰ τῶν νυκτερίδων ὄμματα πρὸς τὸ
 φέγγος ἔχει τὸ μεθ' ἡμέραν, οὕτω καὶ τῆς ἡμετέρας ψυχῆς
 ὁ νοῦς πρὸς τὰ τῇ φύσει φανερώτατα πάντων. οὐ μόνον δ'
 χάριν ἔχειν δίκαιον τούτοις ὧν ἂν τις κοινώσαιτο ταῖς δό-
 ξαις, ἀλλὰ καὶ τοῖς ἐπιπολαιότερον ἀποφηνάμενοις· καὶ
 γὰρ οὗτοι συνεβάλοντό τι· τὴν γὰρ ἔξιν προήσκησαν ἡμῶν·
 εἰ μὲν γὰρ Τιμόθεος μὴ ἐγένετο, πολλὴν ἂν μελοποιίαν οὐκ
 εἴχομεν· εἰ δέ᾽ μὴ Φρῶνις, Τιμόθεος οὐκ ἂν ἐγένετο. τὸν
 αὐτὸν δέ᾽ τρόπον καὶ ἐπὶ τῶν περὶ τῆς ἀληθείας ἀποφηνάμενων·
 παρὰ μὲν γὰρ ἐνίων παρειλήφαμέν τινας δόξας, οἱ δέ᾽ τοῦ
 γενέσθαι τούτους αἷτιοι γεγονάσιν.

The investigation of the truth is in one way hard, in another easy. An indication of this is found in the fact that no one is able to attain the truth adequately, while, on the other hand, we do not collectively fail, but every one says something true about the nature of things, and while individually we contribute little or nothing to the truth, by the union of all a considerable amount is amassed. Therefore, since the truth seems to be like the proverbial door, which no one can fail to hit, in this respect it must be easy, but the fact that we can have a whole truth and not the particular part we aim at shows the difficulty of it. Perhaps, too, as difficulties are of two kinds, the cause of the present difficulty is not in the facts but in us. For as the eyes of bats are to the blaze of day, so is the reason in our soul to the things which are by nature most evident of all.

It is just that we should be grateful, not only to those with whose views we may agree, but also to those who have expressed more superficial views; for these also contributed something, by

developing before us the powers of thought. It is true that if there had been no Timotheus we should have been without much of our lyric poetry; but if there had been no Phrynus there would have been no Timotheus. The same holds good of those who have expressed views about the truth; for from some thinkers we have inherited certain opinions, while the others have been responsible for the appearance of the former.

It is right also that philosophy should be called knowledge of the truth. For the end of theoretical knowledge is truth, while that of practical knowledge is action (for even if they consider how things are, practical men do not study the eternal, but what is relative and in the present). Now we do not know a truth without its cause; and a thing has a quality in a higher degree than other things if in virtue of it the similar quality belongs to the other things as well (e.g. fire is the hottest of things; for it is the cause of the heat of all other things); so that that causes derivative truths to be true is most true. Hence the principles of eternal things must be always most true (for they are not merely sometimes true, nor is there any cause of their being, but they themselves are the cause of the being of other things), so that as each thing is in respect of being, so is it in respect of truth.²⁷¹

The gratitude the text speaks of is more than just a moral virtue. It is openness to obtaining universally valid knowledge (which is to say: acceptable to anybody). In this context another didactic Thomasian formula must be read: *intellectus est universalium*. The (eventually) insolvable problem of universals in the Middle Ages resulted from separating the formula from its natural context, which is that of generalities (τὸ καθόλου) quoted above. The full (extended) Thomasian principle would, accordingly, run as follows: *intellectus est eorum quae plura in se comprehendunt – the intellect grasps some entireties first*.

It is natural to our intellect to grasp coupled data first and distinguish them subsequently. In *De Trinitate*, 1, 3, c, Thomas juxtaposes two kinds of “wholes”: totum universale and totum integrale.²⁷² Apparently, definitions are integrated rather than generalized.

In defining, the formal (specific difference) related to the material (the genus) makes for the grade of the formality of being,²⁷³ which cannot just result from the position in some neutral (or a priori given) frame of reference.

²⁷¹ Aristotle, *Metaphysics* II, Ch. 1, translated by W. D. Ross.

<http://classics.mit.edu/Aristotle/metaphysics.html>

²⁷² ... primo cognitum homini potest accipi dupliciter: aut secundum ordinem diversarum potentiarum; aut secundum ordinem obiectorum in ipsa potentia ... inter haec illa sunt priora quae intellectui abstrahenti primo occurrunt. Haec autem sunt quae plura comprehendunt vel per modum totius universalis, vel per modum totius integralis ... ut definitum partibus definitionis.

²⁷³ Super *De Trinitate*, pars 3 q. 5 a. 3 c. 1. Et hae quidem duae operationes duobus, quae sunt in rebus, respondent. Prima quidem operatio respicit ipsam naturam rei, secundum quam res intellecta aliquem gradum in entibus obtinet, sive sit res completa, ut totum aliquod, sive res incompleta, ut pars vel accidens. Secunda vero operatio respicit ipsum esse rei, quod quidem resultat ex congregatione

In this context, the Platonian problem of whether being is a genus (possibly divisible into species) must be seen. Naturally, both specific difference and genus are beings (of the intellect) or at least must correspond to beings. But what is divisive of “reality” or “being” cannot specify it in this manner. A line can be contrasted against the background and both might be regarded simply formal in mathematics. But in the real world, things are only different because of *the mode* of being. A genus includes *potentially* some species, and the latter are different because less or more formal. Aristotle rejects the claim advocated in Plato’s “Parmenides” and “Sophist”.

A serious difficulty was posed to those who tried and interpret the Thomasian statement that being is the first known by the human intellect. For it seemed that an existential “background” was meant and similar to that of Plato’s Sophist. The problem is, then, to decide whether Thomas abandoned Aristotelianism here and gave way to Platonism.

The problem adds up, however, to what is most formal in being (and not only in definitions). According to Thomas, it is *ipsum esse* (the act of existence). Consequently, the problem of being as *primo cognitum* is not restricted to forming definitions. Metaphysics reflects upon the primitive datum, but its method is not that of defining; its method is called separation; judgment. Apart from forming definitions, a question might always be asked as for what they correspond to in the real world. Metaphysics sets down the relation of concepts to the real world. Two specimens of the one species are equally formal as to their definition only. But they are ontologically unequal, at least in the sense of being radically diverse. The problem is nagging as to the beings distinguished by their (otherwise postulated) dignity. Human persons are *tota integralia*; they are irreducible to any “generalities”; they are just formally different; which to say: they are distinguished by diverse acts of existence. Thomas says more than Aristotle no doubt, but his statements chime in with the genuine Aristotelianism.

Albeit having being as such (*ens inquantum est ens*) as its subject, Thomas’ Metaphysics does not regard it as a genus *tout court*. *Ens inquantum est ens* is a methodological genus, and constituted not by abstracting a supposedly common substratum of existence, but by judging everything as to the formality of being. Abstracting must be proper to particular sciences, but the first science must set all concepts in the definite framework of existential formality of beings. The Fourth Way of Thomas (the only one in which the term of being appears) must be read having this in mind.

Thus, conceptualization must occupy the secondary place in metaphysics – contrary to particular sciences in which formalization is that of determining specific differences. Metaphysics is formal because of judging. If, according to Aristotle, the token of the wisdom is to distinguish (*sapientis est distinguere*), metaphysics (the ultimate human wisdom) distinguishes things most radically. In particular, it acknowledges the uniqueness of the most perfect beings (human persons) to be found in the world.

principiorum rei in compositis vel ipsam simplicem naturam rei concomitatur, ut in substantiis simplicibus ...

The exceptional method adopted in metaphysics is at work in *Quaestiones Disputatae* by Thomas. In fact, Thomas perfected the Aristotelian aporematics there (Krapiec). As Chenu points out, Thomas scarcely ever rejects an argument in bulk. If conceptualization had played pivotal role in metaphysics, a logical mistake (or incoherence in forming definitions) would have disqualified an error at once. Still, not even blatant logical errors are incriminated by Thomas as such and denounced as not worth thinking over. A seed of the primitive cognition of truth is to be found in no matter how perplexed reasoning. Consequently, metaphysics encompasses (at least potentially) all realms of the human intellectual activity (no matter how feeble). To be precise: it are rather skilled metaphysicians that are able to extricate truth from the statements that might otherwise appear helplessly strayed from truth. Thomas is the second to none here. Commenting on Aristotle's *Metaphysics*, Thomas observes that, contrary to his predecessors, the author had gathered in the Third (introductory) Book of what we call now "The Eternal Book of Philosophy" all apories before advancing his own path of discovery. So much indebted to those how preceded, Aristotle formed not just another system, but a summary of what had appeared before. Similarly, Thomism is considerably less a closed system than any other one. It is universal in the best desirable manner.

The Aristotelian turn was not that of accepting realism vouching once and for ever for the validity of statements about to utter. No privileged insight into "reality" was claimed. To the contrary: Aristotle acknowledged a conditional validity of the statements of who had philosophized before him (or at least their honesty in the disinterested pursuit of truth). In all of them, a primitive cognition of facts called *cognitio confusa* (συγκεχυμένα) existed and was tried (to better or lesser effect) to be conceptualized. *Theoretically*, no ideas must be rejected a priori, no matter how debauched they appear at first glance. *Practically* however, (we are neither an Aristotle nor a Thomas) some should be rejected just for the sake of the economy of thinking. Anyhow, a common language might be sought even with those who advocate the most paradoxical ideas. The only problem (the problem of our time) is that testimonies of personal (independent) thinking become less and less visible; ideas more and more hackneyed and repeated ad nauseam. It might be called a globalization of thinking.

There is but one apriorism to be found in Aristotle. Each individual is credited with the ability of knowing some amount of the genuine truth. The universal validity (certainty) of scientific statements results from this claim. Statements are certain because in a position to stand the trial of any objections.

Significantly enough, modern reformers of science aimed at questioning as such, bearing, and unwittingly so, a testimony to that they were unable in answering particular questions. Questioning of what *appears to be* principle is always desirable. Questioning of every principle as such must lead to some exclusivism in thinking; to the claim that "no everyone is capable of some privileged insight". The growing specialization and fragmentation of science must follow. No possibility looms to check the validity of the statements of "specialists" by those who are deemed "profanes". Ultimately, it must lead in a senile decay of science.

3. The hidden variable. *Forma totius. Species*

Carrying out the reasoning leading to the First Cause of motion requires (at least indirectly) determining the relation of the human mind to nature. In *Summa Theologiae*, I, q. 29, a. 1 ad 4; Thomas traces back the origin of the term *NATURA*. First and according to its etymology, (*φύειν* means „to beget“) the term was adopted to living things. Next and more generally, it denoted the inner principle of motion. The world taken as a whole had (according to Aristotle) such a principle in it, and on this account it was (metaphorically) likened by Aristotle to one living organism. Both the active and passive principle can be distinguished therein, and both deserve, consequently, the name of nature. Now, the problem is whether (and possibly to which extent) the human intellect is “active” or “passive”. In “The Treaty on the Soul” Aristotle, identifies principles similar to those normally to be found in nature. Man’s place in the universe is, nevertheless, unique as the principles are analogical only to those material ones. His/her place in the world is rather a *direction* towards the Transcendent than a *rest* in the natural world.

It cannot thus come as a surprise that theologians focused on the Object of this intention. The term of nature was tried to be given a more general meaning yet. According to Boethius, nature is *natura est unumquodque informans specifica differentia*. “Nature is the specific difference giving its form to each thing”.²⁷⁴

Although there is no reasoning in God and no defining consequently too, intellect as such is a nature too. Thomas says: *Intellectus est res naturae*. The superior in man is a likeness of its Ultimate End. As, however, material things are, according to Dionysius, both obstacles and proxies on the way to the Ultimate (they are, “problems”: *προβάλλονται*), the likeness in question regards the intellectual tending towards God; not to material things as such. People can adhere to God by a simple act of the intellect, which is, however, extremely rare. Normally, the way must assume the philosophical guise (of the Way) and both defining and reasoning prove to be indispensable.

Be that as it may, it is not a sheer mode de parler to affirm that “something is borne in mind” or “is conceived in it”. Theology regards the purely intellectual origin (begetting). Philosophy, taking into account that instead of clinging to God by a direct act of the intellect, man is almost always doomed to laborious reasoning, must admit that it are things (so

²⁷⁴ *Summa Theologiae* I, q. 29 a. 1 ad 4. Et sic accipitur hic natura. Unde Boetius in eodem libro dicit quod natura est unumquodque informans specifica differentia, specifica enim differentia est quae complet definitionem, et sumitur a propria forma rei. Et ideo convenientius fuit quod in definitione personae, quae est singulare alicuius generis determinati, uteretur nomine naturae, quam essentiae, quae sumitur ab esse, quod est communissimum.

The Summa Theologiae of St. Thomas Aquinas Second and Revised Edition, 1920 literally translated by Fathers of the English Dominican Province).

<http://www.newadvent.org/summa/1032.htm>

distrusted by Dionysius) that beget the understanding in the intellect. According to Thomas, *res ... sui notitiam in anima gignit*²⁷⁵. The notion is a feeble echo of the Exemplar, but normally we must put up with it first. The way we define things is consequent upon how they affect our mind.

Things do not affect it materially though; for according to Aristotle, the intellect is separated therefrom. Figuratively only, we can picture the intellect being on “same axis” with the agent acting upon its effect (the line joining a cause and the effect would be “protracted” towards the intellect). Having this in mind, we might consider the agent from the epistemological point of view, i.e. not that much as a thing tout court, but rather as a thing *known* to us. For things are naturally known to us, via effects they normally spur.

Nevertheless, the principle of being must be distinguished from the principle of cognition. Thomas distinguishes *forma partis* and *forma totius*. The latter acts intentionally on our intellect; the former acts physically: either directly (upon the proper matter), or indirectly (via some potency of acting – upon an external object). The individualized matter is unknown to the human intellect. To the contrary, the common matter (a material object acted upon) is the natural proxy of cognition. This regards both the part of a species (the proper matter), and the part of a factual motion (the external object acted upon). The Boethian definition regards definitions, but, as (according to Aristotle) the definitions are shortenings of reasonings (in which different species happen to be considered) the term of the common matter might be extended to the natural effects. *Forma partis*, on the other hand, is known indirectly only and due to a special method proper not to the philosophy of nature, but to metaphysics. In it, defining plays a secondary role, and judgment is essential for knowing the ultimate formality of beings.

Judging itself is, contemporarily, *judged* pejoratively. Indeed, metaphysics is the most difficult intellectual endeavor and exposed to as many perils as no other science. The natural way of cognition is that of defining and reasoning, and not even metaphysics can dispose of it. It must operate on concepts after all; for something *definite* must be judged.

One might fall prey of an illusion that quantitative description of motion suffices for knowing nature. Still, science itself has testified to that something has been lacking in that description; that something has been dropped; which might be called the hidden variable. The Aristotelian *forma totius* is in fact nothing else than it.

The fact that motion is characterized by continuity might be overestimated. It was Averroes who tried to improve the Aristotelian stance. Apart from *forma fluens* (of the Latin translations), which coincided in general with Aristotle’s definition of motion, there was the notion of *fluxus formae* yet. Briefly: the Aristotelian motion was specified according to various principles it originated from, and the continuity existed *within each* of them only. The principles are analogically, not numerally the same. To the contrary: Averroes tried to find a common denominator of all kinds of motion. Philosophically, it is to be called the univocity

²⁷⁵ De veritate, q. 1 a. 10 ad s.c. 3. ex hoc enim quod res formam habet, artem divini intellectus imitatur, et sui notitiam in anima gignit.

of being. Unification of concepts is always desirable. Still, it cannot be done at all expense. The continuity Averroes speaks of has, in fact, no counterpart in nature. It is a mathematical abstract.

The role of definitions is not *quaestio iuris*. It is *quaestio facti*. Even rejecting the value of real definitions, some definitions are implied (used). Language cannot be formalized in the way neo-positivist stipulated. The concepts are conceived in our mind indeed. In Thomas, their origin is accounted for. The way for innovative thinking is paved. Forming concepts is a natural way of human cognition (*ἀνάγκη τὸν τρόπον τοῦτον προάγειν ἐκ τῶν ἀσαφεστέρων μὲν τῇ φύσει ἡμῶν δὲ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει καὶ γνωριμώτερα*) (The natural way of [determining what relates to the principles] is to start from the things which are more knowable and obvious to us and proceed towards those which are clearer and more knowable by nature – op. cit.).

One might be well unaware of grasping *quidditas*, *forma totius* hidden under appearances in pretty much the same way as we are normally unaware of having eyes when seeing things. *Forma totius* is spontaneously abstracted by the human intellect from the sense data (*species sensibilis*).

The latter are known by animals also. But the mode of existence of humans in the natural world differs not in *how many* facts are known, but *how* they are known. According to Thomas, the human intellect is able to know all bodies, which is to say: it transcends them all. The pilot wave De Broglie and Bohm speak of might be identified with *species sensibilis*. The hidden variable, on the other hand, was the datum of the intellect. In Einstein, it was meant to “rescue” the determinist image of the world. Unhappily though, “determinist” was equaled to “scientific”.

Determinism postulates knowing causes before knowing effects. Experimenting proceeds in that way. But before embarking on experimenting a certain theorem must be present in mind. Experimenting itself is unable of deliver the adequate image of the world (if the term of image be granted).

Normally, causes are known together (confuse) with the effects they naturally trigger. In other words: it is only due to the effects that causes are known. Aristotle advocated the “inverse” determinism; the conditional (teleological) when impugning the absolute one in Physics.

The hidden variable (*forma totius*) is first known as undistinguished (*συγκεχυμένα*) from its effect. To be precise: there are as many such like variables as many are natures specifically different. Things (*species*) are known according to how they act upon some objects able to sustain their action. Albeit different, they are analogically the same. The proportion of causes to the effects is firstly known. No matter whether a language be scientific or the everyday one, *species* (discrete levels of being) must be known as the natural basis for any subsequent cognition. This applies both to mathematics and metaphysics. The formalism of mathematics has but a conditional validity.

The conceptual cognition was tried to be disavowed by scientism. It is interesting how Edmund Husserl reacted for it. Apart from *exacte Wissenschaften* (the only ones acknowledged by scientists), a *strenge Wissenschaft* must exist too. The latter was meant to grasp *eidōs*

(species; forms). There is, no doubt, a certain similarity to the Thomasian *forma totius* in Husserl's *eidos*. The only problem is that, in Husserl, *eidos* are in fact secondary to, and dependent upon, words (e.g. those taken from a dictionary). Thomas explains the *origin* of words (how they are begot in our mind); how they actually exist in it. Husserl was not able to do this. Neither, for that matter, he pretended to. The imaginary variations cannot replace the reductive analysis Aristotle provides in *Physics*. They are, in fact, scarcely different from operationism adopted by scientism. An experimenter acts with an operator on a material object. A phenomenologist faces an imaginary object instead. The information obtained might be useful, but is never completely new.

The Husserlian program of the "return to things" was in fact unfulfilled. Nay, in the latest writing by Husserl, it seems to have been actually abandoned. The human *Lebenswelt* is far from being the natural environment. The mode of human existence in nature failed to be clarified.

The fact is rather understandable. The place man occupies in nature is quaint indeed; for humans are never fully satisfied with the material world they live in. Idealism simply overestimates the fact. Its idiosyncrasy towards the crude nature is salient. The problem is that the stance is emotional (as Fichte admits) and nothing constructive was proposed instead.

Metaphysics at least tries to determine the place of humans in the natural world. It points towards some border. And then ultimate destiny is to be sought beyond it. The contemplation achievable in metaphysics is, according to Aristotle, a feeble resonance of the fullness he (personally) was probably unacquainted with. Aristotle might have been unaware that it was but a foretaste.

Be that as it may, the general path of the fulfilment leads towards what is more and more distinguished. Metaphysics is just more radical in searching what is beyond (transcendent). Departing from some primitive and undistinguished data, humans are able to advance towards what is radically Transcendent the entire nature. Being complacent, on the other hand, with what is just given is a token of sloth and contrary to the human intellectual nature.

4. The lambda variable

Physical theories polemical to the EPR experiment (the one that assumed the existence of the hidden variables) were directly opposed to what was called the local realism. This concerns both Bell's inequality and the CHSH inequality (that of: Clauser, Horne, Shimony and Holt).

The local realism was in Einstein connected with the determinist image of the world. In fact, it was assumed that – so to say – a container of events existed able to sustain all particular events unfolding in it. Bell proved that realism in this guise cannot be rescued. To put it otherwise: should the very term of determinism be used and intertwined with that of realism, it must be understood in the way different to that proposed by Einstein and Leibniz.

According to Aristotle, there is such a determinism to be found in nature indeed, but

specified by the elements of one teleologically structured universe. Paradoxically, the past does not determine the future, but conversely: the action of a cause is determined by the effect intended and about to be realized.

Some recent observations might confirm the claim. Spin of one particle happens to be entangled with that of another one. Both are usually regarded different objects, but in the Aristotelian terms it is rather one and the same object in which two sides are to be distinguished. Those sides are coupled (confuse; συγκεχυμένα) in such a way that one “atomic” fact is able to be incorporated into the teleological structure mentioned above in a definite order. These sides are possibly distinguishable into the moving the moved, but some objects are distinguishable into the form and the matter only. The form does not act upon the matter in the normal sense of the word, and that is why they both form one substance (which cannot be a cause of itself). The restrictions of causal relations have been observed also. The organic processes which occur *within* the most perfect substances (the living ones) are accomplished due to the diversity of the *inner* parts of this totality. Life can be defined as the ability to move itself (being primomotum) just because the diversity of potencies from which actions issue. To be precise: the movement is that of one part acting on another one. The fact is readily perceptible in man: emotions can move the intellect or vice versa, but contrary to what Descartes assumed, the intellect cannot move itself directly. The source action of the intellect, on the other hand, can be only triggered by a form (species intelligibilis; the λ variable) grasped as confusa; συγκεχυμένα.

The fact of entanglement was observed which is not to say: experimented. In experimenting, the motion of objects is – to use Aristotle’s tongue – “forced” and the objects not correlated naturally. Accordingly, no natural rest of them is possible too.

The mathematical operators are able to act upon what is measurable only. There must be, however, something unmeasurable that undergoes motion (aliqua of the major premise of the kinetic proof). The substratum of motion is not measurable in the normal sense of the word, albeit it must be contrasted to its environment (background). Now, measuring does not allow contrasting it minutely enough.

The substratum might be, on the other hand, seized even more distinctly as the substance (substantia, subsistentia, hipostasis). Thus, the kinetic proof can be transformed into the Second Thomasian Way (the Way from causality). The superiority of the kinetic proof consists in that it is less “philosophically burdened”. The existence of substance happened to be questioned, but no one was insane enough to deny that *something* undergoes motion really. Substance is just a more remote principle of motion and the motion must be *eventually* regarded as issuing just from a principle – the rest. Aristotle’s definition of nature makes the point clear: “nature is the principle of motion and rest”. Taken *literally* the statement is liable to serious objections. Zero energy is impossible in nature. The problem is, as was mentioned above, that philosophical terms happened to be copied mechanically without any effort to understand their purport.

Let us analyze a common sense occurrence. We-humans (primomota in the full sense of the word) begin to act after having rested for some time. Unfortunately, the example can hardly satisfy the enemies of the common sense thinking. It is not sophisticated enough.

Let us try, then, to focus on a special human activity; the rational one. Experimenting might be that. It was claimed that all events were determined by the (past) boundary conditions. Now, experimenting is an event no doubt. Is then the “trajectory” of the human mind determined too? The answer with “Yes” seems to be desirable; for otherwise nothing determined would exist in nature and the world would resemble a rhapsody of disconnected elements.

Scientific laws are unchangeable, for all we know. They exist (abide) somewhere. Most probably they just rest in the human mind. After being analyzed, they are grasped immovably in the intellect. In that case, the rest is preceded by the movement (of imagination and reasoning). The point is made clear in Physics book VII.

Bell’s objections “Against Measurement” must be read in this context. Experimenting is bereft of the autonomous value. The theorems must precede and follow. Desperately, the validity of experimenting was tried to be extended upon the theorems (and laws) also. They were expected to be liable to experimenting also. That adds up to that nothing was constant and undoubtable save the right to destroy. The claim is suicidal, obviously enough.

The problem of the coexistence of objects need not be understood in temporal terms only. According to Relativitätstheorie no objects can exist simultaneously. The speed of light must mediate existence of them all. Still, the faster-than-light communication was observed too. Philosophically speaking, no objects can exist simultaneously if they are *equally formal*. They can exist so only as the act and potency (the moving and the moved; the form and matter).²⁷⁶

Paradoxically, albeit we are unable to think simultaneously about many objects (our reasoning unfolds in time), *the principle* of thinking is just such: simultaneously grasped. The objects correlated in *cognitio confusa* exist in this manner. It might be called the primitive rest of the intellect. The beauty of nature we see with naked eyes provides such a rest of the intellect. The scientific laws are at the opposite pole, but they rest in the intellect also.

Living organisms in general and the human being in particular were exempted by

²⁷⁶ STh., I^a q. 58 a. 2 c. ... In another way they [parts] are taken as forming one in the whole; and so they are grasped both by sense and intellect all at once and by one operation; as long as the entire continuous whole is considered, as is stated in De Anima iii, text. 23. In this way our intellect understands together both the subject and the predicate, as forming parts of one proposition; and also two things compared together, according as they agree in one point of comparison. From this it is evident that many things, in so far as they are distinct, cannot be understood at once; but in so far as they are comprised under one intelligible concept, they can be understood together. Now everything is actually intelligible according as its image is in the intellect. All things, then, which can be known by one intelligible species, are known as one intelligible object, and therefore are understood simultaneously. But things known by various intelligible species, are apprehended as different intelligible objects.

Thomas from the direct argumentation of the kinetic proof. They are *primomota*, which is to say: less prone to being analyzed than ordinary objects in which the moving and the moved are *simply* different. For in *primomota* they are different *within* a substance only. Nor, for that matter, does The Second Thomasian Way analyze the inner structure of *primomota*. It puts up with stating that some substrata are ontologically independent.

It seems to be contrary to the principle of the economy of thinking to try and focus on the complex instead of the simple. The so called anthropological proof of the existence of God must be by its nature less perspicacious than the cosmological one. It seems to be unreasonable to try and understand both objects and the way we understand them. Physically, it is even impossible.

Still, it were just *primomota* that have staggered the traditional machinist image of the world. Animals proved to more than just machines as Descartes believed. The organic parts proved to be entangled indeed.

Instructive as they may be, these observations are but rough material to be elaborated upon carefully and cautiously. If taken as proofs they must lead to the para-scientific holism or the para-philosophical dreams about auto-creation. The weakness of the anthropological proof issues from that the very complexity of human nature (human persons are *primomota par excellence*) makes it less readily analyzable. Practically, those proofs lack universality. A “private” or “personal” deity (or even a tribal one) appears in them. The private and personal in the human attitude to God is the act of the will only. No one can be replaced in taking personal decisions. But on the other hand, people naturally expect to be helped and shown the way to God. The most inhuman and cruel in man is to turn a deaf ear to this request. The individual act of will integrates the human personality, but the material world we live in is far from being integrated in this way. The act of the intellect must precede that of the will.

The problem of separability of objects has been addressed throughout in the present book. According to Relativitätstheorie, two objects are separable whose cones of future do not overlap. This chimes in with what Thomas says about contingent (incidental) events. Some might be *relatively* so, albeit if located in a more capacious cone of future cease to be contingent. Generally, the universe as a whole has but one cone of future and its *Vis Locativa* makes all events correlated in it.

This cone of future is considerably more than the aforementioned “container of events”. The space is not isotropic. There is a hierarchy of events ordered according to their formality and pointing to the Transcendent Cause.

CHAPTER IX. INTENTIO NATURAE

Modern thought has developed towards opposing radically nature and what was called

“consciousness”. The excessive reaction to that is holism and the ideology of New Age. The reaction must be called unscientific; for despite being an interpretation of scientific data, both fail to satisfy the requirements of science, if the latter is to be understood in the sense elaborated by the ancient Greeks. They tried to understand both nature and the specific place man occupies in it. The place is that of the rational being. In spite of being more perfect than animals, man shares with them the sensual nature. Metaphorically, man is “akin” to all beings in the universe in some respect; for he/she shares e.g. with plants the ability to grow and feed. To a lesser extent he/she is akin to less perfect beings analogically, but differs to them nonetheless.

In the first sentences of *Metaphysics*, Aristotle analyzes the special attitude of man to sense data. The attitude makes for the specific difference (being rational) in man. According to Dionysius, there is, as was mentioned above, a continuity in nature. The somatic in man (the emotional and the sensual too) should not be opposed to the rational in him/her, but subservient thereto; people avail themselves of the sensual in a special manner, and this accounts for them being rational. Thus, the problem of the sense perception (touched upon already many times in the present book) is to be addressed once more. The continuation Dionysius speaks of might be called the intention of nature (Aristotle’s βούλημα τῆς φύσεως). According to Aristotle, nature intends to perfect the human mind (*Protrepticus*, frg. 10, 16, 18, 23, 45). Man is, in Thomas, the center of the universe, at the border of the material and the immaterial. His/her intellect directs him/her Beyond it. S. John Paul II recalled the ancient maxim in this context: *positus in medio est homo: nec bestia, nec Deus*.

1. The historical background of the problem

In *Metaphysics* (Book I, Ch. 1, 980a 22 – 27), Aristotle attaches special importance to the visual perception. “It shows many differences”. The term of *species sensibilis*, in Scholasticism, includes the root of (a)spicere (“to see”). Still, the problem is *what* is exactly seen: whether it is *light* and modified only according to what it is reflected by, or rather *things* via what shows up to be but a *proxy*. The problem might be put on razor’s edge: is it possible that the very *nature of things* be revealed by this proxy? Should light be grasped in terms of geometrical optics only, it will never reveal anything save *exterior outlines* of objects. Now, it need not be understood so, after all; for the possibility lies open to see a *continuation* of the *inner* structure of bodies to their *exterior* actions (e.g. on our senses). A possibility looms to regard them both as waves: either standing (bodies), or travelling ones (electromagnetic waves, which carry the information called *species sensibilis*). The theory of wave gained (with considerable difficulty) the right of citizenship in sciences only in the 19th century. However, what Aristotle speaks of *Energeia* (the basic term of his *Physics*) chimes in with the essentials of this theory. The *Energeia* permeates the whole universe and accounts for its cognoscibility too.

Despite underscoring importance of the visual perception, Aristotle sees an analogy in

it to other senses. No such an analogy is to be found on those who followed Descartes. In Husserl, APOFANSIS is understood as revealing, and seeing is, in fact, as the only way of knowing. The light of the intellect might be directed in pretty much the same way as light beams are.

If, consequently, bodies were deemed separated from what makes them visible, a natural question arises as to what makes them act on our bodies and sense *organs*. For apparently, they could not act on our mind directly.

Descartes described this corporal property *as being extended, flexible, and movable*. Locke called it primary property of bodies, and it was nothing else than their massiveness. Objects *occasioned* our thinking only. In fact, it was only possible due to the (hidden) ambiguity included in the term of TOUCHING. Both physical proximity and the most imperfect sensation might be called that. Descartes claims that bodies are massive in the former sense only, but without the tacitly assumed equivocation, it would be impossible to understand how they could occasion our cognition after all.

Bodies were supposed to resist the physical action (e.g. of our hand) and the massiveness was, in fact, nothing else than the resistance. In Descartes, Galileo and Locke, it is called the primary property and contrasted to other ones (secondary properties): perceived by senses.

Physically, the statement is untenable. In TOUCHING, (no matter how understood) it are electric forces that make an object resilient. The same forces, and more prominently so, are present in the sensual perception. For we see due to the propagation of the electromagnetic wave. The propagation in the case of hearing might be mediated by particles, but hearing is only possible because of electric forces, which prevent dissipation of energy (the adiabatic change). The visual perception is more perfect than hearing because it are not springy bodies that made the propagation of the wave possible. There is no, literally speaking, a springiness of the void, but distant stars are only visible because energy is not dissipated in it. Thus, there is no essential difference in all sense perceptions. Consequently, it are rather (seen) colors that are “primary” properties than the massiveness of bodies if touched. In TOUCHING, it is “the springiness” of our senses which enables the perception. The situation is not essentially different in seeing. The same holds true as for physical touching. It are electric forces that prevent e.g. our hand plunging into a touched wall as it does into water.

All senses perceive objects via different channels of perception (via different proxies, or waves differently propagated). The less perfect a sensation, the more “cascade like” the propagation of the wave. A ball falls gradually down the stairs, but it are gravitational forces that are at work no matter how difficult the stairs to scale. In the present Chapter, it will be shown that in Aristotle the wave motion (periodic one) is original (the most natural). If a ball rebounds, it is not massiveness, but springiness of the inner structure (of the standing wave) that makes the “resilience” possible. Both bodies (standing waves) and the way they act upon our senses (traveling waves) are to be subsumed under the same denominator of periodic motion. What makes the sense perception different to being physically acted upon is – so to say – the “ideal springiness” of senses (albeit not of the sense organs).

The inverse commas are at the proper place; for senses do not react (directly). The

reaction in animals follows upon the sense perception, but the whole structure (the living organism) is just more complex than the structure of crystal. Animals react with anger on the evil inflicted, and there are no “negative” emotions in them as the reaction is *natural*. The only problem consists in that it is extremely difficult to address the reaction adequately. In the Third Newtonian Law, the vector of action is posed *on the same line* as that of reaction, but the situation is *ideal*, and impossible to be copied accurately in nature. A wounded animal is likely to bite a hand of who tries to help it. A bruised psyche reacts for *occasional* objects. A child would express his/her resentment not against who harmed him/her (the culprits relish in being anonymous, and would shirk the responsibility), but on who is attentive of the harm inflicted instead. In the sense perception, only the primitive information (species sensibilis) is included as to how direct the actions subsequently. Eventually, it is the intellect which elaborates on the sense data that makes the job. To pose the reaction “on the same line” to the action, the virtue of justice is necessary, and right theoretical judgments first. It is due to the judgments only that the asymmetry of nature is revealed and its being directed towards the Transcendent Cause. Sub specie aeternitatis every evil suffered appears to be almost nothing and not worth paying attention to. Evil appears to be acceptable (bearable), if the Way to the Ultimate is shown distinctly enough.

According to Aristotle, it is energy that determines the identity of a body. The inner state of energy, on the other hand, is demonstrated by the traveling wave which issues from within this structure. The medium we see and hear through is affected proportionally to the state of energy of a body.

De Broglie and Schrödinger regarded bodies as standing waves. In the wave function: $e^{-i\omega t}$, ω is directly proportional to the energy (Aristotle’s form) of a body. The expression can be expounded into the sin and cos function. The part of the equation without the imaginary number describes a physical action. The other part – the intentional one. No massiveness exists as opposed to the cognoscibility of bodies.

The philosophy after Descartes advanced the idea of massiveness. In Fichte, “consciousness” (the self) stumbles upon a hindrance (the impact was called Anstoss). Johann Gottlieb Fichte was obviously dissatisfied with the original Cartesian idea of res extensa, and even with the Kantian Ding an sich. In the perfect accordance with the spirit of idealism, he described bodies as not-I. The opposition to “consciousness” makes for their identity.

The consequences were far-reaching. If bodies were defined and definable relatively to the way they hamper the free movement of the self, the human knowledge on them must be preceded by human acting (operating on them). Pragmatism is the obvious consequence. But the Heideggerian Zuhandenheit and Marxism must be mentioned in this context also.

On a considerably modest scale, the consequences appeared in science too. The so called operationism, resigns from determining *what* things *really* are, putting up with *how* they are possibly describable (with some practical objectives in mind). Instead of real definitions, the operational ones were only workable.

The category of “handiness” must have appeared. Something resembling the Hegelian necessity conditioned it. Traditionally, hand was deemed organum organorum. It is impossible to make anything without it, but on the other hand, no animal is endowed with

such a perfect instrument. It is perhaps because we touch with hands (in both aforementioned senses) first of all. We work with hands even if writing and searching for the abstract information.

In what is “foreign” to “consciousness” Hegel saw a barrier to trespass. What *appeared* later on was but an effect of this work. The processes unfolded originally in history, and the absolute knowledge was heralded to be obtained in 1807; the year Hegel had finished “The Phenomenology of Spirit”. The Husserlian Phenomenology was more modest, or else the “Spirit” dwarfed over the century it appeared after. The Husserlian science could never come to fulfilment. Lebenswelt we live and operate in could not be trespassed.

According to Thomas, who quotes Aristotle’s Treaty in the Heavens (De caelo et mundo, book I) “parvus error in principio magnus est in fine” (De ente et essentia, proemium). A tiny mistake grows enormous eventually (in history). The Marxian dialecticians tried to justify any “truth” by how they could profit therefrom. Nowadays, the handiness dominates as a prominent mark of the modern culture. Truth happens to be regarded secondary to material profit.

Let us, then, return to the principle. In “Meditations” Descartes carries out a mental experiment on bodies.

11. Let us now accordingly consider the objects that are commonly thought to be the most easily, and likewise] the most distinctly known, viz, the bodies we touch and see; not, indeed, bodies in general, for these general notions are usually somewhat more confused, but one body in particular. Take, for example, this piece of wax; it is quite fresh, having been but recently taken from the beehive; it has not yet lost the sweetness of the honey it contained; it still retains somewhat of the odor of the flowers from which it was gathered; its color, figure, size, are apparent (to the sight); it is hard, cold, easily handled; and sounds when struck upon with the finger. In fine, all that contributes to make a body as distinctly known as possible, is found in the one before us. But, while I am speaking, let it be placed near the fire--what remained of the taste exhales, the smell evaporates, the color changes, its figure is destroyed, its size increases, it becomes liquid, it grows hot, it can hardly be handled, and, although struck upon, it emits no sound. Does the same wax still remain after this change? It must be admitted that it does remain; no one doubts it, or judges otherwise. What, then, was it I knew with so much distinctness in the piece of wax? Assuredly, it could be nothing of all that I observed by means of the senses, since all the things that fell under taste, smell, sight, touch, and hearing are changed, and yet the same wax remains.²⁷⁷

The ordinary sense perception was disavowed. The problem of what defines the (sensed) body must issue:

12. It was perhaps what I now think, viz, that this wax was neither the sweetness of honey, the pleasant odor of flowers, the whiteness, the figure, nor the sound, but only a body that a little before appeared to me conspicuous under these forms, and which is now perceived under

²⁷⁷ Rene Descartes, *Meditations on First Philosophy*, Translated by John Veitch (1901);
MEDITATION II. OF THE NATURE OF THE HUMAN MIND; AND THAT IT IS MORE EASILY
KNOWN THAN THE BODY

others. But, to speak precisely, what is it that I imagine when I think of it in this way? Let it be attentively considered, and, *retrenching all that does not belong to the wax, let us see what remains. There certainly remains nothing, except something extended, flexible, and movable.* But what is meant by flexible and movable? Is it not that I imagine that the piece of wax, being round, is capable of becoming square, or of passing from a square into a triangular figure? Assuredly such is not the case, because I conceive that *it admits of an infinity of similar changes*; and I am, moreover, unable to compass this infinity by imagination, and consequently this conception which I have of the wax is not the product of the faculty of imagination. But what now is this extension? Is it not also unknown? for it becomes greater when the wax is melted, greater when it is boiled, and greater still when the heat increases; and *I should not conceive clearly and] according to truth, the wax as it is, if I did not suppose that the piece we are considering admitted even of a wider variety of extension than I ever imagined*, I must, therefore, admit that I cannot even comprehend by imagination what the piece of wax is, *and that it is the mind alone (mens, Lat., entendement, F.) which perceives it.* I speak of one piece in particular; for as to wax in general, this is still more evident. But what is the piece of wax that can be perceived only by the understanding or] mind? It is certainly the same which I see, touch, imagine; and, in fine, it is the same which, from the beginning, I believed it to be. But (and this it is of moment to observe) the perception of it is neither an act of sight, of touch, nor of imagination, and never was either of these, though it might formerly seem so, but is simply *an intuition (inspectio) of the mind, which may be imperfect and confused, as it formerly was, or very clear and distinct, as it is at present, according as the attention is more or less directed to the elements which it contains, and of which it is composed.*

The body was, in fact, defined by privation; by being foreign to mind. Should the latter be understood (as in Neo-Platonism) as light, bodies will be the opposite:

15. ... if I judge that the wax exists because I touch it, it will still also follow that I am; and if I determine that my imagination, or any other cause, whatever it be, persuades me of the existence of the wax, I will still draw the same conclusion. And what is here remarked of the piece of wax, is applicable to all the other things that *are external to me.* ...²⁷⁸

Simili ratione, si judico ceram esse, ex eo quod hanc tangam, idem rursus efficietur, videlicet me esse. Si ex eo quod imaginer, vel quâvis aliâ ex causâ, idem plane. Sed & hoc ipsum quod de cerâ animadverto, ad reliqua omnia, *quae sunt extra me posita*, licet applicare.²⁷⁹

Obviously, things that “are external to us” could *approach* us too; they can be more or less remote. Proportionally to how they entered the human world, they became more distinct. For: the “intuition of the mind ... may be imperfect and confused, as it formerly was, or very clear and distinct, as it is at present, according as the attention is more or less directed to the elements which it contains, and of which it is composed”. The intuition (the Kantian Anschauung) makes for their cognoscibility.

Descartes speaks of the “intuition of the mind ... [which] may be [*formerly*] imperfect and *confused*” (“solius mentis inspectio, quae vel imperfecta esse potest & confusa, ut prius erat, vel clara & distincta, ut nunc est, prout minus vel magis ad illa ex quibus constat

²⁷⁸ Ibid.

²⁷⁹ <http://www.thelatinlibrary.com/des.html>

attendo”); for as the theory of *cognitio confusa* had been commonly accepted by Scholastics and bequeathed to the posteriority, it was impossible to be ignored. Still, philosophers understood it differently (The *confused* cognition is mentioned even by Wittgenstein). Descartes follows Scotus’ interpretation of *cognitio confusa*. The very term of intuition used in this context testifies to the fact.

Be that as it may, the core of the problem is that *cognitio confusa* in Descartes *does not trigger* the intellectual cognition, but only *occasions it*. It was defined in terms of privation. Now, no positive knowledge can be drawn from privations (e.g. negative premises). The knowledge had to be mediated by praxis; for if what is about to be “clear and distinct”, is *formerly* imperfect and *confused* – it must be mediated anyhow. The natural medium was rejected and the artificial one remained only. Hegel describes the mediation as *Vermittlung*.

Human actions stumbled upon a barrier. Now, should the very term be granted, there will be, according to Aristotle, as many “barriers”, as many natural actions are. But there were no diverse principles of acting in Descartes, nor diverse barriers.

According to Descartes, motion (actions) is superadded to bodies. He follows Averroes’ idea of motion there. To Averroes mind, motion might be deemed univocal and separable from whence it issues and tends to. The problem in Descartes and Leibniz was reworded as that of the “true measure of motion”. According to Aristotle, motion is not univocal (it can be defined in analogical terms only) and there are many “subjects” (substrata) thereof. No “subjectivity” (the self) can operate on its own. Modern idea of subjectivity originated from the vitiated Cartesian position. One can *imagine* motion (as Averroes did) as a *Fluxus*, (and in-between the objects) but the image is worthless for *understanding* it. The opposition of the subject and the object is a consequence of the debauched principle.

According to the Third Newtonian Law, the acting and the acted upon do act reciprocally, and this because of the disturbance of the electromagnetic field (the harmonic oscillations of the bodies). Aristotle is just more precise in describing the situation: the ideal symmetry is infeasible; the nature is asymmetrical in this respect. That is why the cause and the effect can be distinguished after all. Be that as it may, it are electric forces that account for both physical actions and the cognoscibility of objects. The visual perception is a privileged one; for the electromagnetic wave (and the energy associated with it) is not dissipated significantly here.

Naturally, sense organs are bodies. They share in the common characteristics of them all. If affected by a too strong impulse, they lose (according to Hook’s Law) the resilience. Extremely loud sounds are rather mechanic impulses than carriers of the information. Human emotions are similar in this respect. It is no sheer mode de parler to speak of RESILIENCE here. If affected too vehemently, people are emotionally crushed. The emotional “identity” might be destroyed (broken).

A certain equilibrium must precede the sensation. If impulses are too strong they cease to be signals, and become “noises” or “impacts”.

Albeit sense organs are bodies, senses themselves are more than that. They are rather *similar* to detectors of the electromagnetic waves. A radio receiver is able to attune to just one of many signals propagated in the “ether”. Similarly, a conductor is able to focus on just one

member of the orchestra and listen carefully to whether the score is played correctly.

Generally, the “clear and distinct” perception Descartes speaks of is in fact that of a plain wave course and easily analyzable as to its components. Descartes says that “the attention is more or less directed to the elements which it [a body] contains, and of which it is composed”. Thomas is more precise in determining the nature of the “attention”. A primitive abstraction (*sensu largo*) is accomplished here. Anyhow, noises are hardly analyzable and that is why they are irksome and jar upon our senses. The analysis is frustrated, and nobody likes being hampered in his/her natural action. In this sense, a barrier of perception exists indeed.

John Cage composed a piece of music out of some ordinary “noises” connected with the everyday human practical activity. But naturally, only a trained musician’s ear is able to analyze the otherwise helplessly confused signals. Normally, we relish hearing the voice of a nightingale and abhor the noise produced by a car-engine. The former is readily analyzable, the latter is scarcely so. The elementary sense perception is just this: analyzing. Descartes saw the problem, but failed to describe the *nature* of the process. If he says: *magis ad illa ex quibus constat attendo*”, he has apparently an analysis in mind.

According to Crawford, human hearing accomplishes spontaneously the Fourier analysis of complex sounds.²⁸⁰ He says that some information happens to be *dropped* as *not essential*; the information hardly analyzable (and describable by simple mathematical equations too). The absolute music (Bach’s “Kunst der Fuge”) is first of all this: “mathematical”. The latter is *prerequisite* for esthetic experience.

The same *mutatis mutandis* must hold true as for other senses. Too vivid colors jar upon our nerves. In a painting masterpiece, on the other hand, they are masterfully *harmonized*. All the more in nature (untouched by usable objects), colors are perfectly adjusted.

The sense perception is, as was mentioned above, essential for intellection. In the latter a harmony is grasped also. E.g. in mathematics the esthetics and elegance of theorems is appreciated. Disorder, chaos and messiness are naturally abhorrent and paralyze the human vital activity. Especially, the intellectual one.

2. The animal perception

In *Meditations*, Descartes claims that sense perception informs about what is profitable and noxious for us in bodies only, but not about their nature. Not even potentially, their nature could be revealed. Now, granted the claim for the time being, is always might be asked what being profitable and noxious consists in.

According to what we read in Aristotle’s “*De anima*”, the images of perceived things are stored in the animal memory. Otherwise, an animal (at least the perfect one) would be

²⁸⁰ F. S. Crawford, *Waves*.

unable to pursue or avoid objects. The object must be identified in some way. Most probably, birds are not in a position to discern between a patch of leaked oil and clear water. The natural instinct works properly to some extent, but a patch of oil is an object apparently foreign to the avian world. There is “no place” for it therein. The judgment of instinct fails to identify it (to place it in the inborn matrix). Apparently, all human artifacts are potentially deceptive in such a way to animals. It is neither color nor shape of objects that matters. Senses are receptive of incredibly small displacements. Human hearing registers those of ca 1Å (the diameter of an atom). Smell distinguishes perfectly between chlorine in the form of chloride ions, (part of edible salt) and chloride in the form of chlorine particles (a deadly poison). Geometrically, the differences are really “small”.

As for sight, it registers discrete levels of frequencies of the electromagnetic waves. The frequency is proportionate to the (changed) level of electrons in atoms. When an electron drops to a lower energy level it releases a photon. Atoms emit radiations then. Light beams can only rebound from objects because of having been absorbed first. The discrete levels of energy are proper to particular atoms, particles and compounds.

The law of quantization of energy observes in elementary bodies. Unhappily, the human world was tried to be opposed to, and exempted from, this general principle. In it, phenomenological objects were known only. The objects of the Husserlian *Lebenswelt* are, in fact, the “profitable” and “nocuous” Descartes’ *Meditations*, speak of. Thus a – so to say – *Naturvergessenheit* has occurred in modern philosophy. The *real* objects, nevertheless, appear to share in the common characteristics of all nature bodies. They remain in a definite natural order to each other. The order, in turn, implies them being distinguished (discrete).

Thus, the Aristotelian statement proves to observe analogically. *Species rerum sunt sicut numeri – unitas addita vel subtracta variat speciem*. The vital actions follow upon the diverse forms.

Now a thing is said to be perfect if it lacks nothing according to the mode of its perfection. But since everything is what it is by its form (and since the form presupposes certain things, and from the form certain things necessarily follow), in order for a thing to be perfect and good it must have a form, together with all that precedes and follows upon that form. Now the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode: hence it is said that the measure marks the mode. But the form itself is signified by the species; for everything is placed in its species by its form. Hence the number is said to give the species, for definitions signifying species are like numbers, according to the Philosopher ...²⁸¹; for as a unit added to, or taken from a number, changes its species, so a difference added to, or taken from a definition, changes its species. Further, upon the form follows an inclination to the end, or to an action, or something of the sort; for everything, in so far as it is in act, acts and tends towards that which is in accordance with its

²⁸¹ Aristotle, *Metaphysics*, VIII, c. 3, 1043b 36-1044 a 2.

form; and this belongs to weight and order. Hence the essence of goodness, so far as it consists in perfection, consists also in mode, species and order.²⁸²

The intellectual in man, in turn, is just more precise in grasping the discrete levels of energy. Nevertheless, every distinguishing can be called abstraction *sensu largo*. There are, according to Thomas, *diversi gradus entitatis* to be found in the world only (De veritate, 1, 1, c).

The quality of abstraction is directly proportional to the ability to survive in the natural environment. Without retracing the elementary in it, however, an animal could not distinguish between the “profitable” and “nocuous”. Both rhythm and quality of life depends on how distinctly the elementary has been grasped.

The “trajectory” of the animal mind (and the human mind all the more so) spans between “here and now” ($t_1; x_1$), and “there and then” ($t_2; x_2$). The line joining them both can be called life.

The life in general and the survival in particular is only possible due to that both the animal body and the unanimated one (a form of the natural environment) are built out of discrete elements and adjusted to each other. This accounts for e.g. whether an object could be fed on. For all genuine activities, it is essential to drop the phenomenal in objects and to regard *the other side* of them instead (the one forbidden by Kant to be sought). The transcendent can only trigger the authentic life; for it is impossible e.g. to feed on the smell of flowers and on mundane hopes either. One can *nourish* them, but the relation is not reciprocal. Plants live because able to accept nourishment, despite being bereft of sense perception.

Husserl juxtaposes two notions: that of life (Leben) and that of experiencing (Erleben). Contemporarily, life happens to associated with feeling. The quality of “consciousness” was proper to Erleben. As however, animals are able to sense and feel, they were, in Husserl’s “Logical Investigations”, participant of “consciousness” too. Now, the problem is whether plants live too, despite being unable to experience anything. Husserl of course denies “consciousness” to plants, but, most recently, there have been some attempts to “prove” that they feel and sense, nonetheless.

It has been shown above that cognition implies “bearing in mind” *concepts* (the understanding is *conceiving* them in the intellect). Concepts are naturally begotten. Animals can reproduce generatively only because along with the faculty of generation (*potentia generativa*) there is in them the faculty to get to know objects (*potentia cognoscitiva*), which are generated in their minds. Now, plants can reproduce vegetatively, and there is no begetting in them save metaphorically (a soil might be called fertile per *analogiam ad females*). Cloning (the vegetative reproduction) if possible in animals at all, must be less

²⁸² The Summa Theologiæ, Question 5. a. 5, c. The Summa Theologiæ of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight.

<http://www.newadvent.org/summa/>

perfect than, or even inferior to, the animal generation properly speaking.

In humans, in turn, the generation is connected directly with the intellectual principle. The spiritual in man (the ability and *right* to raise the progeny) is the begetting in the full sense of the word. If, in turn, the purely intellectual substances beget, it is only possible (as Thomas has it) because of the ability to share mental concepts with others. Eph. 3. 14, 15, according to Thomas, speaks of it. There is at least a trace of the inner life of God (the most perfect begetting) in nature. The fact was expressed in the words: “[14] For this cause I bow my knees to the Father of our Lord Jesus Christ, [15] Of whom all paternity in heaven and earth is named”.

According to what was said above, there is an apprehension and the action triggered by it (*usus*) in men. The perfection of life depends first of all on how distinctly things are known (or at least perceived). The feeblest echo (and scarcely perceptible) of this perfection is to be found in plants. The most perfect – in the intellectual beings. Parents beget not only physically, but first of all impart values, knowledge and wisdom to the progeny. Without them begetting would be crippled.

Usus (the animal appetite first of all) is necessary for animals because their bodies (complex unities) must depend on the natural environment (which drives the vital rhythm of their existence). Without the interaction the life rhythm would be damped. Accepting nourishment is necessary for pumping in some amount of energy into a system. Animals must be able to discern the state of energy of objects (their frequency and *faze*) so as to assimilate them. The ability to discern is directly proportional to the ability to survive. Plants, on the other hand, are unable to reject e.g. contaminated water or air. Their existence is abandoned (*gegeben* to use Heidegger’s term) to the world they live in.

In the treaty “*De sensu et sensato*” (347b) Aristotle criticizes Plato’s (and Empedocles’) idea of the visual perception. According to Plato, the “light” of the eyes issued from them and met the “exterior” light stemming from objects. The darkness, to the contrary, “extinguished” the former (*Timaeus* 45D 3-7).

Taken literally, Plato’s sentiment is nonsensical. According to Aristotle, both our senses and mind are affected by the sensed objects. The problem was, however, to determine the nature of “being affected” (*παθεῖν*). It can only be understood analogically, for e.g. touching (sensing) is different from being touched (physically), as was mentioned above.

Still, should the sense (not the eye to be sure) be understood as a receiver, and the “light” of the sense as the frequency proper to it, Plato’s statement appears to be pointed. If attuned properly (met with objects), a sense registers their oscillations. If not, its “light” might seem to be “extinguished” really.

Aristotle and Plato do not contradict each other; they simply describe two aspects of the same problem. For *παθεῖν* may be deemed “equaling” (“meeting”) indeed. The frequency of the receiver is equaled to that of the wave about to be registered.

The values of the frequencies emitted by bodies cannot vary monotonically. It is obvious that we see the light reflected from objects. The only problem is that seeing is not directly connected with reflecting after all. Neo-Platonists failed to understand it. In other words: the phenomenon of the reflecting is not a simple as might be imagined. In reality,

emitting is always preceded by absorption. The allegedly simple phenomenon is, in fact, a coupling of these two: of the acting and the acted upon. This factual coupling is the object included in sense perception potentially; for the intellect can elaborate on the datum, and the animal instinct can register it to some extent too.

Vivid organisms should be treated analytically not in the sense of “dissecting” them into particles, but in the sense of subsuming them under the elementary principle of quantization of energy. The flux of energy Averroes and evolutionists speak of is impossible in nature. The elementary particles, conversely, can be regarded analogically to vivid organisms. Thus, the length of life (τ) of excited atom can be understood analogically to the animal life.

Now, emitting waves (and species sensibilis associated with them) is only possible due to electrons dropping to a lower energy level. The frequency of waves is typical of each atom. In spectroscopy, diagrams of terms allow identifying a substance. The process inverse to emitting is called absorption.

Let us try to describe this in the scholastic terms. According to Thomas, light *makes* things visible, but *what* is visible are colors, not light itself. Now, the former might be called absorption; the latter – emission.

Things do not, however, present themselves to our senses perfectly. Spectral lines of the diagrams of terms are actually broadened. There are several causes thereof. The thermic motion of particles is one of them. For there is an inertia in physical bodies and called by Aristotle prime matter. But the elementary sensual “abstraction” consists in dropping what makes the “energetic outlines” of objects blurred. The individualized matter (*materia signata*) is unknown to the human mind. In fact, the human cognition must abstract from it.

The vital activity which follows the cognition might be likened to the amplitude of oscillations of a given harmonic oscillator (a body). Without driving force (e.g. assuming nourishment) the amplitude of oscillations must wane exponentially:

$$A = A_{pocz} e^{-t/2\tau};$$

$$A(t) = A_0 \exp - t/2 \tau.$$

The life, however, consists in preserving the energy, and the vital oscillations are describable by the equation:

$$A(t) = A_0 \exp (- i\omega_0 t - t/2 \tau).$$

The damping force must be counterbalanced by the driving one.

The energy of driven oscillations stems from the energy of chemical bonds of nourishment. The “profitable” is only so if known up to the elementary constituents of a structure. They must be known first; i.e. retraced minutely enough.

Apart from life, death is natural to all *material* organisms. The resistance analogous to that of a RLC system makes for the impossibility of infinitely prolonged oscillations. Material substances are composed of prime matter. A specific form, on the other hand, makes for a discrete level of the energy of a substance. The degree of life (or existence in general) is proportionate to how a form dominates over the matter.

Elementary particles are passive as unable to initiate their actions. Plants, in turn, initiate them, but the principle of actions is unchangeable; i.e. completely uniform

(phototropism is uniform indeed). Animals' existence is more perfect because originating from a more perfect principle. Species sensibilis is not uniform because things are perceived and sensed differently. The human life is more perfect yet, for stemming not from species sensibilis but from what is abstracted therefrom by the intellect – species intelligibilis. In purely intellectual beings, in turn, (Thomas calls them angels) a species intelligibilis exists but not abstracted from the sense data. A life is perfect according to how immanent the principle it originates from. Kant misunderstood the fact; for the “creative imagination” is not, in fact, immanent principle. It is only species intelligibilis that is immanent enough to spur actions proper to man (a rational being). The immanence, if seized in spatial terms, renders the situation incomprehensible. Immanentism fell prey of imaginary thinking.

The life of the First Principle is perfectly immanent. Human life is so according to how much driven by the First Cause. The Cause is – to use Augustine's words – “intimior intimo meo”. Creatures, in general, can only exist (an act) because activated by the Cause. Naturally, creatures are not God's life. They are but a defective image of It. There is essential discontinuity between creatures and God. There is asymmetry therein. Creatures cannot exist without God, but He does not need them at all. The creation is, according to Thomas, the deed of mercy, not of justice. But without justice, no justifiable reasons would have existed to admit the existence of God.

3. The nature of perception

Albeit both originally rooted in nature, two types of actions are, according to Thomas, to be distinguished: the physical one causing material change in objects and the intentional one causing the cognition of them.

Averroes, as has been mentioned above, tried to locate motion in a special category. Practically, it might have seemed only possible, in the 12th century, if fusing together two Aristotelian categories: those of passion and action (ποιεῖν, πάσχειν). Both the moving and the moved (agens and patiens) must be eventually distinguished in science; but if motion were defined as fluxus (in Averroes and those who followed suit), such a distinction would prove impossible. Science would return to its beginnings; to the ancient variabilism, which had occasioned the subsequent progress, no doubt, but had posed a serious challenge to science nonetheless.²⁸³ Plato's reaction was constructive, but proved too vehement by Aristotle, who

²⁸³ Summa Theologiae I, q. 84 a. 1 c. ... primi philosophi qui de naturis rerum inquisiverunt, putaverunt nihil esse in mundo praeter corpus. Et quia videbant omnia corpora mobilia esse, et putabant ea in continuo fluxu esse, aestimaverunt quod nulla certitudo de rerum veritate haberi posset a nobis. Quod enim est in continuo fluxu, per certitudinem apprehendi non potest, quia prius labitur quam mente diiudicetur, sicut Heraclitus dixit quod non est possibile aquam fluvii currentis bis tangere, ut recitat philosophus in IV Metaphys.

defended natural laws (the laws of changing). Now, it is hardly believable that a Plato or an Aristotle could stand the trial of the *modern* variabilism (relativism). The lesson taught by history must be remembered, but not repeated. Especially, Thomas' reaction to Averroes' stance must be borne in mind.

Now, the only flux possible is that of the vicarious form (*species sensibilis*) diffused, according to Thomas, in the medium between an object and the mind. (The separate problem is whether a special category should be allotted to the intentional actions). The propagation of forms might be hampered, and the energy in the medium dissipated to the extent a physical medium absorbs the energy and a physical change accompanies the intentional one.

Light is not dissipated in the ideal void only. In it, its speed is determined by – so to say – the “properties” of the void (ϵ_0 ; μ_0). The air, on the contrary, absorbs a certain amount of energy. Thus, e.g. not only is the sun seen at the sunset, but the air which makes it so picturesque too.

The other senses (besides the sight) are less perfect, because the medium is less “ideal”: the propagation of the electromagnetic wave is mediated by bodies. The more they are springy, the better the perception. This applies to the sense of touch also; for our body might be a medium too.

The Aristotelian views concerning the intentional actions chime in with the discoveries of modern science. Still, it can always be objected that they did so *incidentally* only; for Aristotle and Thomas knew nothing about what is essential in these discoveries (the experimental method only conditioned them – the one unknown to the ancients). Not even could they – as it might appear – anticipate them. It remains, consequently, to show that *the coincidence is not casual*. There were some premises which *necessitated* the theory of *intentio naturae* and made it consistent with the most brilliant discoveries of the science about to come. Thus, the following questions must be answered:

- 1) The theory of waves had been unknown till the turn of the 19th century when Young's discoveries appeared to be breaking indeed. The nature of light had not been known until quite modern discoveries. It was, in turn, only in 1923 that De Broglie laid down the foundations of the wave particle dualism. How was it, then, possible to anticipate these discoveries in the centuries when no experimental tools needed (as it seems) were accessible?;
- 2) The “mechanism” of seeing might be described in terms of geometrical optics. The outlines of objects delineate on the retina of our eye, and the shapes of them are stored in the memory next. Is it, then, convenient to take into account diffraction and interference when describing the mechanism of seeing?;
- 3) If geometrical optics sufficed, the Thomasian claim that the aforementioned shapes were objects of the common sense would be wrong; for no such a sense should be distinguished from the sense of sight;
- 4) The objects of the “human” world are macroscopic. It would seem unreasonable to take into consideration quantum mechanics in analyzing them. Regarding those “small” objects would be superfluous;
- 5) Comparing senses to receivers might be suggestive, but (historically) anachronist.

Aristotle knew nothing about such like artifacts.

Ad 1) Aristotle knew nothing about electromagnetic waves if the knowledge be understood as that of mathematical equations describing them. Still, it will be shown later on that a *qualitative* description of them was given by Aristotle indeed. A special term was adopted for the propagation of waves: ANTIPERISTASIS. Contrary to mechanical impulses, waves are effective carriers of energy. An object floating on the surface of water can be effectively moved by who triggers the oscillation of water surface. The fact can be easily observed. Moreover, we hear sounds due to the adiabatic change in the air. The energy is not dissipated then. Now, in *De anima*, the qualitative description of the adiabatic change has been provided.

Ad 2) The geometrical outlines of objects need not be the only perceived. Neither, for that matter, do they need to be the *principally* perceived. The apparatus of hearing and seeing is incredibly precise; much more than that of the instruments able to register sheer displacement of objects.

Ad 3) Thus, the shape of objects need not be the only perceived. Moreover and just to the point, it cannot be the *originally* perceived. The geometrical outlines are *stored* in our memory, whereas the objects *sensed* are the opposite: in motion. Now, the problem is whence their rest stems. Condillac's elucubrations are simplistic indeed. We are no "statues" organized inwardly. There are, in nature, objects in motion and the mind (which analyzes them) exists in it also. The mind analyzes them to the extent the elements are *distinguished* and *rest* in the intellect. The elements rest: firstly – in the common sense; secondly – in the memory; thirdly – in the intellect. In the latter, they are *absolutely immovable*; for *the laws of nature* grasped in the intellect are just this: *permanent; immobile and resting*.

Ad 4) According to Wichmann, the objects of the "human" world are "phenomenological" (they are, in fact, phenomenal, but Wichmann's statement addresses not only ontology, but the history of the theory of science too). The real ones, in turn, are describable by quantum mechanics only. It says what they *really are* (for all objections raised by the Copenhagen School). For practical purposes, statistic (approximate) values suffice. But it is by means certain that we-humans are *practical beings rather than theoretical*. The human intellectual development is at stake if both the elementary and the ultimate in science is tried to be shown.

Ad 5) It is undeniable fact that receivers are artificial objects of the everyday life. But there is a *natural* situation analogical, which, most probably inspired Aristotle. Words spoken aloud and listened to are respectively: emitted and received. The theme of dialogue and communication are leitmotifs of the contemporary philosophy and culture. However, no definition of communication was provided. But it was so in Aristotle. That is why it is worthwhile to read his *Metaphysics* once more.

4. The effect of the sensual perception

No matter how theoretical, no science can dispense of the sense perception. We live in the material world and our actions are directed adequately only if the bearings in the material environment are not lost. There is always the aforementioned *usus* in the human life, which, however, cannot be identified with utility. The term of *USUS* is infinitely more capacious. The human will directs the actions, which would be impossible without setting down accurately the relation to the material objects. The imagined things are, according to Thomas, necessary not only to *trigger* our cognition, but to *use* the possessed one also. In other words: not only do they *occasion* our cognition; they cause it. Neither, for the matter, do they *necessitate* it. For the *empirical* cognition is but conditionally necessary, whereas it is proper to *deduction* only to necessitate indubitable conclusions. Anyway, the intellectual in man is a hostage to the material and sensed necessary for life.

The problem might be seized as that of the aforementioned communication. Normally, people communicate their thoughts with others. But broadly speaking, a communication occurs also when one and the same person tries to bridge the empirical space spanning between two moments of his/her life. In this case, personal “integrity” is a hostage to the ability to communicate the *HERE AND NOW* to the *THERE AND THEN*; to find a continuation between two material sets of circumstances. There is a material rift yawning between two moments of life and two places one lives in. After bridging the rift, *PEOPLE* show up to be *PERSONS*. The problem is how to communicate one’s knowledge and integrate one’s existence by finding communication between the present time and the (future) objectives hoped to be achieved. Emotional integration results from setting up goals about to be realized and subordinating the present to the objects intended. They are so (intended) not in the sense of lying “deeply buried” in the strata of “sub-consciousness”, but in the sense of directing actions to definite objects. Archbishop Fulton Sheen compared the latter to stars which a sailor regards when directing his/her ship (our body is a “ship”). Reversing the order and focusing on oneself is morbid. (The “ship” would capsize). No “motives” apart from actions normally triggered by them are “analyzable”.

The fact that an empirical space abides between a teacher’s and disciple’s minds seems to be obvious. The space must be “dematerialized” or “spiritualized” so as to communicate the immaterial knowledge. As, however, the only immaterial among material objects are relations, the problem of communication adds up to ordering them adequately. This is the task of ethics first of all, but of the use (*usus*) of science too. The same, analogically, must hold true as for communicating thoughts to oneself. For the conditions of our live are material first of all.

The communication we are speaking of is a specifically human phenomenon. Obviously, animals can communicate some information *useful* for their existence. People’s communication differs in that the information can be either useless (e.g. advertisements) or even harmful. The can be so even (or perhaps first of all) for those who communicate it. No animal is able to destroy the natural environment it lives in. Human existence differs in this respect to the extent that some (Eduard von Hartmann) thought that the ultimate end of humanity is auto-destruction.

Animals search for food first of all. Their existence spans among moments when the

nourishment is perceived, grasped, consumed, digested and some energy gained able to reiterate the process anew. Their life unfolds in this rhythm.

Now, the rhythm of the human life is different. The circle of the human existence is either broader or not even closed in the normal sense of the word. The scope of the animal existence is relatively narrow. The scope of the human one is, in fact, infinite. The objects of science are just that: trespassing all material circumstances. Human cognition can bridge the gap among all material objects and reach beyond.

Thus, the effects of the sense perception are different in animals and humans. Hegel tried to account for the difference. The animal desire was absorbed by the objects desired. The human one was held in check; it was reflected. The problem how to understand reflecting has already been addressed in the present book. Simplifications are to be avoided stemming from imagining what can be understood only. Let us, however, enhance one aspect of the problem yet.

The human cognition unfolds – according to Hegel – in the rhythm of *Entäusserung* – *Erinnerung* (exteriorization and interiorization). The first results from that the cognition was “mediated” (*vermittelt*) by material objects. The adequate one, in turn, (Hegel says: “absolute”) had been achieved when the history ended (in 1807) and the awkward status of the material objects abrogated (*aufgehoben*).

The scheme was seized in historical terms. Still, the core of it, and even the very wording, was historically determined. The scheme appears in the early medieval Arab-influenced *Liber de Causis* (*Propositio* 15) in the words: *omnis sciens qui scit essentiam suam, est rediens ad essentiam suam reditione completa* (“A being which is such as to know its own essence returns to it by a complete return”).

In that shape the formula is far from being perspicacious. Thomas provides an interpretation. Everything acts according to its nature, and the natural actions stem from closer principles (*potentiae*; *faculties*). Now, the only way possible to know a principle is to reflect upon the effects it normally triggers. If, in turn, an effect is immaterial (science must be so), the principle must be immaterial also. The most perfect beings (*substances*) (Hegel would call such a substance the “spirit”) return to themselves perfectly. We read in *De veritate*, q. 1 a. 9 c.:

Cuius ratio est, quia illa quae sunt perfectissima in entibus, ut substantiae intellectuales, redeunt ad essentiam suam reditione completa: in hoc enim quod cognoscunt aliquid extra se positum, quodammodo extra se procedunt; secundum vero quod cognoscunt se cognoscere, iam ad se redire incipiunt, quia actus cognitionis est medius inter cognoscentem et cognitum. Sed reditus iste completur secundum quod cognoscunt essentias proprias: unde dicitur in Lib. de causis, quod omnis sciens essentiam suam, est rediens ad essentiam suam reditione completa.

... the most perfect beings, such as, for example, intellectual substances, return to their essence with a complete return: knowing something external to themselves, in a certain sense they go outside of themselves; but by knowing that they know, they are already beginning to return to themselves, because the act of cognition mediates between the knower and the thing known. That return is completed inasmuch as they know their own essences. Hence, it is said

in *The Causes*: “A being which is such as to know its own essence returns to it by a complete return.”²⁸⁴

Now, the difference between the animal and human cognition can be seized just in terms of the reflection and return in question. The circle of the human existence is “rounded up” in a special manner.

Animals get to know the truth. Admittedly, no dog could have been expected to analyze his/her owner’s demands. Albeit the owner occupies the unique place in a pet’s world, his/her relation to this “place” cannot be reflected upon. Animals cannot regard the owners’ actions critically. At best, a person might be denied his/her place in the animal’s world. Their existence is restricted to instinctive actions. The matrix is inborn; its borders cannot be trespassed. Man’s actions can be so, and to the extent the cognition is immanent i.e. reflection accomplished. Human cognition tends naturally to *the transcendent*. Alas, Kant was unable to understand the fact. The energy for the most dynamical activities stems from the deepest in man.

Thomas distinguishes between the purely sensual cognition and the intellectual one in the following words:

Dicendum, quod veritas est in intellectu et in sensu, sed non eodem modo. In intellectu enim est sicut consequens actum intellectus, et sicut cognita per intellectum. Consequitur namque intellectus operationem, secundum quod iudicium intellectus est de re secundum quod est. Cognoscitur autem ab intellectu secundum quod intellectus reflectitur super actum suum, non solum secundum quod cognoscit actum suum sed secundum quod cognoscit proportionem eius ad rem, quae quidem cognosci non potest nisi cognita natura ipsius actus, quae cognosci non potest, nisi natura principii activi cognoscatur, quod est ipse intellectus, in cuius natura est ut rebus conformetur; unde secundum hoc cognoscit veritatem intellectus quod supra se ipsum reflectitur. Sed veritas est in sensu sicut consequens actum eius; dum scilicet iudicium sensus est de re, secundum quod est; sed tamen non est in sensu sicut cognita a sensu: etsi enim sensus vere iudicat de rebus, non tamen cognoscit veritatem, qua vere iudicat: quamvis enim sensus cognoscat se sentire, non tamen cognoscit naturam suam, et per consequens nec naturam sui actus, nec proportionem eius ad res, et ita nec veritatem eius. Cuius ratio est, quia illa quae sunt perfectissima in entibus, ut substantiae intellectuales, redeunt ad essentiam suam reditione completa: in hoc enim quod cognoscunt aliquid extra se positum, quodam modo extra se procedunt; secundum vero quod cognoscunt se cognoscere, iam ad se redire incipiunt, quia actus cognitionis est medius inter cognoscentem et cognitum. Sed reditus iste completur secundum quod cognoscunt essentias proprias: unde dicitur in Lib. de causis, quod omnis sciens essentiam suam, est rediens ad essentiam suam reditione completa. Sensus autem, qui

²⁸⁴ Questiones Disputatae de Veritate, TRUTH by Thomas Aquinas Questions 1-9 translated by Robert W. Mulligan, S.J. Chicago: Henry Regnery Company, 1952

inter cetera est propinquior intellectuali substantiae, redire quidem incipit ad essentiam suam, quia non solum cognoscit sensibile, sed etiam cognoscit se sentire; non tamen completur eius reditio, quia sensus non cognoscit essentiam suam: cuius hanc rationem Avicenna assignat, quia sensus nihil cognoscit nisi per organum corporale. Non est autem possibile ut organum corporale medium cadat inter potentiam sensitivam et se ipsam. Sed potentiae insensibiles nullo modo redeunt super se ipsas, quia non cognoscunt se agere, sicut ignis non cognoscit se calefacere. (De veritate, q. 1 a. 9).

Truth is both in intellect and in sense, but not in the same way. It is in intellect as a consequence of the act of the intellect and as known by the intellect. Truth follows the operation of the intellect inasmuch as it belongs to the intellect to judge about a thing as it is. And truth is known by the intellect in view of the fact that the intellect reflects upon its own act—not merely as knowing its own act, but as knowing the proportion of its act to the thing. Now, this proportion cannot be known without knowing the nature of the act; and the nature of the act cannot be known without knowing the nature of the active principle, that is, the intellect itself, to whose nature it belongs to be conformed to things. Consequently, it is because the intellect reflects upon itself that it knows truth.

Truth is in sense also as a consequence of its act, for sense judges of things as they are. Truth is not in sense, however, as something known by sense; for although sense judges truly about things, it does not know the truth by which it truly judges. Although sense knows that it senses, it does not know its own nature; consequently, it knows neither the nature of its act nor the proportion of this act to things. As a result, it does not know its truth.

The reason for this is that the most perfect beings, such as, for example, intellectual substances, return to their essence with a complete return: knowing something external to themselves, in a certain sense they go outside of themselves; but by knowing that they know, they are already beginning to return to themselves, because the act of cognition mediates between the knower and the thing known. That return is completed inasmuch as they know their own essences. Hence, it is said in *The Causes*: “A being which is such as to know its own essence returns to it by a complete return.”

Since sense is closer to an intellectual substance than other things are, it begins to return to its essence; it not only knows the sensible, but it also knows that it senses. Its return, however, is not complete, since it does not know its own essence. Avicenna²⁸⁵ has given the reason for this by pointing out that the sense knows nothing except through a bodily organ, and a bodily organ cannot be a medium between a sensing power and itself. But powers without any ability to sense cannot return to themselves in any way, for they do not know that they are acting. For example, fire does not know that it is heating.²⁸⁵

Knowing the proportion of one’s concepts to objects makes for the nature (“reason”) of knowing truth. Significantly enough, the opponents of the Thomasian idea of *adaequatio rei et intellectus* (truth is the equation of thought and thing) ignored the fact that the *relation* to things might be known apart from things themselves. Agnosticism was a consequence. The last and desperate endeavor to abrogate the agnosticism was the “absolute philosophy” of Hegel. The endeavor must be called so (futile), as the principles anticipated it. They were laid down by Scotus. We might speak here (after Gilson) about the unity of philosophical experience. The principles (their “virtuality”) are normally known but by their consequences. This is in accordance with the aforementioned order of cognition in general.

But according to Scotus, the order of cognition *mirrors* the order of being. Thus, the

²⁸⁵ Ibid.

former was described in terms of ascension towards what was, later on, by Kant, called the transcendental human perspectives. Gilson observed that there is no essential difference in Scotus between the human and divine cognition. Scotus' metaphysics was subservient to theology in a specific way. The metaphysics was stipulated to be "Christian"; but in fact, the difference between theology and metaphysics had been blurred. Consequently, philosophy was not in a position to be a firm basis for theology. For something indubitable and acceptable by non-theologians and even by those who oppose the Revelation must *precede* it. Scotus denied the absolute validity of the kinetic proof (its certainty). In fact, albeit being theoretical, the proof is certain, although it might be, understood in "existential terms" of *distancing* from the material world (finding a definite relation to it). Now, distancing is only possible if the adequate proportion to the world is known. The theory might be called a distance indeed, but obtaining the theory is existential in a sense.

Scotus philosophy might lead (as it did) to idealism; for Hegel's; idealism was its ultimate consequence. The germ of destruction was present in it from the beginning. Instead of finding the proper place in (or towards) the material world, some tried to create an "intentional" Elysium, just by thinking it out.

According to Thomas, judgment (not, as some claim, the concept of being) can be adequate only and this by virtue of species intelligibilis, which mediates between a class of things and a word meant to represent them. This regards the origin of each word taken separately. As for *different words*, they could only be adequately juxtaposed by the "is" of the demonstrative syllogism. Some, however, claimed that the same must hold true as for the relation to individual things, and the so called existential judgments were passed at the primitive stage of cognition. The Leibnizian proof of the existence of God from contingentia mundi is based on the theory of existential judgments (present in a rudimentary form in Scotus already). The "is" of existential judgments mirrored the "is" of things.

Contrary to what might appear, the kinetic proof is both more general and more certain. The origin of the "is" of judgments is carefully retraced therein.

In the natural order of cognition, things "are" (*for us*) according to how they e.g. "go, come, live, act, feel" etc.; briefly: how they *move*. They *appear to us* in such a way, and consequently, they *exist in our world* so. But they *exist as such* in the real world only according to how motion terminates in the real being. They *come to existence*, and the fact inspired Aristotle to formulating the kinetic proof. There was something stable in nature (perhaps perpetual species were so). Is the Thomasian First Way any different? Now, it is, in a sense, but not in the sense of his metaphysics being *postulated* existential. If ever, it is existential due to its conclusions. Apart from the fact that they *come* to existence, things, according to Thomas, exist after having been generated too. They *are* in the strong sense of the word. The fact that they are e.g.: red, big, in water, on the earth, in-relation-to, etc. follows upon the *fact* that they *are* first of all (which is not to say: they *are known* to be such). The order cannot be *mirrored* in human cognition. It can only be *retraced*. Being (according to Thomas) circuits all categories, but the transcendental being is not "the adequate object" of the human intellect, as some claim. The intellect only can retrace the fact when judging things in metaphysics (the method was called separation).

The Aristotelian proof happens to be regarded with suspicion, and the First Thomasian Way its sheer copy – foreign to the “genuine” existential metaphysics. Now, Thomas follows Aristotle even if saying more than, which is not to say: the opposite to, Aristotle. The constants of nature are more prominent in Thomas. This “naturalism” is, paradoxically, an heir of the Christian teachings by SS. Gregory and Augustine, according to whom, the world would vanish in the twinkling of an eye were it not for God’s presence sustaining its existence.²⁸⁶ The fact that (according to Aristotle) some beings are necessary is not to the point; for it always might be asked what is the cause of their necessity. Thomas adduces the example of the demonstrative syllogism. Its conclusions are necessary *because of* premises they have been gathered from. Analogically, we could speak of syllogismus operativus when considering *the order* of creation of the world. If the major premise thereof is imparting good in general, the minor one will determine *the mode of imparting*. The latter has been chosen freely, but is definite nonetheless. Things, in turn, we see with our eyes are – so to say – “conclusions” of this syllogism. Scotus thought that what we call “conclusions” here must be absolutely contingent. Either he himself or one of his disciples imputed to Thomas the statement that this (allegedly desirable by the theologian) “contingency” of effects had been guaranteed by the minor premise which was contingent. The claim is nonsensical; for Thomas could not have equaled CONTINGENT to FREE. (People are not free because of acting casually). Be that as it may, not even Scotus denied that something in place of the Thomasian minor premise must be accepted. For if the latter be removed, a sheer emanationism will follow. There is only the “major premise” in Neoplatonism. God “created” because of emanating good. Nay, the subsisting good could cause good only, acting – so to say – *ex officio*. Good could only cause good. The latter statement is not only true; it is *banal*. And responding with a banal to those who try to retrace the paths of God (*vias Domini*) is not to be taken seriously. The most important is to see *the mode* of the creation. This mode is at first unclear to human mind. That is why reasoning in general and the kinetic proof in particular is of importance, and even conditionally necessary for human life. Perhaps the divine cognition might be (with some approximation) described as “intuition”. Thus, the “syllogism” we have been speaking about is (as was mentioned above) not to be taken literally. It is our human mode of understanding God’s simplicity. Naturally, the inverse is unfeasible: no “intuition” or “insight” into what is essential in God’s actions is achievable. The stance of Neoplatonism is untenable.

Apart from that they are so-and-so, things must *be* (without any qualification) first. The “must”, however, poses a special difficulty. Are things necessary or contingent? Most

²⁸⁶ Summa Theologiae I, q. 50 a. 5 arg. 3. Praeterea, secundum Gregorium, omnia in nihilum deciderent, nisi ea manus omnipotentis conservaret. Sed quod in nihilum redigi potest, est corruptibile.

De potentia, q. 5 a. 1 ad 4. Deus autem per se est causa essendi: et ideo non est simile. Unde Augustinus dicit: non enim sicut structuram cum fabricaverit quis abscedit, atque illo cessante et abscedente stat opus eius; ita mundus vel in ictu oculi stare poterit, si ei Deus regimen suum subtraxerit.

probably none is the case. Each one of them is contingent with respect to the First Cause. Still, the Cause works in a definite order, and this order must not be ignored. Although the order (the “minor premise”) is chosen freely, it is rational nonetheless, which provides a firm basis for the necessary proof the existence of God. God can do everything, provided the latter behooves His dignity of the Absolute Truth. No “intuition” or “insight” can replace (in the *natural order* of cognition) the way we get to know *vias Domini* (the pathways of God). Things are conditionally necessary; there is finality, there is *intentio naturae* in them.

The term of *intentio naturae* stems from Aristotle, but gains in Thomas – so to say – an existential meaning. What does it mean TO BE? No doubt, no particular thing is necessary, but on the other hand, only particulars exist in reality. Does, then, metaphysics (the science of the necessary) consider the reality? Now, each particular being *intends being* and out of necessity so. The intention is necessary (TO INTEND BEING is TO BE in a sense); although *its effects* are not. The intention is thwarted in the moment of death, but it persists throughout the whole life. Naturally, the apperception of death (its “intuition” underpinning Heidegger’s philosophy) is unworkable. If a thing is *something*, it tends necessarily to being.²⁸⁷ Unhappily, Scotus separated those two notions: things were something in God’s intellect before existing actually due to the free act of His Will.

The stance is vitiated; for essences cannot *be* apart from *being actually* (the “objective” or “intentional” being is nothing). Moreover (contemporarily), the existential

287

Summa Theologiae, Question 49. The cause of evil; Article 2. Whether the supreme good, God, is the cause of evil? On the contrary, Augustine says (QQ. 83, qu. 21), that, “God is not the author of evil because He is not the cause of tending to not-being.”

I answer that, As appears from what was said (Article 1), the evil which consists in the defect of action is always caused by the defect of the agent. But in God there is no defect, but the highest perfection, as was shown above (I:4:1). Hence, the evil which consists in defect of action, or which is caused by defect of the agent, is not reduced to God as to its cause.

But the evil which consists in the corruption of some things is reduced to God as the cause. And this appears as regards both natural things and voluntary things. For it was said (Article 1) that some agent inasmuch as it produces by its power a form to which follows corruption and defect, causes by its power that corruption and defect. But it is manifest that the form which God chiefly intends in things created is the good of the order of the universe. Now, the order of the universe requires, as was said above (I:22:2 ad 2; I:48:2), that there should be some things that can, and do sometimes, fail. And thus God, by causing in things the good of the order of the universe, consequently and as it were by accident, causes the corruptions of things, according to 1 Samuel 2:6: “The Lord killeth and maketh alive.” But when we read that “God hath not made death” (Wisdom 1:13), the sense is that God does not will death for its own sake. Nevertheless the order of justice belongs to the order of the universe; and this requires that penalty should be dealt out to sinners. And so God is the author of the evil which is penalty, but not of the evil which is fault, by reason of what is said above.

The Summa Theologiae of St. Thomas Aquinas Second and Revised Edition, 1920

Literally translated by Fathers of the English Dominican Province

<http://www.newadvent.org/summa/>

counterpart of that “being” has been appreciated and contrasted to the neutral, “objective” *an-sich-sein*; *être-en-soi*. Philosophically, ideas in God’s intellect are not different (not even formally so, as Scotus stipulated) to His Will and Essence. But it is only in the light of the Revelation that the factuality of things gains an exceptional importance, according to: *Quod factum est in Eo vita erat.*²⁸⁸

The Scotian “cascade” creation is impossible. God creates the whole being, albeit we get to know things abstractedly first and according to *what* they are (to their essences). In metaphysics, however, a full and adequate cognition of things is obtained and the judgment called separation determines the position of a nature (known abstractedly first) in the fabric of the universe.

Metaphysics is wrought by the natural intellect. Rationalism is not so. A rationalist would say:

... the nature of God ... is immense, incomprehensible, and infinite, I have no longer any difficulty in discerning that there is an infinity of things in his power whose causes transcend the grasp of my mind: and this consideration alone is sufficient to convince me, that the whole class of final causes is of no avail in physical or natural things; for it appears to me that I cannot, without exposing myself to the charge of temerity, seek to discover the impenetrable ends of Deity.²⁸⁹

The validity of the kinetic proof is founded upon that intention of nature coincides with God’s intention to some extent.

The difference between *esse* and *essentia* (pivotal for Thomas) might be inferred from what was said above. The problem was implied by Averroes when it was asked whether movement is different from its source and terminus *really*. For both the source and the terminus of movement are as definable as any essence is. They are *something*. Now, is their *esse* (*moveri*; being moved) its mode or superadded to it? According to Thomas, neither is the case. Both movement (*being-so*) and *esse* (*being as such*) is elicited from the principles of an object and the cause operating on it. Now, if Aristotle defines nature as the principle of motion and rest, the *esse* might be, in turn, conceived in terms of resting in essence. Things not only come to existence; they exist for some time too. Their life is neither “continent” nor

²⁸⁸ S. Thomas, In Joannis Evangelium, c. 1, lect. 2, no 90; 91.

²⁸⁹ Rene Descartes, Meditations on First Philosophy, (IV, 6) translated by John Veitch (1901)

<http://www.classicallibrary.org/descartes/meditations/>

Cùm enim jam sciam naturam meam esse valde infirmam & limitatam, Dei autem naturam esse immensam, incomprehensibilem, infinitam, ex hoc satis etiam scio innumerabilia illum posse quorum causas ignorem; atque ob hanc unicam rationem totum illud causarum genus, quod a fine peti solet, in rebus Physicis nullum usum habere existimo; non enim absque temeritate me puto posse investigare fines Dei.

<http://www.thelatinlibrary.com/des.html>

necessary; it is conditionally necessary and continent with respect to its First Cause only, Who, however, works in a definite order. There is law and justice to be found in nature. Things exist according to how they intend to. Their existence is intended first of all. The Third Thomasian Way departs from what exists necessarily. No such a proof would be possible if things had been “continent” or “necessary” tout court.

The permanence and stability of human cognition and knowledge issue from that humans (contrary to animals) get to know the ultimate terminus of *intentio naturae*. Motion can eventually only terminate in the stable existence. The fact can be known theoretically only as it implies a distance toward (a judgment on) what undergoes motion.

No such a judgment is feasible for animals. Their cognition is “engaged”; “absorbed” by objects. The possibility to domesticate them and manipulate them too, issues from that their cognition cannot be disengaged; their emotions are “authentic” to the degree their actions are possibly necessitated from without. The human cognition, to the contrary, engenders freedom and being independent. It can be purely theoretical.

The judgment can only mirror the stability of things. This order is absolutely stable and this accounts for the possibly to retrace its Cause. Particular things, on the other hand, are only relatively stable. Albeit they exist for some time (the more perfect live so), they are liable to destruction after all. But there is something necessary in their existence nevertheless. Although being eventually (with respect to the Ultimate Cause) contingent, all things *intend their existence out of necessity*. This conditional (final) necessity is a premise for the absolutely necessary proof of the existence of God.

Physical systems are stable as far as definable by some potential well. A gun-bullet cannot leave the earth, as it has no enough kinetic energy to counterbalance the potential energy of the system formed by the earth and the bullet. Still, some amount of energy could make it possible if the bullet were shot like a racket. In nature, it are perhaps only black holes that preclude such a possibility, but they themselves exist, most probably, for some time only.

Now, the human intellect has a unique potential well. There is no energy in nature able to remove the concepts from it. The *use* of concepts happens to be thwarted (by diseases, senility or injuries); but they remain in the intellect immovably and infinitely after all.

A gun-bullet, if shot, returns to the earth surface, but mental concepts do not return to the intellect literally speaking. They are immovable, albeit possibly *imagined* in terms of *Entäusserung* – *Erinnerung* (exteriorization and interiorization).

The stability of human existence consists in that human activities can issue from an immovable principle. The paradigmatic ones (the communication) imply certitude. Both the stability of the social structure and the authenticity of personal existence are founded upon the fact. Communication is iconic for human activities, for all values must be communicable in the sense of being founded upon firm foundations. The social structure depends upon the naturally known laws. The positive law must be secondary to the natural one.

In the era of postmodernism, both certitude and the stability of truth happens to be questioned and along with the unshakable value of knowledge. The foundations of Civilization, to the contrary, were laid down in the epoch when Universities were founded.

Let us return to the starting point of these considerations. The effect of the sensual

perception (the one specific for humans) is stable. The reasoning that issues *might be* stable too. The effects of miscarried principles are casual. The effects of the genuine ones *can be* valuable. They can *be used* so. In fact, even declared relativists use them. The statement “everything is relative” is pretended to be *universally valid*. Aristotle pointed out to the fact when discussing the problem of variabilism. The “proof” of certitude called ἔλεγχος is an experiment meant to demonstrate the genuine foundations of human understanding and existence. The *actual ability* to question everything results from that a firm footing exists able to sustain no matter how debauched ideas. Human existence can be *actually* degraded and to the extent the footing is tried to be removed. The action must prove *eventually* vain, but the victims and suffering inflicted by relativism are real enough.

Signum temporis of our time is the actual impairment of communication. People are becoming, first of all, less and less able *to listen*. In particular, the voice of those handicapped (unborn; terminally ill) happens to be silenced. The victims are those most susceptible. The spectrum of autism can be understood in this context. People are literally deafened by “music”, preposterous twaddle and the noise of artifacts than turn against those who produced them.

The communication makes human existence flourish. There is a communication in nature also and described by Dionysius as mirabilis coniectio rerum. Eventually, people can communicate to what transcends the nature they live in; albeit the natural world they live in satisfies at least the need for harmony; for it can be called the order (the cosmos) first of all.

5. The cosmos

Some modern philosophers (Leibniz, Heidegger, Wittgenstein) would ask the question: “Why is there anything at all?”; “Why is there something rather than nothing?” The “is” was deemed that of actual existence, whereas the *possibility* to exist was imagined to precede it (was taken for granted). The simplest way, in turn, to imagine the very possibility is to substantiate it with numbers, dimensions, etc., which can, subsequently, be related to the real world. As, however, they might be so in many ways, a similar (philosophical) question might be asked: “Whether there is only one world?”; for it would seem that “... it is better for there to be many worlds than one, because many good things are better than a few.” Now, the Christian theologian must answer that:

... whatever things come from God, have relation of order to each other, and to God Himself, as shown above (I:11:3; I:21:1). Hence it must be that all things should belong to one world.²⁹⁰

²⁹⁰ The Summa Theologiæ, Question 47. a. 3, c. (Obj. 2). The Summa Theologiæ of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight.

And the philosopher must observe that:

The very order of things created by God shows the unity of the world. For this world is called one by the unity of order, whereby some things are ordered to others. ...

... those only can assert that many worlds exist who do not acknowledge any ordaining wisdom, but rather believe in chance, as Democritus, who said that this world, besides an infinite number of other worlds, was made from a casual concourse of atoms.²⁹¹

No one can be forced to believe in God; but neither to “believe in chance”. In fact, the Latin text says nothing about a belief (“non posuerunt” is neutral in this respect), but the term is at the proper place in modern atomism: for it was bequeathed to modernity by the Arab Asharites (the medieval atomists). God’s freedom was so absolute that His actions unpredictable. Thus, only those who “believed” in mathematics (the aforementioned philosophers did so) imagined the existence in terms of the existential quantifier $\exists$; as “radically contingent”.

Belief is considerably more than fascination. The ancient Pythagoreans were fascinated with mathematics but were in fact “unbelievers”. Beauty fascinates, and scientific theories can be beautiful indeed. But apart from their actual shape, the cause of them being so might be sought too. The harmony of the universe is perceived before being methodologically reflected upon. Apart (and *before*) the possibility to exist the harmony of the actual world (the “music of spheres”) was perceived. The “music” could be ignored only because heard uninterruptedly. Aristotle adduces (De coelo, II, c. 9, 290b 12) the view (albeit distancing himself from accepting it unreservedly):

From all this it is clear that the theory that the movement of the stars produces a harmony, i. e. that the sounds they make are concordant, in spite of the grace and originality with which it has been stated, is nevertheless untrue. Some thinkers suppose that the motion of bodies of that size must produce a noise, since on our earth the motion of bodies far inferior in size and in speed of movement has that effect. Also, when the sun and the moon, they say, and all the stars, so great in number and in size, are moving with so rapid a motion, how should they not produce a sound immensely great ? Starting from this argument and from the observation that their speeds, as measured by their distances, are in the same ratios as musical concordances, they assert that the sound given forth by the circular movement of the stars is a harmony. Since, however, it appears unaccountable that we should not hear this music, they explain this by saying that the sound is in our ears from the very moment of birth and is thus indistinguishable from its contrary silence, since sound

²⁹¹ Ibid.

and silence are discriminated by mutual contrast. What happens to men, then, is just what happens to coppersmiths, who are so accustomed to the noise of the smithy that it makes no difference to them.²⁹²

The Pythagorean cosmos was a closed system; the ideal one. The notion of unity underpins it. Now, the unity might be deemed “transcendental” (Avicenna, Leibniz, Heidegger, Wittgenstein) to the effect of rendering “the existence” casual in the aforementioned manner. But on the other hand, the unity might be absolutized too and incorporated into the real world, as it was the case in antiquity. Still, Pythagoreans themselves did not put up with the harmony of thinking. They tried to account for causes. No matter how beautiful, all theories might be questioned as for their origin. There was, at the beginning of forming them, an original perception of the beauty of the universe. The world we live in is not dreamt; its objects appear to us in a definite order. One does not need not to be a Christian to acknowledge this obvious fact. One must be a “believer” to ignore it.

In classical physics, a system is called closed in which the potential and kinetic energy exchange completely. The ideal one, in turn, is that isolated from the environment. According both Aristotle and Thomas, no *natural* system might be *absolutely* isolated. The situation is described in *modern* physics as that of the barriers of the system being permeable. For the classical ones are absolutely rigid. The natural barriers, in turn, were called by Thomas *potentiae*: the closer principles of motion.

But on the other hand, systems might be toughly or loosely bound, all depending on the perfection of formal principles that integrate them. The formal principle is variegated according to the extent it dominates over the matter of bodies, which, consequently, appear to be more than just “extensions”: being in fact *substances*. Thus, substance might be “more” or “less” one; which is to say: more or less perfect, according to the formal principle actualizing the matter. The fact that things differ in perfection, and the perfection is to be respected, seems to be obvious, but Aristotle systematizes the notion. Now, should the unity be understood as “transcendental” (in mechanistic philosophy and the set theory), this otherwise apparent fact would be unconceivable.

²⁹² De Caelo, by J. L. Stocks, M.A., D. S. O. Fellow and Tutor of St. John’s College, Oxford at the Clarendon Press, 1922.

According to Descartes, things (and animals too) were “machines”. Consequently, they could be *damaged* but never *hurt* in the normal sense of the word. Normally, people take the difference for granted despite not acting consequently enough after all. Breaching the somatic and emotional integrity is more than e.g. splitting a stone. Descartes opposed the notion; for he thought that:

[14.] The man who makes it his aim to rise to knowledge superior to the common, ought to be ashamed to seek occasions of doubting from the vulgar forms of speech: instead, therefore, of doing this, I shall proceed with the matter in hand, and inquire whether I had a clearer and more perfect perception ²⁹³

The emotional in humans is closely connected with the somatic in them. Moreover, the former is incomparably more susceptible than that of animals. Its equilibrium allows for developing a higher formality; i.e. the spiritual one. The formal in men, however, is not only perfect; it is *perfectible* too; which is to say: good in men can be multiplied; which is the most general ethical imperative. No one is able *to make* people *good* (literally speaking), although the collocation suggests the opposite. The reason is simple: no one can *make* the others at all (create them; shape them); it suffices to *make out good* in them and *boost* it. Only God can create good out of nothing.

But the intellectual in man (if intended; i.e. *willed*; not: *fancied*) is, conversely, able to strengthen the emotional in him/her and to harmonize the individual existence. That is because of determining the relation to material objects as precisely as no animals are able to.

Nevertheless, all systems in general render their own inner energy (the vital one in animals) commensurate to that of the environment. Animals do so when accepting nourishment; breathing, etc. A certain amount of energy must sustain the vital processes. The energy must be pumped into the system so that the potential of living might exist in it. Animals *are* so; they are-in-a-definite-manner. People, however, can (due to the more formal in them; to the intellect) *to-be-more*; for the relation to things (possessing them; to-have-more) is dependent upon the intensity of the personal existence.

The kinetic motion and the displacement of bodies depend upon the amount of energy stored first. Now, human energy is stored immovably in human mind – the knowledge and the moral virtues spur human activities being as radically interiorized as in no other animal. The outer objects can be sensed and imagined by animals. The ones interiorized in human mind can be understood. Eventually, the “nourishment” of the human life is to be sought beyond the material world (and grasped by the intellect).

Apart from asking about the origin and specifics of human cognition, it is reasonable to ask about the origin of man in general. For according to Thomas, actions are secondary to being (*operari sequitur esse*). Thus, the formal in men might be understood as both the formal

²⁹³ Rene Descartes, *Meditations on First Philosophy*, Translated by John Veitch (1901);
MEDITATION II. OF THE NATURE OF THE HUMAN MIND; AND THAT IT IS MORE EASILY
KNOWN THAN THE BODY

principle of *acting* and the formal principle of *being*. Harmony happens to exist in the human mind (men happen to be morally good), but it is only because of the *outer cause* that such a possibility has been opened. Not only actions (directly) but the principles they *naturally* originate from are first harmonized by this Cause.

Producing artifacts might be regarded as harmonizing materials in such a way that they might be able to expend the kinetic energy in a definite manner. The fact is apparent enough at least in the means of transport. The energy of chemical bonds of fuel in cars allows moving them for some distance. It is possible due to that the engine works in the Carnot cycle. Now, the human body is not a thermic engine, contrary to what Descartes imagined. It is not a machine. The difference between the artificial and natural objects (blurred by Descartes) consists in that the former motion is (according to Aristotle) forced upon them, whereas the latter one stems from the inner principle of motion. Colloquially but significantly nonetheless, human acting might appear “artificial”. It is, in fact, because of some “theories” interiorized in the sense of being forced upon, which occasion the compulsory movement. The intellectual in man, on the other hand, is the inner – genuine and natural – principle of motion. It *rests immovably* in man.

The primitive (source) perception of facts is marked by the rest in question. We contemplate the beauty of nature before contemplating theories elaborated upon the cognition of facts. If Pythagoreans spoke of “the music of spheres”, it was because of the perceived harmony of the system of the universe. The esthetical in man (AESTHESIS means PERCEPTION) is the ability to rest in a contemplated object. The vital activity spans between this source perception and its consummation achieved in theoretical or practical (which is to say: ethical) knowledge. Without both the principle and terminus, actions would be compulsory (forced upon).

The Greek term of μουσική denotes not only die holde Kunst. It encompasses all a-practical spheres of human activity. The productive sphere unfolds dynamically only if spurred by the a-practical one. Musical instruments and recordings are produced similarly as other artifacts. But it is terminus (the end) that matters. The end is rest of the mind and this makes for the difference to the actions in which some practical objectives are intended. The rest accounts for the specifics of μουσική.

The problem how to construct a system of some potential is normally illustrated by the idea of “dragging” the elements of a system-to-be from infinity (the imaginary infinite distance). It is impossible to define *mathematically* the potential energy in another manner. An analogous scheme is at work in producing artifacts. Their elements are “dragged” (e.g. imported) so as to make up a composite. The efficacy in integrating those elements is directly proportional to the market value of an artifact; similarly as the distance the elements are dragged from. They are, obviously enough, not infinitely distant, but the more they are so, the more acknowledged the value of integrating them. In the Middle Ages, the problem of the due price was tackled. Now, nothing, theoretically, prevents to determine it if taking into account the material circumstances of producing mentioned above.

But the vivid organisms are different. Artifacts are effects of vivid substances, i.e. humans, and no effect can be more perfect than its cause. If human artifacts are *integrated*, the

human being must be naturally *integral* first; both in respect to natural potencies (the human nature) and the moral stamina enabling acting effectively. The fact might be overlooked no doubt; for it is easier to put up with the phenomenal side of human activity (the human “motion”) and to drop asking for causes.

However, at least two spheres of human activity are not likely to be taken so superficially; firstly, the aforementioned μουσική, which, out of its nature, points out to the principle of motion (which must not be reduced to that of time and distance; for the spatial temporal is incidental for art). The activity spurred by it is dynamical proportionally to how deep the rest found in μουσική. Indeed, the artistic activity is dissimilar the others. It is unique as aiming at obtaining rest in the objects perceived. An image can “be moving”, but by the very fact of being so, it is as ordinary as all the other. The artistic “imagination”, to the contrary, creates the inner tranquility. Paradoxically, the esthetical experience makes for the dynamics of ordinary activities about to come.

Another special realm of physical activity is connected with the natural rest too, to wit, that in which the esthetical experience is intertwined with the activity. The natural in man is naturally fostered in the activity which faces nature itself. Agriculture is a specific human activity really. Farmers are not capitalists. Their workplace is different to a factory. It is a natural object. In it, activity and the rest are interwoven in a unique manner.

The Polish writer, the Nobel-prize winner, Henryk Sienkiewicz, wrote: “... in all human affairs a lie can appear, but the soil is truth. The soil cannot be deceived, and she too cannot so: she gives or not; nothing else ... That is why the soil is loved as truth is; but if loved, it teaches to love also ... The dew falls not only on harvests and meadows, but on the human soul too, and a man becomes better; for if nigh to truth and love, one is nigher to God at the same time”. “All reaches might be deemed fictitious except for the soil”.

Sienkiewicz died in 1916 and in the years to come the Polish countryside changed beyond recognition. Modern ideologies tried to destroy it and succeeded to a degree.

The nature of our home country is the natural environment we learn to name things in and to find our proper place in the world. The Arcady of childhood might appear sometimes to be irretrievably lost. Dispossessed, evicted and expelled from the home country, Joseph Conrad, born to the Polish landowners, tried to find it in his adult life. In the nature untouched by human greed and cunning he tried to find the truth about himself. “Solitude had been his best friend. He wanted some place where he could sit down and be alone. And in his need his thoughts turned to the sea which had given him so much of that congenial solitude”. (“Chance”).

The problem how to find the proper place in the world is more than how to assemble cleverly the material objects we live amongst. Still, once found, the place entices with the prospect of sharing it: with setting up a family. The place natural for the human family can be, in turn, substantiated with a new life.

If ever, the process of natural becoming might be imagined from the side opposite to producing: not things are to be integrated stemming from some distance, but conversely: they can be imagined to “expand” from an imaginary starting point. Thus, Descartes imagined bodies in terms of extension; they were “extended”, albeit not “squeezed” first literally

speaking; they were “*res extensae*”. Descartes failed to notice that things extend proportionally to the amount of energy taken from the natural environment only. The problem is that they were deemed *extensions* instead of *having been extended*; he regarded them statically like inert objects. The human embryo might be imagined to develop from a point so, but the problem is how to understand the human existence adequately nonetheless. *Res extensae* torn off from the natural environment might appear to be “aggregates” or machines. But in fact, the material particles can exist within human body in a definite order only.

Human begetting must be understood accordingly. There are male and female genomes active in it. But the DNA *codes* are but *sings*; and no sign can produce real effects. Unhappily, the difference between *what* things are and *how* they *are named* has been blurred in the modern philosophy. The difference, which is rather obvious: a check can be forged, but no genome can be so.

Apart from being describable with signs, human genomes are something real indeed. They carry some energy with themselves, which signs are unable to. The simplest way to understand their nature is to identify them with traveling waves, carrying a certain amount of energy able to produce real effects. Material circumstances can both foster and hamper the transfer of energy, all depending on whether it is dissipated by them or not. Medications are such like circumstances. The natural in the generation happens to be mediated by them. But the essential in the human generation is the immediate proximity of the genomes; of the wave courses. The superposition of wave courses results in producing a new standing wave; a new organism, which is extended as far as the nodes of a single wave packet are. For not only must the traveling waves superimpose (be coherent); the new standing wave must be extinguished beyond the nodes of the single wave packet (a new body). The nodes are the natural place of the new organism. The somatic proximity of the genomes is, practically, dependent upon the emotional and volitional nighness of those who generate. A new life appears in the place prepared by the strong and upright will of those who are open to it. The place is natural; for the human genomes are coherent in the described sense. It is prepared by nature. But on the other hand, the new life can be fostered and harbored by eliminating all exterior factors likely to disturb the proximity of a man and a woman; the human family in which one can originally find his/her own place in the world. Natural actions are naturally commensurate (and the wave courses coherent), but actually, the physical proximity of those who can only cherish the new life happens to be disturbed. All material (secondary) circumstances are likely to separate what should be nigh. Signs are (in one aspect) material indeed. The word of promise and fidelity is a sign, but subordinate to what it intends. Not other signs so. For the most part, they wreak the destruction upon the most precious, authentic and the most human at the same time. The image culture must be just so: disrespecting the most susceptible and most precious in humans.

Artifacts in general are but awkward copies of perfect natural systems. One of the most challenging tasks in technics was to produce a source of coherent waves. Natural objects, on the contrary, are perfectly “coherent” i.e., harmonized. Human artifacts, for the most part, succeed in damaging this harmony only.

The ancient Greeks before Thales (the first philosopher) had imagined the beginning

of the universe similar to human becoming. There was an embryo at the beginning and developing into a perfect organism. Parmenides and Pythagoreans, in turn, imagined the world as a ball hoisted in the void. According to Parmenides, the world (which only exists really) “breathes in” the void (the “nothingness”). Now, should bodies be imagined as extensions, this “breathing in” will be somehow similar to expanding them into an imaginary void. Some believe that before Big Bang, the world was “squeezed to incredibly small” dimensions. Possibly, not even physical constants did exist then.

Besides commanding and unquestionable achievements, science happens to be haunted by the offspring of unbridled imagination. In fact, the more quaint an idea, the more nagging the need to “exteriorize” it so as to alleviate the burden of sustaining it alone with the full awareness of its toxic impact. Once exteriorized, the ideas become “anonymous” and the responsibility for entertaining them hoped to be shifted.

In the genuine science, the notion of the curved space time and the existence of black holes (something out-of-place in the Cartesian imaginary space) contradict such phantasies.

No system can exist “in the void”. A certain amount of energy taken from without is necessary for its existence. The Transcendent Cause can be imagined as the Outer Side, but it is energy, not the place that matters.

The entire world is a macro-system in which micro-systems (substances) exist. The systems, in general, happen to be loosely or toughly bound. Atoms are relatively toughly bound, although for a considerable time they had been imagined to be similar to the Solar System. Now, gravitational forces are much weaker than the Coulomb forces. Those binding nuclei of atoms are incomparably stronger yet.

According to both Aristotle and Thomas, the best in the world is its order. A moral imperative follows: the good of the community is better (Aristotle says: “more divine”) than the good of an individual. Modern personalism enhanced the difference between the individuals and the persons. It seems that the personal existence is based on, and can only thrive in, the ordered system of relations constituting the community. The cause was adduced above. According to Thomas, the order of the universe can be interiorized in human mind.

The stability of the world in general and the human existence in particular depends on the constants (respectively): existing in the world, and known to exist in it. Placed at the border between the material and the immaterial, man is able to subordinate the somatic and the emotional in him/her so as to reach beyond. The dream of auto-creation (harbored by e.g. Sartre) testifies to that man is actually dissatisfied with any restricted form of existence. Still, RESTRICTED is not tantamount to DEFINITE. The latter if known abstractedly opens new possibilities.

The existence spans between the moment of birth and the moment a border line is drawn separating the genuine in our life from the vile; from the faked and pretending. On the other hand, the ultimate (if intended) stimulates our life and inspires what precedes it with the energy animating our actions.

Now, the closer environment we must begin in points out in a direction towards the ultimate already. The faces of our parents (the first material objects babies see) anticipate facing “the Father of the Universe” (Plato). The direction originally given might prove

inaccurate or even downright false. It is extremely difficult to change, but contrary to animals, people can manage after all; the direction in man is not inborn (is not a matrix). Each actual scheme of life can be intellectually redressed. The scheme happens to be deemed impossible to change by those who are either inert or after material profit from manipulating people. But there is always a possibility to retrace the right direction, no matter how perplexed and winding the paths of one's life. Perhaps if crushed by despair, and stripped of conventional pretenses, man is able to face the Ultimate bluntly. If called *de profundis* It is most authentically so. The Revelation promises the call will be heard of.

6. The natural desire

In *De Veritate* 25, 1, c., Thomas distinguishes amongst: *appetitus naturalis*, *sensitivus* and *intellectualis*.

The second one (*appetitus sensitivus*) is readily visible in animals. Some objects are desired by them after having been known first; viz. those whose state of energy corresponds to the proper state of the energy of a living organism. Without an adequate correlation of them both, maintaining the animal existence would be impossible. The scheme of acting is rational; which is not to say: the acting of animals is so. The scheme is *executed*, but *not reflected upon*. Animals do not partake of reason, but the manner they are present in the natural environment is rational nonetheless. The order of the universe is rational and system of correspondence of its parts too. The instinctive actions are the most striking evidence of it. In this sense we must say that: *opus naturae est opus intelligentiae*. (For this reason philosophers say that the work of nature is the work of an intelligence)²⁹⁴.

Appetitus sensitivus happened to be tried to be reduced to the mechanical interaction of what was supposed to constitute the world in general and the animal body in particular. Mechanist stance espoused by Descartes implied treating animals as machines. Thus, not even *appetitus naturalis* would exist, but the interaction of bodies and the first mechanical

²⁹⁴ *Quaestiones Disputatae De potentia Dei* (On the power of God) by Thomas Aquinas translated by the English Dominican Fathers Westminster, Maryland: The Newman Press, 1952, reprint of 1932; Html edition by Joseph Kenny, O.P.

<https://dhspriority.org/thomas/QDdePotentia.htm>

De potentia, q. 1 a. 5 c. Unde oportet quod omni ei quod agit ex necessitate naturae, determinetur finis ab aliquo quod sit intelligens. Propter quod dicitur a philosophis, quod opus naturae est opus intelligentiae. Unde si aliquando aliquod corpus naturale adiungitur alicui intellectui, sicut in homine patet, quantum ad illas actiones quibus intellectus illius finem determinat, obedit natura voluntati, sicut ex motu locali hominis patet: quantum vero ad illas actiones in quibus ei finem non determinat, non obedit, sicut in actu nutrimenti et augmenti.

impulse would account for the motion of the universe. Figuratively speaking, no “attracting” would make for the fact (and diversity) of motion, but conversely – “pushing”. According to Descartes, the first push had been given to the universe by God. Moreover, *appetitus intellectualis* would eventually (for all attempts to guarantee the autonomy of the human soul undertaken by those who followed Descartes) be reduced to the function of brains courses (to mechanic processes occurring in the human brain).

The instinctive actions, however, are hardly understandable in terms of the mechanic interaction of elementary bodies. There is finality in them and inconceivable in terms of mechanic interactions. For the advocates of the mechanist stance, the finality would be deemed a margin and effect of “adjustment”, and blind impulses would act under the surface of what could have but appeared rational and aimed at. Naturally, the advocates of scientism cannot explain whence the insight into the nature of those “impulses” they pretend to have stems.

In *Physics II*, Aristotle addresses the problem of evolutionism and determinism. There is, according to him, no absolute necessity in nature (it cannot be proved), but the final (conditional) one only. For an animal to survive, it is necessary to interact constructively with its environment. Those existing in natural ecosystems act just so; without an imaginary blind impulse to “eliminate” “the weaker” (or to occupy a room at the expense of others). Moreover, and contrary to what evolutionists (e.g. Empedocles) say, chance does not prevail over finality, and consequently, the adaptation of an organism is prior to chance (which results in destroying it). There is a margin of uncertainty in nature called chance, but evolutionism is a bottom-up notion of what is natural in the world we see with our own eyes. In it, the finality dominates over the uncertainty. According to Aristotle, “God and Nature does nothing in vain”.

Thus, not so much “elementary particles” (their actions) are able to elucidate those more complex systems, but conversely: *appetitus naturalis* is readily visible in *appetitus sensitivus* as far as elementary particles are assimilated by animals so that they might constitute part of their bodies. The phenomenon of life contradicts simplifications not in the sense of demonstrating them to be wrong. What we see in it cannot be in its rough form (as was said above) used as a scientific argument. Life is not easily analyzable, albeit naturally admirable. The explication of the phenomenon is a challenge and scarcely any are willing to take it up.

If ever, chance and acting at random is visible in human actions first. The idea of evolutionism stems from the rash extrapolation of some humans affairs onto the cosmic dimensions. For the most part, people follow the irrational in them indeed, and even the animal part of their actions is not as perfectly guided by instincts as animals are. No animal can be cruel or inspired by hatred; unless, perchance, imitating inaptly men it lives amongst. According to Sartre, the average and the ordinary cannot define man. Such like existence would be “unauthentic”. There was some good reason to entertain the claim. Still, the problem is how to define man after all, at least for the sake of forming “existentially” important statements – universally valid.

Existence was deemed indefinable, albeit appreciable. Now, it seems to be impossible

to attach any value to what cannot be understood. Thus, we return to the problem how to understand being in general and the human being in particular.

According to Thomas, all things desire to be and to be integral at the same time. Still, the actual scope of the desire is defined according to how perfect a natural system. Animals desire to be for some time and in some material conditions only. Death is desirable for them and a remedy for suffering and demise of vital forces. Nothing of the sort exists in men. Humans desire to be unconditionally. The very desire, however, might be matched with a debouched idea of being. The irrational in man (a disharmony of his/her actions) accounts for that TO BE MORE happens be perversely understood in terms of extension i.e. living at some else's expense. There was an imaginary Lebensraum to occupy and the "weaker" to be eliminated therefrom. No such a weird idea could have been conceived in an animal's mind. Its natural environment is defined and its existence not to be "expanded". No Lebensraum can be a scene of "struggle for survival". Animals are perfectly satisfied with their own place in the world. True, they can be viewed anthropomorphically (if the similarity to the greedy is meant), but the view is infantile nonetheless. The animal existence is restricted to the definite spatial temporal conditions. The human one is not. That is why TO BE MORE could have been imagined as breaching spatial temporal existence conditions of others.

In fact, TO BE MORE should be understood in terms of intensity only. The imaginary extension can be seized in mechanist terms. The authentic existence cannot be so.

Not expansion but the intensity of life is definitive of man. Contrary to animals, people not only intend some particular good, but good such, i.e. the universal reason of good. By being so (universal) this good is inclusive: not one can be excluded from partaking in/of the common good. Paradoxically, the more who participate in/of it, the more intensely it is participated by each person.

Humans are both rational and social beings. The social in them, however, is boosted by, and secondary to, the rational choice which creates new possibilities and perspectives of self-realization. Appetitus intellectualis aims at good in general; it is rational in the sense of universally valid possibilities being opened by it. There is no rational motive to eliminate anybody from partaking of/in the good identified by reason. Naturally, the bonds of blood, kinship and nationality incline us to share the common good with those living in a closer proximity to us first.

The "flat universe" of scientism is the one in which no stratification of the perfection of being is visible; neither, for that matter, the personal perfection and perfecting desirable. Gleichschaltung (bringing into line) is either implied or stipulated. No difference among appetitus naturalis; appetitus sensitives and appetitus intellectualis is to be made out in it. The scheme might be deemed plain and satisfy the need for simplification of what is complex; but proves to be eventually barren. The idea of "expansion" cherished by evolutionists can satisfy but indiscriminate minds. Now, the lack of the *intellectual* discrimination results in the *actual* discrimination of the marginalized (of those not made out).

The diversity of the forms of life is visible to any unprejudiced eye and desirable to any benevolent one. There is, in particular, an astonishing diversity of the life styles in humans and the rhythms of their lives too. Some are devoted scientists; others appreciate

beauty of nature above all; others – art or something else yet. It seems impossible to find one *univocally* common denominator of all desires (as tried to by utilitarianism). At best, in all of them, an *analogical* tendency to the plenitude of life and being-fully (being absolutely free) can be spotted. People do not strive for Lebensraum first of all; they strive for happiness (and the term is not univocal; the desire is not terminated literally speaking; not terminable in a place). The desire, consequently, is substantiated in various objectives according to how perfectly they are identified by the intellect. In other words: the desire can be more or less rational, all depending on whether the *objective* foundation of the *subjective* desire for good as such has been found. There is the Transcendent Object of the most authentic desire. Humans can identify it. All other beings are unable to recognize it. They cannot recognize the actual principle of their actions, which, consequently, are rational not the sense of being animated by the intellectual principle *in them*, but by the principle actuating them *from without*. In other words: the human recognition of the Ultimate can be right or wrong; can be honest or debauched. No such a liberty exists in animals and all the less in elementary bodies. The rational of the latter (*appetitus naturalis* in them) is pellucid to the effect of being readily analyzable and the rational proof of the existence of the Transcendent Cause being possible. Human desires are less apt to analyzing. The diversity of human life styles (and the variety of life forms in nature in general) *inspires* to searching for the Objective cause of them; but on the other hand, can attract our attention so much that foil the attempts to grasp It in plain terms. Especially, human affairs are far too sophisticated to be readily analyzable.

Albeit excluded from the direct argumentation of the kinetic proof, *appetitus sensitivus* (and *appetitus intellectualis* all the more), when reflected upon is both provoking and challenging for the human intellect. An analogous scheme of acting present in the entire nature can be found, albeit no common denominator of them as devised by scientism. Descartes has proved consistently enough that no *res extensa* (the “body”) can form an organic unity with *res cogitans* (the intellectual in man). Thus, if trying to account for the psycho-somatic integrity of man, *appetitus naturalis* (present in the human body) must be grasped in terms analogous to those describing more complex forms of life. Reductionism poses a threat to these attempts, but even mathematical models, if seized analogically, can profit in illustrating the more complex forms of life.

All bodies act and react. Human emotions are describable in this scheme also. There are those “passive” and “active” in animals, especially in those more perfect ones. According to Thomas:

The passions of the irascible part differ in species from those of the concupiscible faculty. ...

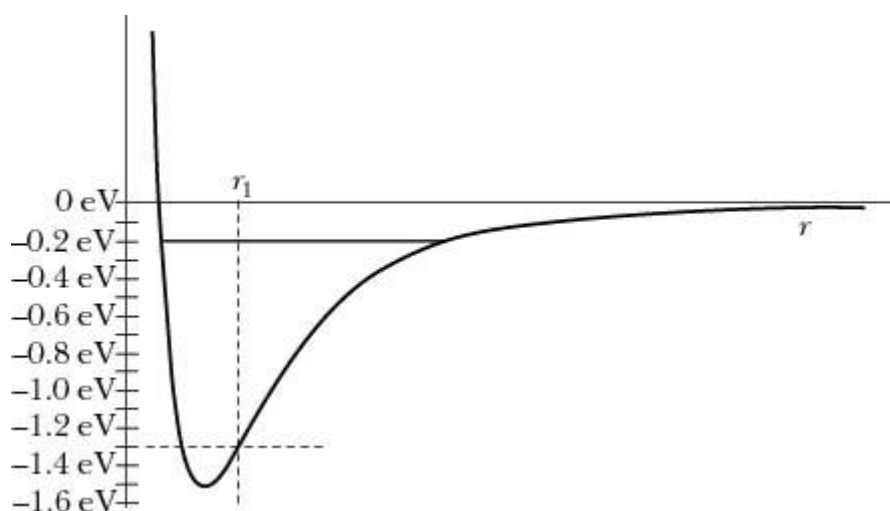
In order ... to discern which passions are in the irascible, and which in the concupiscible, we must take the object of each of these powers. For we have stated in the I:81:2, that the object of the concupiscible power is sensible good or evil, simply apprehended as such, which causes pleasure or pain. But, since the soul must, of necessity, experience difficulty or struggle at times, in acquiring some such good, or in avoiding some such evil, in so far as such good or evil is more than our animal nature can easily acquire or avoid; therefore this very good or evil, inasmuch as it is of an arduous or difficult nature, is the object of the irascible faculty. Therefore whatever passions regard good or evil absolutely, belong to the concupiscible

power; for instance, joy, sorrow, love, hatred, and such like: whereas those passions which regard good or bad as arduous, through being difficult to obtain or avoid, belong to the irascible faculty; such are daring, fear, hope and the like.²⁹⁵

The former are passive; the latter are active. In *De Veritate* 25, 2, c., we read: *primum est quasi per modum receptionis; secundum per modum actionis*. Obviously, it is easier to command e.g. anger than sorrow. Emotions obey reason to different extent. As, however, the specific difference of man (his/her nature) is being rational; both softening emotions and rendering one submissive is contrary to nature.

Thus, emotional in man can be constructively fashioned; can be perfected. The styles of human life and its rhythms too are variegated according to how the formal dominates over the material in them. The variety in nature generally speaking can be illustrated in mathematical terms with some approximation.

There is but one “rhythm” of existence for elementary bodies. “The figure shows a potential energy curve for the interaction of two neutral atoms. The two-atom system is in a vibrational state indicated by the heavy solid horizontal line”²⁹⁶:



“What happens when two hydrogen atoms join together to form an H_2 molecule? As the two atoms approach each other, the electron of each atom begins to feel the attraction of both nuclei. This causes the electron density around each nucleus to shift toward the region between the two atoms. Therefore, as the distance between the nuclei decreases, there is an

²⁹⁵ The *Summa Theologiæ* I-II, Question 23. a. 1, c. The *Summa Theologiæ* of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight.
<http://www.newadvent.org/summa/>

²⁹⁶ <https://www.chegg.com/homework-help/questions-and-answers/figure-shows-potential-energy-curve-interaction-two-neutral-atoms-two-atom-system-vibratio-q3795035>

increase in the probability of finding either electron near either nucleus. In effect, then, each of the hydrogen atoms in this H_2 molecule now has a share of two electrons.

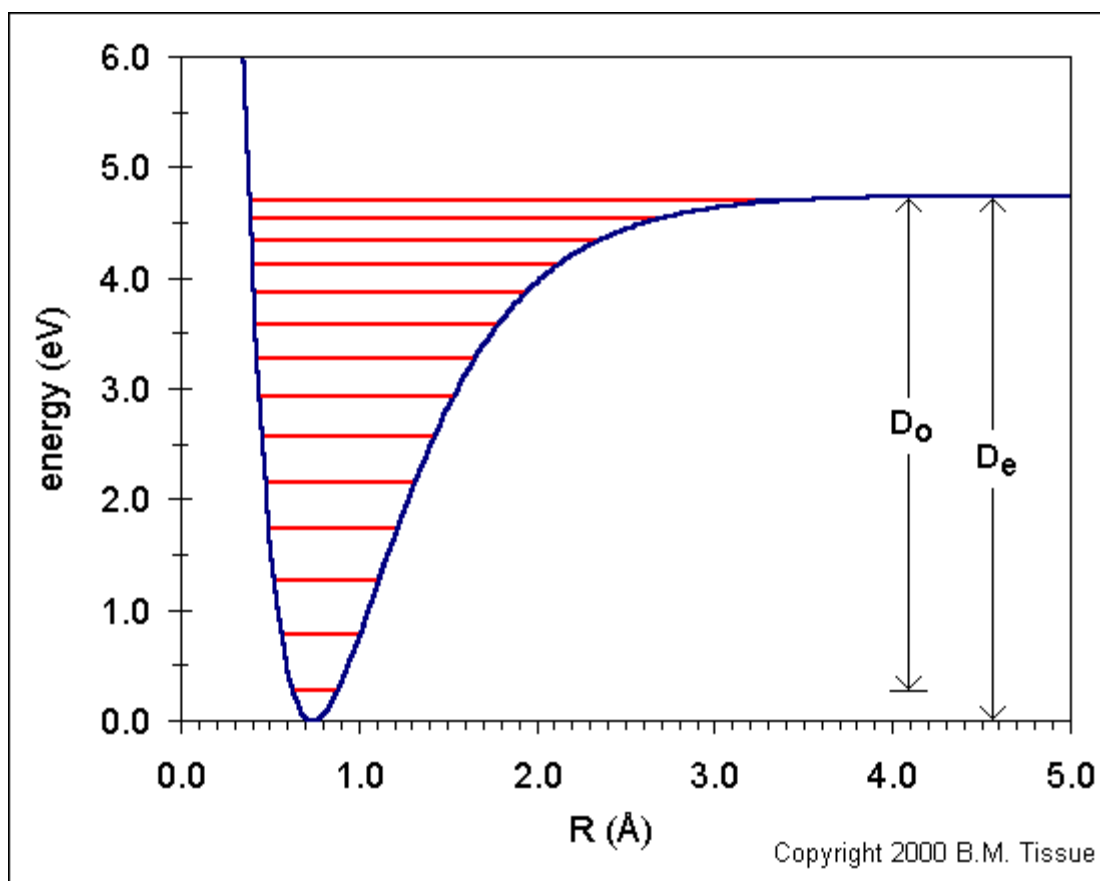
When the electron density shifts to the region between the two hydrogen atoms, it attracts each of the nuclei and pulls them together. Being of the same charge, however, the two nuclei also repel each other, as do the two electrons. In the molecule that forms, therefore, the atoms are held at a distance at which these attractions and repulsions are balanced. Overall, the nuclei are kept from separating, and the net force of attraction produced by the sharing of the pair of electrons is called a covalent bond".²⁹⁷

There is also a possibility to disintegrate the system if the energy is pumped in greater than that of the molecular bonds.

Two atoms that can form a bond will do so to create a diatomic molecule when they approach each other closely. This situation is possible provided the potential energy of the product is lower than that of the reactants. We describe the energy minimum with a potential energy curve, called a potential well. The potential energy, $V(R)$, of a diatomic molecule can be described by the Morse potential. The following figure shows the ground state potential well of the H_2 molecule.

The curve is calculated from the Morse potential and the energy levels are calculated using the harmonic oscillator model with the first anharmonic correction.

²⁹⁷ Electron Sharing; <http://www2.ucdsb.on.ca/tiss/stretton/CHEM2/arch04.htm>



D_0 is the dissociation energy, which is slightly different from the well depth, D_e . The vibrational energy levels in this plot are calculated using the harmonic oscillator model.²⁹⁸

In chemical compounds *the entropy* of the bound system rises. *In the living ones, the opposite is the case: things are variegated according to the amount of energy constitutive of them.*

Thus, in the more complex harmonic oscillators, there are different potential wells and the intensity of being (the energy) is measured by the ability to abandon the lower level of energy so as to ascend a higher one.

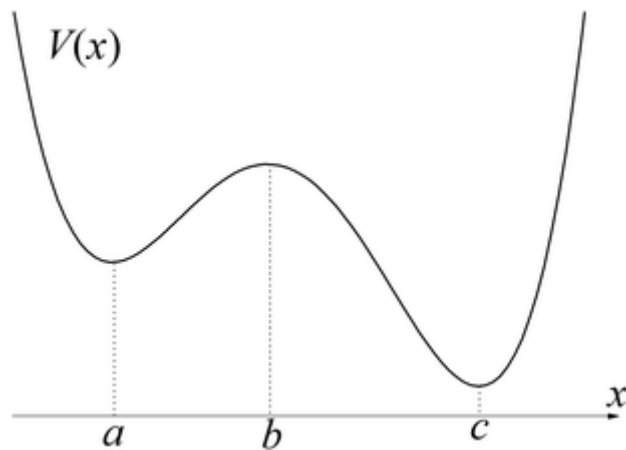
It can be illustrated with the following plot:²⁹⁹

²⁹⁸ What is the Morse Potential?

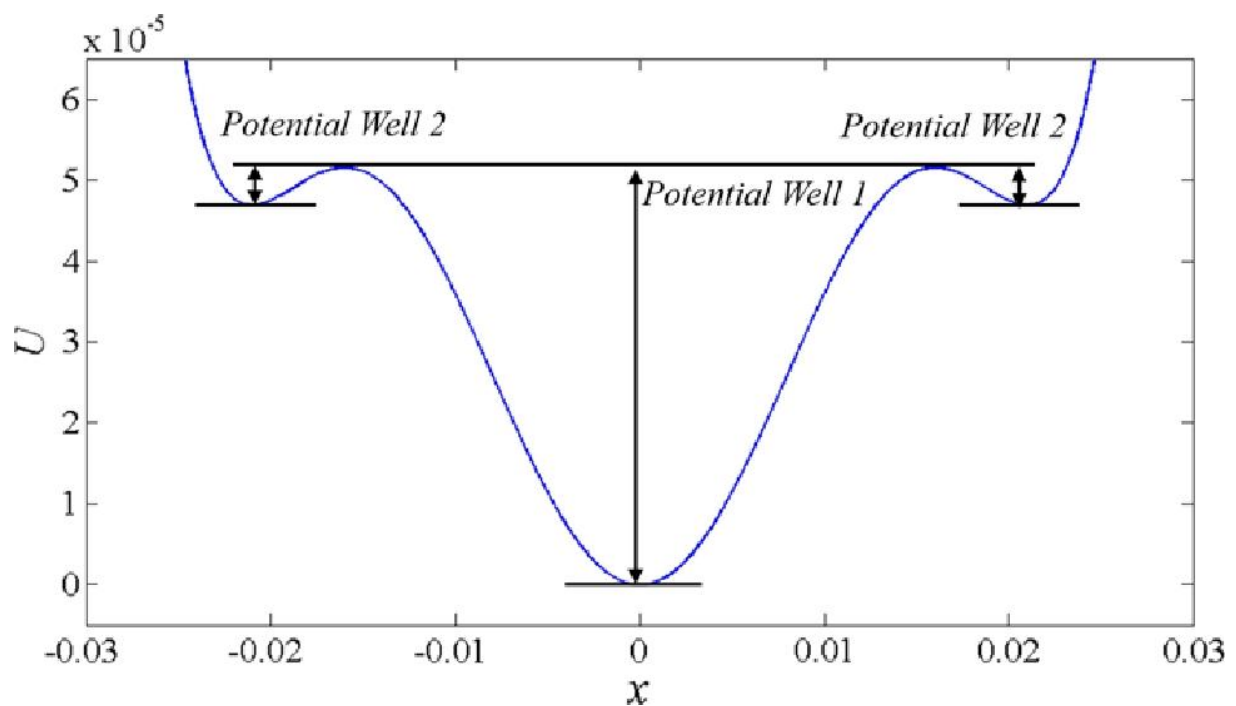
https://www.chemicool.com/definition/morse_potential.html

²⁹⁹

<https://www.google.com/url?sa=i&source=images&cd=&ved=2ahUKEwi2mcDq5bXhAhWttYsKHWcwAGIQjRx6BAgBEAQ&url=http%3A%2F%2Flink.rsc.org%2F%3FDOI%3Dc5cp02060c&psig=AOvVaw3d0UrzGU4FX1zSNANc2GNf&ust=1554444808667661>



Or thus:³⁰⁰



The intensity of being in general, and intensity of life of the most complex system to be found in the material universe (human being) in particular, is directly proportional to the ability to ascend towards the Transcendent Cause of the energy of the universe.

300

<https://www.google.com/url?sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjKrJXS5rXhAhUSmYsKHUjyB98QjRx6BAGBEAQ&url=https%3A%2F%2Fwww.degruyter.com%2Fview%2Fj%2Fteme.2018.85.issue-9%2Fteme-2017-0076%2Fteme-2017-0076.xml&psig=AOvVaw3d0UrzGU4FX1zSNAnc2GNf&ust=1554444808667661>

7. The barrier of potential

The minor premise of the kinetic proof reads: “whatever is in motion is put in motion by another”³⁰¹. The “otherness”; the existence of natural borders amongst objects had been assumed. The objects are the substrata of motion of the kinetic proof or the substances of the Second Thomasian Way.

Albeit the problem of differentiating amongst objects (and the problem of existence of a chain of effects retraceable up to its Source) has already been profusely addressed, it deserves to be tackled from another point of view yet. There are no neat borders amongst the objects of classical mechanists, and setting them down is but a matter of convenience. Moreover, the problem of what is *amongst* objects really, coincides (at least in same respect) with that of what is *between* our mind and the material world.

The coincidence was made out by Kant precisely enough. If the so called *Anschauung* (original intuition) had been prerequisite for human cognition of the world, then no chain of objects would have been retraceable in the aforementioned way (*Critique*, A 609; B 637; A 620; B 638). But on the other hand, the *Anschauung* was unable to identify objects radically foreign to it; the “mind” “commanded” objects instead of identifying them (*Introduction to the Second Edition of Critique*). Now, the problem is whether the objects forming our *Lebenswelt* are phenomenal as Kant believed them to be or not. The problem is whether the identity (and diversity first) of nature objects can be thought of; or else: whether the objects thought of remain as natural as human environment should be.

Kantianism was devised as the philosophy of science. Paradoxically, however, its worth proved problematic for science (in the 20th century), as some objects of it could not be “intuited” as Kant stipulated. In particular, the discovery of quantum tunneling shattered the foundations of the “human world” created by Kant.

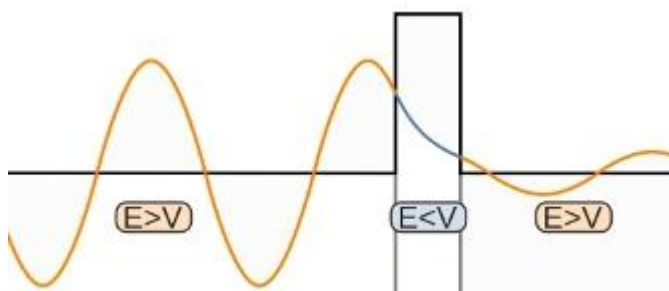
The quantum tunneling effect is a quantum phenomenon which occurs when particles move through a barrier that, according to the theories of classical physics, should be impossible to move through. The barrier may be a physically impassable medium, such as an insulator or a vacuum, or a region of high potential energy.

In classical mechanics, when a particle has insufficient energy, it would not be able to overcome a potential barrier. In the quantum world, however, particles can often behave like waves. On encountering a barrier, a quantum wave will not end abruptly; rather, its amplitude will decrease exponentially.³⁰²

³⁰¹ The *Summa Theologiæ*, Question 2. a. 3, c. The *Summa Theologiæ* of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight.

<http://www.newadvent.org/summa/>

³⁰² An Introduction to Quantum Tunneling



The values measurable with instruments are vector magnitudes proportionate to the acceleration of a barrier in the direction perpendicular to that of the propagation of a wave. The existence of the barrier makes for the loss of energy. Nonetheless, the state of the inner energy of an object is, at least theoretically, adequately retraceable through the wave passing the barrier. In it only, the amplitude of oscillations wanes exponentially. Forces are measurable only due to the fact. Hence, the Newtonian Mechanics is that of the barriers. It does not take into account *directly* the wave courses *preceding* and *following* the acceleration of the barrier. The wave function $\pi x/\lambda$, on the other hand, determines the properties of the wave (eigenfunction) in classical terms.

The very measuring consists in “shifting” an apparatus into a barrier. Senses must be different in this respect. They are no barriers, albeit sense organs are (if viewed phenomenally) similar to measuring apparatuses. The classical mechanics, on the part of nature, faces a border case of the cyclic processes of nature. But on the other hand, classical mechanics, if advancing towards the generalization of ideas (theoretical models) must stumble upon the non-phenomenal in nature. The wave function $\pi x/\lambda$ determines the position of the nodes of the standing wave. Still, the position need not be understood as the proper place of a body, unless deprived of the notion of a value changing monotonically.

The presence of a barrier is connected with the materiality of objects. Photons, on the other hand, are immaterial (have no mass); their energy can only be dissipated by material objects. Without stumbling upon any, the phase velocity of a wave equals its group velocity. In case it stumbles, the former will exceed the latter. The product of them both, however, is constant and equals c^2 .

There is no energy corresponding to the phase velocity. In the ionosphere, it exceeds the speed of light, but the special theory of relativity is not violated. The phase velocity does not carry the energy. The oscillations are fast in the sense of being disordered only.

In all material objects, the phase velocity of the wave which might represent them makes for the materiality of bodies. But on the other hand, if a wave is not dissipated, no

Written by AZoQuantumMay 15 2012

The article updated on the 3rd January 2019.

<https://www.azoquantum.com/Article.aspx?ArticleID=12>

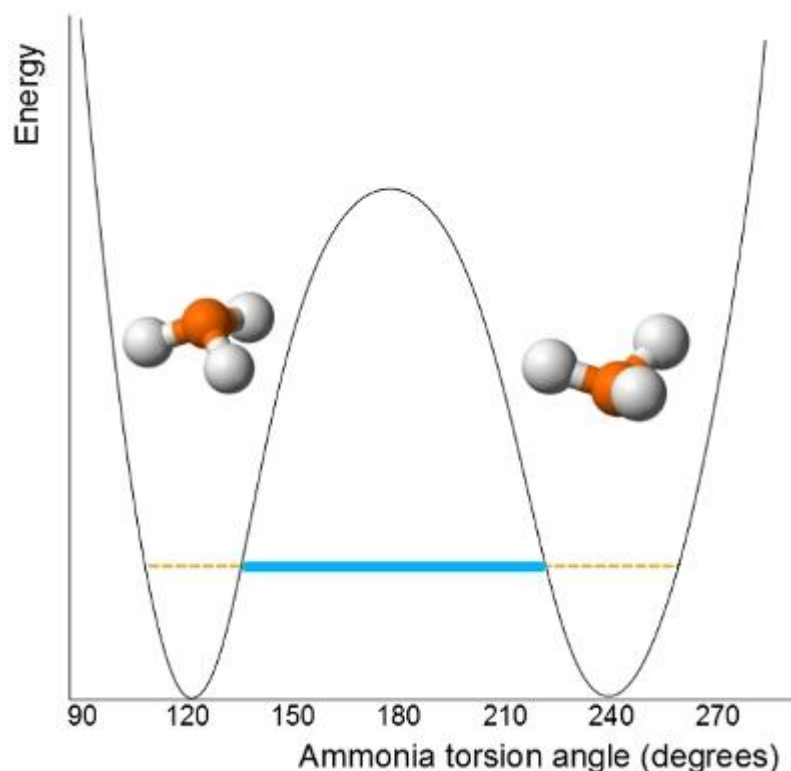
position (and no place) characteristic of bodies can be ascribed to it.

The existence of a body in the natural world is dependent upon some wave courses being superimposed constructively and damped besides the nodes of just on wave packet. Thus, the natural borders of beings appear; the ones through which bodies communicate with each other (act on each other). The fact would be unconceivable, if the idea of the monads without windows (Leibnitz) underpinned the notion of bodies. Mathematical abstracts might be useful to some extent in classical mechanics (i.e. *used* in a special way). In it, bodies might be deemed “aggregates” with a good approximation. The only problem is, *how good* the approximation. For the natural objects, contrary to those “constructed”, act on each other in a definite order. They cannot be arbitrarily separated as phenomenal objects can. Moreover, the more complex a body, the more variegated the mode of interacting with the environment. In humans, in whom different “channels of communication” (*potentiae naturales*) exist, the natural environment is incomparably more capacious. Some actions of human natural faculties (*potentiae naturales*) are not even restricted to the material environment; they reach beyond it. The intellect and the will form the human environment which transcends the material world.

The classical notion of bodies elaborated by Avicenna and Descartes burdened the modern paradigm to the effect of rendering quantum tunneling almost unconceivable. At best, statistical paradigm is used: the drop in amplitude would correspond to a drop in the probability of finding a particle further beyond barrier. There would a finite probability that some of the particles would tunnel through the barrier.

In two joined ropes *different* as to their linear density, some amount of energy is transmittable through what joins them. Not so in the objects which are by their very nature devised as rigid. This concerns all artificial objects (producible ones). Their nodes are set down arbitrarily and the “shapes”, consequently, distinct enough. The natural nodes of bodies, to the contrary, are set down by nature; not by a producer or experimenter. Neither, for that matter, nature might be deemed an experimenter or demiurge; for it adds up to treating it anthropomorphically. There are no natural magnitudes of phenomenal objects and their energy can grow infinitely. There are, to the contrary, *natural magnitudes* and proper places of the natural objects, as their energy can neither increase nor decrease save within some natural borders (it is periodical). There is a natural place of a body. Existing in it, it interacts with the environment, but the interaction is described in classical physics abstracting from both the source and the natural end. For no inner state of bodies is analyzed in it, nor the nature of what is between the bodies. It was so in quantum mechanics, in which non phenomenal bodies are analyzed.

The possibility of tunneling was first noticed by F. Hund in 1927, while calculating the ground state energy in a “double-well” potential—a system where two separate states of similar energies are separated by a potential barrier. Many molecules, such as ammonia, are examples of this type of system. “Inversion” transitions between two geometric states are forbidden by classical mechanics but are made possible by quantum tunneling.



*The two energetically equivalent states of ammonia, NH_3 , can exchange more readily than is classically predicted - this is because the molecule can tunnel through the potential barrier at lower energies than are required to pass through the transition state.*³⁰³

Now, is what has been described above of any importance for natural objects in general and the human life in particular? Had humans been by nature producers and experimenters, and their nature definable in terms of *using* mathematical models, quantum tunneling would have been but a theoretical problem without any relevance for objects we allegedly live amongst.

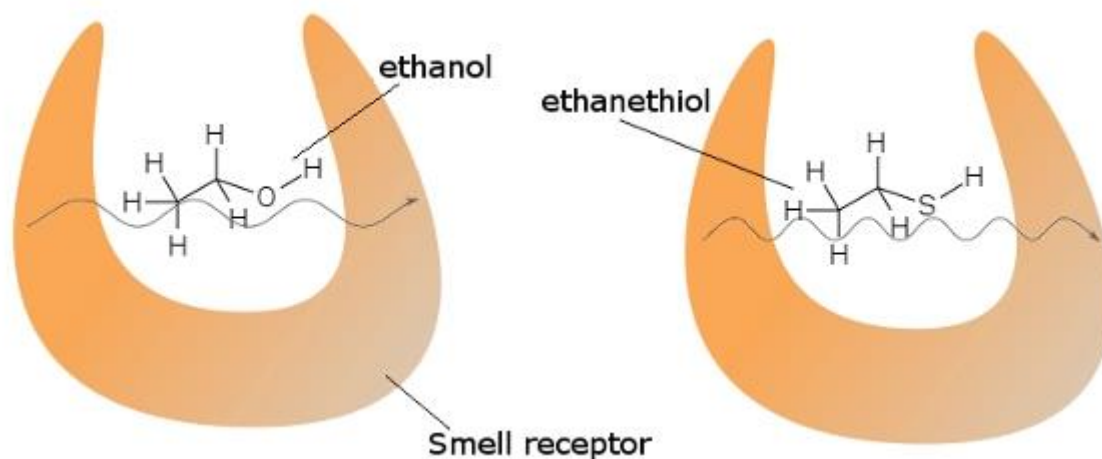
Now, humans are rather definable by the theoretical in them (the most precious in their life); and *usus* present in the life cannot be reduced to *utility*. There are some spheres of human activity, e.g. pure mathematics, in which no using in the sense mentioned above is visible; nor definitive of this type of life. The theoretical life is motivated by the volitional principle. *Usus* typical and definite of man consists in trying to retrace or multiply the rational order of the universe. Man is able to retrace it theoretically, albeit all organisms in general must be discriminative of the order. Life is only possible after discriminating it. Now, “intuition” excludes such a possibility. True, objects have some geometrical outlines, but it is energy that matters for the maintaining the equilibrium between a system and the environment. The natural objects are not phenomenally describable. At the border of the

³⁰³ Ibid.

measurable and unmeasurable new phenomena have been discovered which explain sensing in terms of the transfer of energy; not of “extension”. If animals were “machines” and human bodies too, their sense organs would be machines too. Smell perception has been analyzed to the effect of falsifying such an assumption.

It was initially believed that chemical receptors in the nose (400 different kinds in humans) detected the presence of various chemicals by a lock-and-key process which identified the molecule’s physical shape; however, more recent studies found problems with such theory. For example, ethanol and ethanethiol, which have very similar shapes, smell completely different (ethanol is the alcohol that humans drink, while ethanethiol smells of rotten eggs). This suggests that some other identifying mechanism is at work.

The theory is that smell receptors rely, in part, on quantum tunneling to identify chemicals. The receptors pump a small current across the odorant molecule, causing it to vibrate in a characteristic way. In order for the current to flow, however, the electrons must tunnel through the non-conducting gap between the cells of the receptor and the molecule. New experiments on quantum tunneling utilized large hydrogen and deuterium bonds to facilitate olfactory reactions to stimuli. The results showed increased quantum vibrations, suggesting that humans are capable of differentiating between molecules with quantum vibrational signatures.



*Smell receptors can detect the differences between similarly-shaped molecules by tunneling a small current across them, causing a characteristic vibration.*³⁰⁴

This led to several unique applications, primarily for highly precise measurements. Paradoxically, the Cartesian idea of *res extensa* proved eventually barren even in the most sophisticated artifacts.

One can hardly overestimate the importance of the phenomenon in question:

Similar to quantum physics, tunneling may appear to have little relevance to everyday life but, it is a fundamental process of nature which is responsible for many things on which life itself is dependent. It has even been hypothesized that the very beginning of the universe was caused by a tunneling event, allowing the universe to pass from a “state of no geometry” (no space or

³⁰⁴ Ibid.

time) to a state in which space, time, matter, and life could exist (Tunneling in Stellar Fusion).³⁰⁵

8. The asymmetry of nature

The asymmetry is one of the most astonishing features of nature. Its existence was made out in physics, but no definite explanation thereof has been provided. The fact, really, is hardly understandable in terms of the mechanist stance.

There is a perfect symmetry postulated in the objects the Third Newtonian Law speaks of. Acting equals reacting in *idealized* objects indeed. However, there are no such objects existing in nature. In it, the acting is always a cause and the acted upon – its effect. The relation is unilateral; for some amount of energy must be dissipated in natural interactions.

There is, as was mentioned above, a difference between how material objects are moved and how our imagination is “moved” by what is perceived. An image “reflects” an object (which is not to say: mirrors), and the mathematical ideas seem to reflect *some* objects perfectly. Now, the essential in *knowing* things is completely different to being *impressed* by them. To know is to “reflect” upon the relation inherent in the “atomic” fact: the primitively given are relatives coupled in such a way that only the intellect can extricate peremptorily the nature of the relation. The reductive analysis of the originally given accomplished by Aristotle was incomparably more challenging a task than eidetic reduction postulated by Husserl. The primitively given is not “eidos” (an essence) but relatives of motion (the moving and the moved). The Husserlian essences are sheer copies of the items drawn from a dictionary (e.g. the notorious “redness”). The relatives of motion Aristotle speaks of are the real causes of forming any language whatsoever. For all verbs and nouns describe some special kinds of motion.

No isolated object can be a cause; for the notion is oxymoronic: being a cause is tantamount to being directed to its effect. The latter, consequently, is not only mechanically acted upon but its form-to-be must be intended by the agent. According to John Steward Mill: “if two or more instances of the phenomenon under investigation have only one circumstance in common, the circumstance in which alone all the instances agree, is the cause (or effect) of the given phenomenon”. Now, the “circumstances” cannot be severed in the way Mill believed to be paradigmatic for science. The acting (the moving) intends an end; and the matter is for the sake of form, analogically. It is impossible to gain any knowledge without a primitive direction of discovery having been, as it were, hinted by nature itself. Should objects be isolated first so as to be known subsequently, a trivial $A \equiv A$ would underpin such a “knowledge”. Now, the relation of the moving and the moved is far from being trivial.

Practically, all scientists avail themselves of the idea of cause. An experimenter must be a cause in a sense. The coordination of objects precedes the results expected in

³⁰⁵ Ibid.

experimenting. The boundary conditions are set down in such a way that Kant believed the human reason to be a demiurge; for arraying objects seems to be wrought by an artificer. The scheme had proved barren nevertheless as soon as the practical had to be dropped for the sake of knowing non phenomenal objects. In them, a natural order (not devised by man) exists. It must be retraced in the philosophy of nature.

The space mathematics speaks of might be considered as isotropic as satisfying the requirements of the Kantian Anschauung (and some intuition of it would be possible). There is no privileged direction in the Cartesian Coordinates indeed. But in nature, the space is not isotropic, for all we know.

Some amount of energy in nature must be irretrievably lost (dissipated) and maintaining the status quo requires the energy being restored. Otherwise the entropy of the system would grow. In nature, the energy of the moving is proportionate to the frequency of the wave associated with it (the acting particles might be regarded as waves). The wave course in an effect, in turn, is disordered in such a way that the phase velocity of the wave in it exceeds the speed of light. No energy can be carried by such a wave.

The Third Newtonian Law is of restricted validity. It can only observe in phenomenological objects. The existence of God (as Husserl has it) must be “bracketed” in such a world. The causal relations, to the contrary, existing in the natural world give the sufficient basis for the proof of the existence of God; for not an idealized world is meant. In it, a direction beyond it is at least hinted and the conviction as to the existence of the Supreme Cause commonly cherished (according to Thomas) by all men, unless they are “civilized” in such way that decoyed into taking the phenomenological for the natural.

One can fall prey of an illusion that the phenomenological could form the human Lebenswelt. Ascending towards the Transcendent Cause would be impossible in it indeed. Kant was right in assuming that it is impossible to find this Cause in the “world of phenomena” (Critique, A 610; B 638). But he failed to realize that living in the world of phenomena is impossible for man first of all. The world in which God does not exist (is not present) can be thought of, but man *thrown into it* (as Heidegger relishes saying) would be doomed to extinction.

Wave courses in our brain are not “thoughts” unless proportionate to the proper forms; the forms of the intellect. Matter naturally corresponds to form, and effects to the causes accordingly. In positivism, only the matter is taken into account. Some material objects were believed to be endowed with power to trigger effects. Descartes anticipated the notion of the „cause” acting like a mechanical impulse. The “world” created by Kant and positivism is thought of, but not real. In the latter, real things, not the phenomena are ordered, and by nature so, not by a “humane” demiurge. Pivotal here is the very term of thing (RES).

This scholastic term is transcendental (not in the Kantian sense to be sure). It circuits all categories of being. Things are “something” and the SOMETHING must be (at least logically) allotted to all categories; for it is impossible to say anything save by giving it a name. Not even the last category (of relation) is exempted from the rule. Otherwise, the statement beginning with: “relation is ...”, could have never be completed so as make up a definite and closed sentence.

Still, RES is a border notion; for once called “something” things might be considered by particular sciences; which is to say: in some particular aspect. Conversely: besides and beyond those aspects a common denominator might be sought for all kinds of “thingness”. This line of reasoning led to discovering the supreme science in the ancient Greece. In Aristotle, the subject matter thereof (of metaphysics) was substance.

Still, a serious problem arose as to the very category of substance (the first category of being). The problem was, in some way, that of the apparent similarity (pointed out by Thomas) between logics and metaphysics. According to Aristotle, substance is twofold: both individuals can be called so and species the individuals appear in. Naturally, the relation of them both must be settled, and it was tried to by Aristotle. Taking into account the generation of substances (according to Thomas, Aristotle put up with it) the relation of the *first* and *second* substances can be illustrated by the fact of the former coming to existence in the latter. Species are *substantiated* in individuals which can only exist *really*. Intention of nature terminates in individual substances; for the cosmic motion is aimed at generating them. Aristotle defined nature as the principle of both motion and rest. Motion precedes the generation and cannot end save in something stable. An asymmetry exists in the paradigm, although the lapse of time was (must have been), according to Aristotle, interminable after all. Analogically, the motion of phenomena in our imagination is terminated in permanent knowledge. It is analogy only; for particulars are first sensed, whereas science as such is of the universal. To be precise: the particular science is so; for after (and besides) asking about “what” a thing is (its definition) its mode of being might be questioned too. The work of the supreme science (metaphysics) begins thereat. Thus, the problem of RES leads to the philosophical problem of BEING.

Aristotle addressed the problem rejecting Plato’s claim that being was a genus (was SOMETHING). Aristotle tried to vindicate the proper place to the science which cannot put up with thingness of objects. The argumentation, however, must have been not persuasive enough; for Neo-Platonists maintained, a few centuries later, that being is the lowest stratum of reality, and the subsequent forms specified it. In particular, living (*vivere*) was more perfect than just existing, and thinking (*intelligere*) than other modes of being. The Hegelian claim that „Being, the indeterminate immediate, is in fact nothing” was anticipated then. It was imagined that the lowest layer of the world assumed (in the lapse of time) specifications, and the process might be called the transformism (transmutation) of species.

Thomas attempted the same as Aristotle, and perhaps more successfully (beings was judged not conceptualized). Unable to foresee that evolutionism would appear some centuries after his death, Thomas managed to lay down principles sufficient to refute any guise of monism (evolutionism included). According to him, it is not being which assumes determinations; but conversely: being is assumed by each thing tending to existence. There are different forms of things, but a common denominator in regrading them also; for being as such is always intended. As for humans, the fact is obvious that life as such (the plenitude of it too) is good; nay, it is the only genuine good. Although Plato availed himself of the idea of the cosmic artificer, he, nonetheless, saw His very objectives in calling things to existence (not in “experimenting”).

Sympos. 205b ... οἷσθ' ὅτι ποιήσεις ἐστὶ τι πολὺ· ἢ γάρ
 τοι ἐκ τοῦ μὴ ὄντος εἰς τὸ ὄν ἰόντι ὅτ' οὖν αἰτία πᾶσά ἐστι
ποιήσις, ὥστε καὶ αἱ ὑπὸ πάσαις ταῖς τέχναις ἐργασίαι
 ποιήσεις εἰσὶ καὶ οἱ τούτων δημιουργοὶ πάντες ποιηταί.
 ...

All particular modes of acting are specified, but there was a “total acting” preceding them:

205 c4 Ἄλλ' ὅμως, ἢ δ' ἢ, οἷσθ' ὅτι οὐ καλοῦνται ποιηταὶ ἀλλὰ
 ἄλλα ἔχουσιν ὀνόματα, ἀπὸ δὲ πάσης τῆς ποιήσεως ἐν
μόριον ἀφορισθὲν τὸ περὶ τὴν μουσικὴν καὶ τὰ μέτρα τῷ
 τοῦ ὅλου ὀνόματι προσαγορεύεται. ποιήσις γὰρ τοῦτο
μόνον καλεῖται, καὶ οἱ ἔχοντες τοῦτο τὸ μόριον τῆς ποιήσεως
 ποιηταί.

The apparent weakness of the reasoning consists in that the natural way of cognition of the intentional existing in the world was reversed. Artificers act for some ends, but God's acting becomes only visible after retracing the most primitive guises of the finality of nature.

That things *desire to be* is not tantamount to that they are capable of auto-creation. Humans are neither, albeit Sartre believed the opposite. Nothing save a desire for being abides in nature; but the desire is substantiated by the free act of God, Who creates things. Naturally, the act of creation is not the subject matter of metaphysics. It considers only the general tendency towards being. Full asymmetry of nature is visible here.

The same scheme observes *mutatis mutandis* in human cognition. A definite understanding of things comes after their “what-ness” is sealed (Plato's expression quoted above) by a certain mode of existence.

Thus, the problem of the natural rest seems to be solved, and the problem of the asymmetry of nature too. There is an individualized act of existence which rests in a particular thing. Analogically, understanding rests in human mind after reasoning (Maritain underscored the fact). Thomas has provided sufficient premises for rejecting any form of transformism and mythological thinking. Being (and cosmic energy too) assumes discrete values only; the tending towards being terminates in definite forms of it.

The lapse of time cannot be definitive of things. Neither, for that matter, can the worth of work (especially of the intellectual one) depend on the amount of time invested in it. Aristotle must have seen the problem clearly enough, although the idea of the eternity of the world affected to some extent the core of his philosophy. Temporality (*Zeitlichkeit*) cannot define being (*Sein*). Aristotle says that “history is the least philosophical of sciences”. The separate problem was, however, whether he was consequent enough in drawing all conclusions from the principle.

The problem of being cannot be solved in any temporal terms whatsoever, be it eternity or evanescence of things. Things, according to Thomas, are actual and actualized *in* time, but not *by* it. ACTUAL is not tantamount to PRESENT; or else the “present” must have

assumed a special meaning.

The paleontological data, unknown to Aristotle, falsify the eternity of the world, or at least testify to its history. The same data, however, do not falsify the (valid) statement that history cannot define the essence of things. In other words: the history of the world can *illustrate* the subsequent acts of creation, although no special importance need be attached to *imaging* in this way the problem of its existence. There is a harmony in the very history of creation, perhaps similar to that of the Pythagorean spheres. There are diverse “accords” of the history of the world, and the accords constitute the music of spheres. Perhaps the Pythagorean idea is illustrated better by the lapse of time; for a sequence of tones must unfold in time indeed, and the time might be called a history. None of the tones and staves of a masterpiece of music is relevant without relation to the others. No objects can exist isolated from the harmony of the universe. The sequence of time makes the teleological structure *visible*, but not *real*; the integrity of the masterpiece is constituted of all its parts. But a final accord comes eventually when the most perfect material being possibly existing in the world has appeared. After man has appeared in it, the history of the world must have ended definitely.

No separate “accords” of the masterpiece can represent adequately the intention of the Artificer. Neither a “glissando” (transformism) can appear in it. The “accords” are radically distinct.

Thomas’s metaphysics happens to be called that of being, which is true enough. But on the other hand, it cannot be, by the same token, contrasted to that labeled “essentialism” and elaborated by Aristotle. Moreover, the notion of *a* metaphysics, must prove oxymoronic after all; for metaphysics is the most general science. So, no other metaphysics than that of being can exist really, and that wrought by Aristotle was, consequently, such to. The separate problem is whether the labor had been successfully accomplished by Aristotle himself. It is, in particular, the problem of whether the intention of nature was “sealed” in it. The kinetic proof advances along the path of the intention of nature. In Aristotle, a reprise appeared, but the final stave was put down by Thomas.

9. The nature of bodies

In physics a pivotal difference observes:

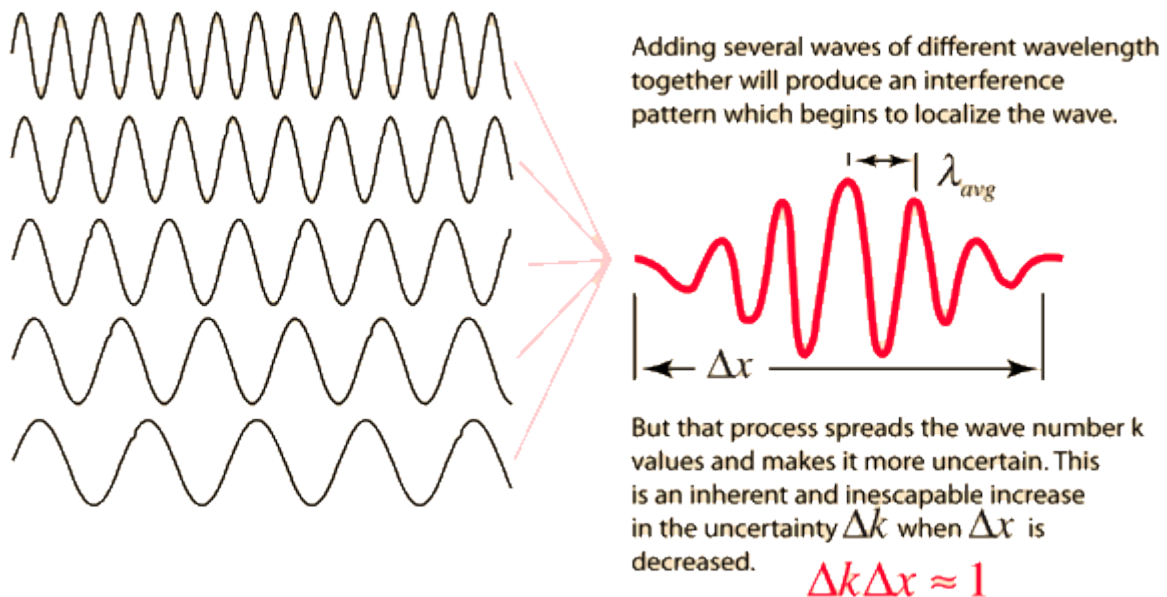
- 1) A DIFFERENTIAL EQUATION is a mathematical equation that relates some function with its derivatives. In applications, the functions usually represent physical quantities, the derivatives represent their rates of change, and the differential equation defines a relationship between the two. Because such relations are extremely common, differential equations play a prominent role in many disciplines ...
In pure mathematics, differential equations are studied from several different perspectives, mostly concerned with their solutions—the set of functions that satisfy the equation. Only the simplest differential equations are solvable by explicit formulas; however, some properties of solutions of a given differential equation may be determined without finding their exact form.

- 2) NON-LINEAR DIFFERENTIAL EQUATIONS are formed by the *products of the unknown function and its derivatives* are allowed and its degree is > 1 . There are very few methods of solving nonlinear differential equations exactly; those that are known typically depend on the equation having particular symmetries. Nonlinear differential equations can exhibit very complicated behavior over extended time intervals, characteristic of chaos. Even the fundamental questions of existence, uniqueness, and extendability of solutions for nonlinear differential equations, and well-posedness of initial and boundary value problems for nonlinear PDEs are hard problems and their resolution in special cases is considered to be a significant advance in the mathematical theory.³⁰⁶

Unlike linear differential equations, with nonlinear differential equations the principle of superposition (which states that linear combination of solutions of equation is again the solution of this equation) does not hold.³⁰⁷

The problem of natural becoming, as was mentioned above, can be illustrated by the mathematical model of the superposition of waves. A new object might appear as a standing wave “created” by two coherent wave courses. Thus, the problem of generation might be considered that of forming “wave packets from discrete waves”:

“If discrete traveling wave solutions to the wave equation are combined, they can be used to create a wave packet which begins to localize the wave. This property of classical waves is mirrored in the quantum mechanical uncertainty principle”.



³⁰⁶ https://en.wikipedia.org/wiki/Differential_equation

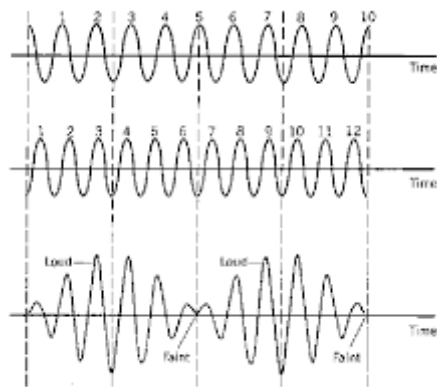
³⁰⁷ [Nebojsa M. Ralevic](https://ieeexplore.ieee.org/document/4342629), Nonlinear Partial Differential Equations and Superposition Principle. <https://ieeexplore.ieee.org/document/4342629>

Graph. 1.³⁰⁸

More generally, the effect of the superposition of two wave courses is a standing wave of the amplitude:

$$y = y_0 \sin(k_1x - \omega_1t) + y_0 \sin(k_2x - \omega_2t);$$

The velocities of the two waves are assumed to be equal. The resulting wave assumes the shape:



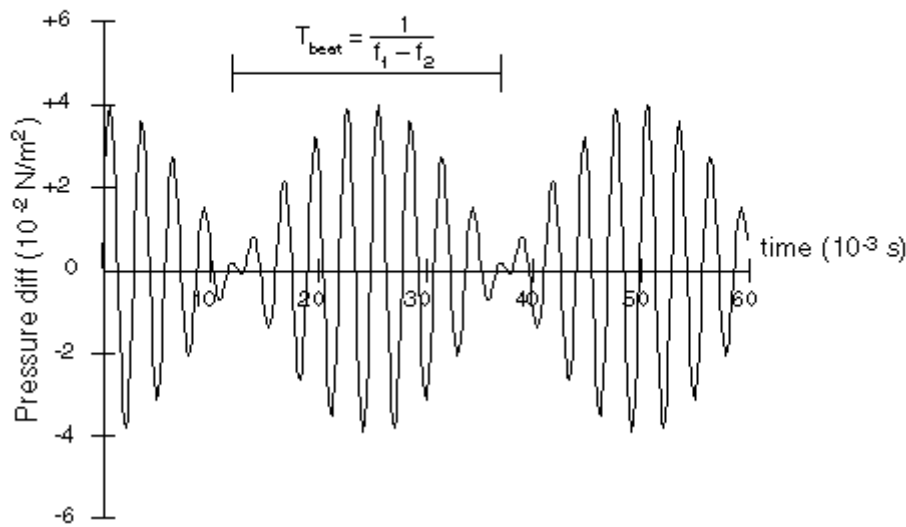
Graph. 2.³⁰⁹

³⁰⁸ <http://hyperphysics.phy-astr.gsu.edu/hbase/Waves/wpack.html>

³⁰⁹

https://www.google.com/imgres?imgurl=http%3A%2F%2Fwww.ionaphysics.org%2Fclassroom%2FAssignments%2FBeatsIntro%2FhowBeatsAreGenerated.gif&imgrefurl=http%3A%2F%2Fwww.ionaphysics.org%2Fclassroom%2FAssignments%2FBeatsIntro%2FbeatsIntro.html&docid=e-Clzabob_sWPM&tbnid=w4OM3qAPbveApM%3A&vet=1&w=751&h=690&bih=969&biw=1920&ved=2ahUKEwipiLHUzMzhAhUS_CoKHebMBxwQxiAoA3oECAEQFw&iact=c&ictx=1

*Superposition of two pure tones
with slightly different frequencies
leads to BEATS*



Graph. 3.³¹⁰

The amplitude of this wave changes sinusoidally according to the difference of original wave frequencies.

For the generation of a single material object, beats must be extinguished in all places except for that about to be occupied by a new body-to-come. The place is determined by what Thomas calls *materia signata dimensionibus*.

Summa Theologiae I, q. 75 a. 4 co. Definitio autem in rebus naturalibus non significat formam tantum, sed formam et materiam. Unde materia est pars speciei in rebus naturalibus, non quidem materia signata, quae est principium individuationis; sed materia communis. Sicut enim de ratione huius hominis est quod sit ex hac anima et his carnibus et his ossibus; ita de ratione hominis est quod sit ex anima et carnibus et ossibus.

... in natural things the definition does not signify the form only, but the form and the matter. Hence in natural things the matter is part of the species; not, indeed, signate matter, which is the principle of individuality; but the common matter. For as it belongs to the notion of this

310

https://www.google.com/url?sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwipiLHUzMzhAhUS_CoKHebMBxwQjRx6BAGBEAQ&url=http%3A%2F%2Fhep.physics.indiana.edu%2F~rickv%2FBeats.html&psig=AOvVaw3TEizz9L9aYmjykgxj_bWn&ust=1555228735329814

particular man to be composed of this soul, of this flesh, and of these bones; so it belongs to the notion of man to be composed of soul, flesh, and bones; for whatever belongs in common to the substance of all the individuals contained under a given species, must belong to the substance of the species³¹¹.

De veritate, q. 2 a. 7 co. Dicendum, quod sicut se habet essentia universalis alicuius speciei ad omnia per se accidentia illius speciei, ita se habet essentia singularis ad omnia accidentia propria illius singularis, cuiusmodi sunt omnia accidentia in eo inventa: quia per hoc quod in ipso individuatur, efficiuntur ei propria. Intellectus autem cognoscens essentiam speciei, per eam comprehendit omnia per se accidentia speciei illius: quia, secundum philosophum, omnis demonstrationis, per quam accidentia propria de subiecto concluduntur, principium est quod quid est: unde et cognita propria essentia alicuius singularis, cognoscerentur omnia accidentia singularis illius: quod intellectus noster non potest: quia de essentia singularis est materia signata, a qua intellectus noster abstrahit, et poneretur in eius definitione, si singulare definitionem haberet.

The relation of the universal essence of any species to the essential properties of that species is the same as that of a singular essence to all the proper accidents of that singular, that is, all the accidents found in the singular; for in so far as they are individuated by the singular, they are made proper to it. Now, by knowing the essence of a species, the intellect comprehends all the essential properties of that species; for as the Philosopher says, the definition is the principle of any demonstration that concludes to the proper accidents of a subject. Therefore, once the proper essence of any singular were known, all the accidents of that singular would also be known. Our intellect, however, cannot know the essence of a singular, because it abstracts from designated matter, which pertains to the essence of a singular and would be placed in its definition if the singular had one.³¹²

Super De Trinitate, pars 2 q. 4 a. 2 ad 1. Ad primum ergo dicendum quod, cum dicit philosophus quod numero sunt unum, quorum est materia una, intelligendum est de materia signata, quae subest dimensionibus, alias oporteret dicere quod omnia generabilia et corruptibilia sint unum numero, cum eorum sit materia una.

[Should the difference between the prime and designated matter be blurred, the monist stance is bound to follow]

Super De Trinitate, pars 2 q. 4 a. 2 ad 4. Ad quartum dicendum quod illa, quae differunt numero in genere substantiae, non solum differunt accidentibus, sed etiam forma et materia. Sed si quaeratur, quare differens est eorum forma, non erit alia ratio, nisi quia est in alia

³¹¹ The Summa Theologiæ, The Summa Theologiæ of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight.

<http://www.newadvent.org/summa/>

³¹² Questiones Disputatae de Veritate; TRUTH; by Thomas Aquinas; Questions 1-9 translated by Robert W. Mulligan, S.J.

<http://dhspriority.org/thomas/QDdeVer.htm>

materia signata. Nec invenitur alia ratio, quare haec materia sit divisa ab illa, nisi propter quantitatem.

[Things not only differ with respect to what is incidental for them, but with respect to their inner structure too. And no other principle of individuation can be pointed out than the “designated matter”.]

Consequently:

- 1) The principle of causality observes in different objects only, but not within a single body;
- 2) There are no “absolute dimensions” (neither *res extensa*) but effective ones only (those proved to exist by Rutherford’s experiments); the diameter of an atom is defined by the length of waves associated with those of its electrons;
- 3) What applies to elementary objects must observe in those more complex things too. E.g. in human generation, the male and female genomes are to be regarded as waves carrying a certain amount of energy with them, able to create a new body. Only these genomes can add constructively (Cf: *De Veritate*, 22, 5, c);
- 4) A place counted in natural unities equals $a_0 = \frac{\lambda_e}{\alpha_0}$;
- 5) Every natural length is the multiple of a_0 and the natural energy – of R_∞ ;
- 6) The fact that quantum mechanics tackles “small” objects is incidental only; in fact it tackles *real* objects;
- 7) Each such an object preserves both its integrity and existence (it tends to do this). This finality is to be found in the entire nature.

Finality, according to Thomas, might be seen in:

- 1) That each thing exists for the sake of acting;

Summa Theologiae I, q. 105 a. 5 c. Secundo, quia virtutes operativae quae in rebus inveniuntur, frustra essent rebus attributae, si per eas nihil operarentur. Quinimmo omnes res creatae viderentur quodammodo esse frustra, si propria operatione destituerentur, cum omnis res sit propter suam operationem. Semper enim imperfectum est propter perfectius, sicut igitur materia est propter formam, ita forma, quae est actus primus, est propter suam operationem, quae est actus secundus; et sic operatio est finis rei creatae.

... the active powers which are seen to exist in things, would be bestowed on things to no purpose, if these wrought nothing through them. Indeed, all things created would seem, in a way, to be purposeless, if they lacked an operation proper to them; since the purpose of everything is its operation. For the less perfect is always for the sake of the more perfect: and

consequently as the matter is for the sake of the form, so the form which is the first act, is for the sake of its operation, which is the second act ...³¹³

Summa Theologiae I-II, q. 3 a. 2 c. Manifestum est autem quod operatio est ultimus actus operantis; unde et actus secundus a philosopho nominatur, in II De anima, nam habens formam potest esse in potentia operans, sicut sciens est in potentia considerans. Et inde est quod in aliis quoque rebus res unaquaeque dicitur esse propter suam operationem, ut dicitur in II De caelo. Necesse est ergo beatitudinem hominis operationem esse.

But it is evident that operation is the last act of the operator, wherefore the Philosopher calls it “second act” (De Anima ii, 1): because that which has a form can be potentially operating, just as he who knows is potentially considering. And hence it is that in other things, too, each one is said to be “for its operation” (De Coel ii, 3).³¹⁴

- 2) parts exist for the sake of totality;
- 3) The totality exists as such because conditioned by the Outer (Transcendent) Cause;

Summa Theologiae I-II, q. 109 a. 3 c. Cuius ratio est quia unicuique naturale est quod appetat et amet aliquid, secundum quod aptum natum est esse, sic enim agit unumquodque, prout aptum natum est, ut dicitur in II Physic. Manifestum est autem quod bonum partis est propter bonum totius. Unde etiam naturali appetitu vel amore unaquaeque res particularis amat bonum suum proprium propter *bonum commune totius universi, quod est Deus*.

10. ἀντιπερίστασις

In this Chapter IX, a summary interpretation of the Aristotelian and Thomasian notion of the *intention of nature* has already been proposed. The interpretation goes beyond the standard handbook presentation of the classical philosophy. So, it seems to be becoming to substantiate the interpretation with original texts. It will allow (as we hope) furthering and possibly deepening it.

Let us first, however, recollect the main theses of the interpretation before drawing the attention to the texts it has been elicited from.

- 1) The elementary constituents of the natural world are, at the same time, parts of the ordered whole. They can be seized in analogous terms used by *scientia naturalis*. There is the formal and the material in the whole universe. Form and matter are,

³¹³ The Summa Theologiae, The Summa Theologiae of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight.

<http://www.newadvent.org/summa/>

³¹⁴ Ibid.

normally, deemed to form substances. Still, there is (broadly speaking) the formal and material in motion too; viz. the moving and the moved. This elementary structure makes up the hierarchized structure of the universe;

- 2) Facts are not as radically “contingent” as not being possibly categorized. There is a special, viz. the tenth Aristotelian category they can be drawn into. Relatives constituting facts are immediate counterparts of each other. The source perception of things (phenomenology tries to analyze to no visible avail) is that of facts conceived in the Aristotelian terms. Still, facts as immediately present to the mind are known first as συγκεχυμένα only. The adequate presentation, in turn, requires distinguishing the originally coupled. Thus, the Thomasian distinction between respectively: relatives secundum esse (motion „is something”. albeit its “essence” is elusive after all), and those secundum dici (motion is something responsible *dicta* might be uttered about) must be applied. There is both a perspective opened, and a threat posed, in distinguishing objects. For they can be so in a disciplined manner (in science and morals) or without honest objectives in mind. Still, human activity in general is impossible without distinguishing the originally given (phenomena) after all;
- 3) Each science distinguishes according to the proper method adopted. There is no mathesis universalis Descartes dreamt of. Mathematics is not such a discipline; for it puts up with distinguishing according to place and number. Physica distinguishes the formal and the material in motion;
- 4) According to Aristotle, there is a science which regards the formal and the material in separate things (substances). *Metaphysica est scientia substantiae*, Thomas says commenting on Aristotle’s *Metaphysics*. It substantiates (literally speaking) the abstract notions used in particular sciences. To put it otherwise: due to the *supreme* science the other ones appear to be just *particular* and new perspectives for science in general are opened. *Metaphysics* provides the unshakable fundament for the edifice of science;
- 5) The notion of form and matter can be applied to the universe as a whole. Thus, the prime matter; a “container” of events happens to be saturated by processes of becoming and moving. It is (according to Thomas) fully so; for a form of totality exists too; viz. the order of the universe;
- 6) The general tendency permeating the entire universe is that of tending towards perfection; and the *general* perfection is that of *being*. This is the aforementioned βούλημα τῆς φύσεως (intentio naturae) Aristotle speaks of in his *Protrepticus*, frg. 10, 16, 18, 23, 45);
- 7) The intention can only be identified (recognized) by the most perfect (distinguished) part of the universe. It can be reflected upon (erinnert, should Hegel’s term be used) by the most perfect being existing in the material world. This being exists in it, albeit its (his/her) existence is not tethered to the material world. Otherwise (in less perfect beings) it so indeed; the intention is executed by them only;
- 8) The intention in general is cognizable due to the intentional counterpart of the cosmic motion. Animals can get to know it to the extent it is profitable for their life (can know

some segment of it). The intentional appears at the border of the material. Light (photons) have no mass indeed. But they carry a certain amount of energy with them nevertheless. This energy represents the proper state of energy of objects possibly forming the natural environment. The fact that material objects can be known adequately will completely unconceivable if the objects be deemed *res extensa* (and dimensions definitive of what they are). An unbridgeable rift yawns between what has been called “consciousness” and natural things;

- 9) The philosophical stance called realism is founded upon the *observable* existence of man in the natural world. There are substances in it (persons are such), or at least substrata of motion which resist the flux of events and make existence possible;
- 10) The natural realm for life (the realm based upon cognition) is formed by vicarious forms (*species sensibilis*) of things representative of the state of energy of objects. The forms are propagated in the media and stem from real objects. This natural basis of cognition is further elaborated by the most perfect “animal” existing in the world (man is *animal rationale*). Things are *seen*, but an “insight” into the structure of the universe is possible too. Light is the most perfect carrier of information. But generally, all channels of perception (and all media too) open possibility of propagating information through them. Such carriers are waves in general. The scholastic notion of *species sensibilis* is to be juxtaposed to the notion of pilot wave De Broglie and Bohm speak of;
- 11) The physical actions (movement in the normal sense of the word) is different to how things “move” our imagination. There is always a collapse of the wave function in the sense organs as every barrier (the organ is such) reacts to the action. The organ reacts, and some amount of energy is dissipated, not however, as completely as to render the distinction between the source of motion (*the cause*) and the acted upon (*the effect*) impossible to be retraced thereafter. In sense organs, a collapse must occur, no doubt, but in the senses themselves, the loss must be made up. No measuring instruments can copy perfectly the acting of senses;
- 12) The information accepted corresponds to the state of energy of an object of the natural environment and is vital (literally speaking) for animal existence. Human existence is that and more: not only a certain segment of the universe is known, but the world as such and its relation to the Transcendent Cause. The Transcendent means for humans “radically distinguished”. This is the positive sense of *für-mich-sein/ être-pour-soi/ being-for-itself*. The fact of the existence of God is as existentially important as no other one. Still, the ultimate possibility is anticipated even in the most primitive guise of cognition. Aristotle speaks of the sense perception using the term of “salvation”. Now, the ultimate liberation comes possibly after identifying the Ultimate Source of life;
- 13) Thus, the perfection of life is directly proportional to how distinct and stable a cognition underpinning it;
- 14) Albeit natural particular circumstances are transcended, they constitute a footing indispensable for the very transcending. Unable to avail himself of the breaking

discoveries of the 20th century's science, Aristotle managed, nevertheless, to identify the nature of wave in general. A special term of ἀντιπερίστασις described the type of motion in question;

- 15) The energy permeates the entire universe. There is no place in it whence the path towards the Transcendence could not commence. The pathway of humans is embarked upon after, and dependent on, the intellectual cognition of the First Cause, which *happens to be* the demonstration of Its existence. Naturally, a special *volitional* attitude to this Cause is incomparably more precious than any pure cognition thereof. This is the aforementioned USUS. Not only can God be known; He might be yearned for too. Augustine says: solo Deo fruendum.

Aristotle knew very little about light if the knowledge be compared to that of modern physics. However, there is certain premise for understanding the nature of waves in general, and the account Aristotle provides for the nature the acoustic wave are accurate enough. There a well-founded reason to regard both electromagnetic and acoustic waves on equal terms. In fact, electric forces are at work in the propagating of the latter.

The velocity of the wave in the material medium is given by the equation:

$$\lambda v = \sqrt{T_0/\rho_0} = v_0$$

Taking into account dispersion we have:

$$\frac{\omega^2}{k^2} = \frac{T_0}{\rho_0} + ak^2;$$

Sound wave, as known, can be propagated with negligible loss of energy due to the adiabatic change. It was in fact described by Aristotle. The dissipation of energy must be anticipated (when a sound originates) by the movement of its source – quick enough.

οὐκ ἔστι δὲ ψόφου κύριος ὁ ἀήρ οὐδὲ τὸ ὕδωρ, ἀλλὰ δεῖ
στερεῶν πληγὴν γενέσθαι πρὸς ἄλληλα καὶ πρὸς τὸν ἀέρα.
τοῦτο δ' γίνεται ὅταν ὑπομένη πληγεῖς ὁ ἀήρ καὶ μὴ δια-
χυθῇ. διὸ ἐὰν ταχέως καὶ σφοδρῶς πληγῇ, ψοφεῖ· δεῖ γὰρ
φθάσαι τὴν κίνησιν τοῦ ῥαπίζοντος τὴν θρύψιν τοῦ ἀέρος,
ὥσπερ ἂν εἰ σωρὸν ἢ ὀρμαθὸν ψάμμου τύπτοι τις φερό-
μενον ταχύ (De Anima, II, c. 8 419b 21 - 25)

Further, we must remark that sound is heard both in air and in water, though less distinctly in the latter. Yet neither air nor water is the principal cause of sound. What is required for the production of sound is an impact of two solids against one another and against the air. The latter condition is satisfied when the air impinged upon does not retreat before the blow, i.e. is *not dissipated* by it.

That is why it must be struck with a sudden sharp blow, if it is to sound-the movement of the whip must outrun *the dispersion of the air*, just as one might get in a stroke at a heap or whirl

of sand as it was traveling rapidly past.³¹⁵

According to Aristotle, What happens here must be analogous to what happens in the case of light: ἐπεὶ συμβαίνει γε ἐπὶ τοῦ ψόφου καθάπερ καὶ ἐπὶ τοῦ φωτός (De Anima, II, c. 8, 419b 28 - 29). True, there is no springiness and inertia of the medium of the propagation of light (the void) but analogous constants determine the velocity of light:

$$c = \frac{1}{\sqrt{\mu^{\circ} \epsilon^{\circ}}}$$

The movement of waves in general was described by the term of ἀντιπερίστασις. It had been introduced by Plato before, but apparently without a direct relation to sense perception (“Timaeus”, 59A, 79B). In Chapter VII of the dialogue, the sense perception is addressed without adducing it.

Neither does the term itself appear in the most comprehensive description of sense perception given in the penultimate chapter of Aristotle’s De anima). But the characteristics of “mutual change” overlaps with the meaning of ἀντιπερίστασις presented in other texts.

εἰδῶν ἄνευ τῆς ὕλης. τὸ δὲ ζῶον ἀναγκαῖον αἰσθησιν ἔχειν,
<οὐδὲ ἄνευ ταύτης οἷόν τε οὐθὲν εἶναι ζῶον,>
εἰ μὴθὲν μάτην ποιεῖ ἢ φύσις. ἔνεκά του γὰρ πάντα ὑπάρχει τὰ φύσει, ἢ συμπτώματα ἔσται τῶν ἔνεκά του. εἰ οὖν πᾶν σῶμα πορευτικόν, μὴ ἔχον αἰσθησιν, φθείροιτο ἂν καὶ εἰς τέλος οὐκ ἂν ἔλθοι, ὅ ἐστι φύσεως ἔργον (πῶς γὰρ θρέψεται; τοῖς μὲν γὰρ μονίμοις ὑπάρχει τοῦτο ὅθεν πεφύκασιν, οὐχ οἷόν τε δέε σῶμα ἔχειν μὲν ψυχὴν καὶ νοῦν κριτικόν, αἰσθησιν δὲ μὴ ἔχειν, μὴ μόνιμον ὄν, γενητὸν δὲ ἀλλὰ μὴν οὐδ’ ἀγένητον· διὰ τί γὰρ οὐχ ἔξει; ἢ γὰρ τῇ ψυχῇ βέλτιον ἢ τῷ σῶματι, νῦν δ’ οὐδέτερον· ἢ μὲν γὰρ οὐ μᾶλλον νοήσει, τῷ δ’ οὐθὲν ἔσται μᾶλλον δι’ ἐκεῖνο) οὐθὲν ἄρα ἔχει ψυχὴν σῶμα μὴ μόνιμον <ὄν> ἄνευ αἰσθήσεως.
ἀλλὰ μὴν εἴγε αἰσθησιν ἔχει, ἀνάγκη τὸ σῶμα εἶναι ἢ ἀπλοῦν ἢ μικτόν. οὐχ οἷόν τε δ’ ἀπλοῦν· ἀφὴν γὰρ οὐχ ἔξει, ἔστι δ’ ἀνάγκη ταύτην ἔχειν. τοῦτο δ’ ἐκ τῶνδε δῆλον. ἐπεὶ γὰρ τὸ ζῶον σῶμα ἑμψυχόν ἐστι, σῶμα δ’ ἅπαν ἀπτόν, [ἀπτόν δ’ τὸ αἰσθητὸν ἀφῆ,] ἀνάγκη [καὶ] τὸ τοῦ ζῶου σῶμα ἀπτικόν εἶναι, εἰ μέλλει σώζεσθαι τὸ ζῶον. αἱ γὰρ ἄλλαι αἰσθήσεις δι’ ἐτέρων αἰσθάνονται, οἷον ὄσφρησις ὄψις ἀκοή· ἀπτόμενον δέ, εἰ μὴ ἔξει αἰσθησιν, οὐ δυνήσεται τὰ μὲν φεύγειν τὰ δ’ λαβεῖν. εἰ δ’ τοῦτο, ἀδύνατον ἔσται σώζεσθαι τὸ ζῶον. διὸ καὶ ἡ γεῦσις ἐστὶν ὥσπερ ἀφή τις· τρο-

³¹⁵ Aristotle, On the Soul, Translated by J. A. Smith

φῆς γάρ ἐστιν, ἡ δ' τροφή τὸ σῶμα ἀπτόν. ψόφος δ' καὶ χρῶμα καὶ ὁσμὴ οὐ τρέφει, οὐδ' ποιεῖ οὐτ' αὖξιν οὔτε φθίσιν· ὥστε καὶ τὴν γεῦσιν ἀνάγκη ἀφὴν εἶναι τινα, διὰ τὸ τοῦ ἀπτοῦ καὶ θρεπτικοῦ αἴσθησιν εἶναι· αὐταὶ μὲν οὖν ἀναγκαῖαι τῷ ζῳῷ, καὶ φανερόν ὅτι οὐχ οἷόν τε ἄνευ ἀφῆς εἶναι ζῶον, αἱ δ' ἄλλαι τοῦ τε εὖ ἔνεκα καὶ γένει ζῶων ἤδη οὐ τῷ τυχόντι· ἀλλὰ τισίν, οἷον τῷ πορευτικῷ, ἀνάγκη ὑπάρχειν· εἰ γὰρ μέλλει σῶζεσθαι, οὐ μόνον δεῖ ἀπτόμενον αἰσθάνεσθαι ἀλλὰ καὶ ἄποθεν. τοῦτο δ' ἂν εἴη, εἰ διὰ τοῦ μεταξὺ αἰσθητικὸν εἴη τῷ ἐκείνῳ μὲν ὑπὸ τοῦ αἰσθητοῦ πάσχειν καὶ κινεῖσθαι, αὐτὸ δ' ὑπ' ἐκείνου. ὥσπερ γὰρ τὸ κινεῖν κατὰ τόπον μέχρι τοῦ μεταβάλλειν ποιεῖ, καὶ τὸ ὥσαν ἕτερον ποιεῖ ὥστε ὠθεῖν, καὶ ἔστι διὰ μέσου ἡ κίνησις, καὶ τὸ μὲν πρῶτον κινεῖν ὠθεῖ οὐκ ὠθούμενον, τὸ δ' ἔσχατον μόνον ὠθεῖται οὐκ ὥσαν, τὸ δέ' μέσον ἄμφω, πολλὰ δέ' τὰ μέσα, οὕτω καὶ ἐπ' ἀλλοιώσεως, πλὴν ὅτι μένοντος ἐν τῷ αὐτῷ τόπῳ ἀλλοιοῖ, οἷον εἰ εἰς κηρὸν βάψει τις, μέχρι τούτου ἐκινήθη, ἕως ἔβαπεν· λίθος δ' οὐδέν, ἀλλ' ὕδωρ μέχρι πόρρω· ὁ δ' ἄρ' ἐπὶ πλεῖστον κινεῖται καὶ ποιεῖ καὶ πάσχει, ἐὰν μένη καὶ εἷς ᾗ. διὸ καὶ περὶ ἀνακλάσεως βέλτιον ἢ τὴν ὄψιν ἐξιοῦσαν ἀνακλᾶσθαι τὸν ἀέρα πάσχειν ὑπὸ τοῦ σχήματος καὶ χρώματος, μέχρι περ οὐ ἂν ᾗ εἷς. ἐπὶ δέ' τοῦ λείου ἐστὶν εἷς· διὸ πάλιν οὗτος τὴν ὄψιν κινεῖ, ὥσπερ ἂν εἰ τὸ ἐν τῷ κηρῷ σημεῖον διεδίδοτο μέχρι τοῦ πέρατος. (De Anima, III, c. 12, 434a 30 – 435a 11)

But animals must be endowed with sensation, since Nature does nothing in vain. For all things that exist by Nature are means to an end, or will be concomitants of means to an end. Every body capable of forward movement would, if unendowed with sensation, perish and fail to reach its end, which is the aim of Nature; for how could it obtain nutriment? Stationary living things, it is true, have as their nutriment that from which they have arisen; but it is not possible that a body which is not stationary but produced by generation should have a soul and a discerning mind without also having sensation. (Nor yet even if it were not produced by generation. Why should it not have sensation? Because it were better so either for the body or for the soul? But clearly it would not be better for either: the absence of sensation will not enable the one to think better or the other to exist better.) Therefore no body which is not stationary has soul without sensation.

But if a body has sensation, it must be either simple or compound. And simple it cannot be; for then it could not have touch, which is indispensable. This is clear from what follows. An animal is a body with soul in it: every body is tangible, i.e. perceptible by touch; hence necessarily, if an animal is to survive, its body must have tactual sensation. All the other senses, e.g. smell, sight, hearing, apprehend through media; but where there is immediate contact the animal, if it has no sensation, will be unable to avoid some things and take others, and so will find it impossible to survive. That is why taste also is a sort of touch; it is relative to nutriment, which is just tangible body; whereas sound, colour, and odour are innutritious, and further neither grow nor decay. Hence it is that taste also must be a sort of touch, because it is the sense for what is tangible and nutritious.

Both these senses, then, are indispensable to the animal, and it is clear that without touch it is impossible for an animal to be. All the other senses subserve well-being and for that very

reason belong not to any and every kind of animal, but only to some, e.g. those capable of forward movement must have them; for if they are to survive, they must perceive not only by immediate contact but also at a distance from the object. This will be possible if they can perceive through a medium, the medium being affected and moved by the perceptible object, and the animal by the medium. *just as that which produces local movement causes a change extending to a certain point, and that which gave an impulse causes another to produce a new impulse so that the movement traverses a medium the first mover impelling without being impelled, the last moved being impelled without impelling, while the medium (or media, for there are many) is both-so is it also in the case of alteration, except that the agent produces it without the patient's changing its place.* Thus if an object is dipped into wax, the movement goes on until submersion has taken place, and in stone it goes no distance at all, while in water the disturbance goes far beyond the object dipped: *in air the disturbance is propagated farthest of all, the air acting and being acted upon, so long as it maintains an unbroken unity.* That is why in the case of reflection it is better, instead of saying that the sight issues from the eye and is reflected, to say that the air, so long as it remains one, is affected by the shape and colour. On a smooth surface the air possesses unity; hence it is that it in turn sets the sight in motion, just as if the impression on the wax were transmitted as far as the wax extends.³¹⁶

The words underscored above characterize wave movement in general. It is neatly opposed to the normal causal interaction (of the moving and the moved). It makes the interaction cognizable. *The unbroken unity* of the medium is that of species sensibilis. Aristotle observes that waves are possibly propagated for great distances (contrary to purely mechanical impulses): *in water the disturbance goes far beyond the object dipped.*

The term of ἀντιπερίστασις appears in the text describing the propagation of waves in

Physics, IV, c.8, 215a 14-17:

... ἔτι νῦν μὲν κινεῖται τὰ ῥιπτούμενα τοῦ ὥσαντος οὐχ
ἀπτομένου, ἢ δι' ἀντιπερίστασιν, ὥσπερ ἔνιοί φασιν, ἢ διὰ
τὸ ὠθεῖν τὸν ὠσθέντα ἀέρα θάπτω κίνησιν τῆς τοῦ ὠσθέντος
φορᾶς ἣν φέρεται εἰς τὸν οἰκεῖον τόπον·

Further, in point of fact things that are thrown move though that which gave them their impulse is not touching them, either by reason of *mutual replacement* (δι' ἀντιπερίστασιν), as some maintain, or because the air that has been pushed pushes them with a movement quicker than the natural locomotion of the projectile wherewith it moves to its proper place.³¹⁷

³¹⁶ Aristotle, On the Soul, Translated by J. A. Smith

<https://ebooks.adelaide.edu.au/a/aristotle/a8so/>

³¹⁷ Aristotle, Physics, translated by R.P. Hardie and R.K. Gaye

<https://ebooks.adelaide.edu.au/a/aristotle/physics/contents.html>

The text is polemical with Democritus' idea of void. The Democritean void must have been deprived of all properties, those defining the speed of the electromagnetic wave – constants of permittivity and magnetic permeability: μ_0 ; ϵ_0 – first of all. Both constants define the nature of what scholastics called after Aristotle diaphanum.

Physica, IV, c.8, 215a 17-24:

ἐν δὲ τῷ κενῷ
οὐδὲν τούτων ὑπάρχει, οὐδ' ἔσται φέρεσθαι ἀλλ' ἢ
ὥς τὸ ὀχούμενον. ἔτι οὐδεὶς ἂν ἔχοι εἰπεῖν διὰ τί κινήθην στή-
σεταιί που· τί γὰρ μᾶλλον ἐνταῦθα ἢ ἐνταῦθα; ὥστε ἢ ἡρε-
μήσει ἢ εἰς ἄπειρον ἀνάγκη φέρεσθαι, ἐὰν μή τι ἐμπο-
δίση κρεῖττον.
ἔτι νῦν μὲν εἰς τὸ κενὸν διὰ τὸ ὑπέκειν φέ-
ρεσθαι δοκεῖ· ἐν δὲ τῷ κενῷ πάντῃ ὁμοίως τὸ τοιοῦτον, ὥστε
πάντῃ οἰσθήσεται.

But in a void none of these things can take place, nor can anything be moved save as that which is carried is moved.

Further, no one could say why a thing once set in motion should stop anywhere; for why should it stop here rather than here? So that a thing will either be at rest or must be moved ad infinitum, unless something more powerful get in its way.

Further, things are now thought to move into the void because it yields; but in a void this quality is present equally everywhere, so that things should move in all directions.³¹⁸

A detailed description of sense perception is given in the 7th Chapter of the II book of “On the Soul”.

De anima, II c. 7, 418a 26 - 418b 13:

Οὐ μὲν οὖν ἐστὶν ἡ ὄψις, τοῦτ' ἐστὶν ὁρατόν, ὁρατὸν δ'
ἐστὶ χρῶμά τε καὶ ὁ λόγῳ μὲν ἔστιν εἰπεῖν, ἀνώνυμον
δε^ν τυγχάνει ὄν· δῆλον δ^ν ἔσται ὁ λέγομεν προελθοῦσι.
τὸ γὰρ ὁρατόν ἐστὶ χρῶμα, τοῦτο δ' ἐστὶ τὸ ἐπὶ τοῦ
καθ' αὐτὸ ὁρατοῦ· καθ' αὐτὸ δ^ν οὐ τῷ λόγῳ, ἀλλ' ὅτι ἐν
ἐαυτῷ ἔχει τὸ αἴτιον τοῦ εἶναι ὁρατόν. πᾶν δε^ν χρῶμα κινητι-
κόν ἐστὶ τοῦ κατ' ἐνέργειαν διαφανοῦς, καὶ τοῦτ' ἐστὶν αὐτοῦ
ἡ φύσις· διόπερ οὐχ ὁρατὸν ἄνευ φωτός, ἀλλὰ πᾶν τὸ ἐκάστου
χρῶμα ἐν φωτὶ ὁράται. διὸ περὶ φωτὸς πρῶτον λεκτέον τί
ἐστίν. ἔστι δὴ τι διαφανές. διαφανὲς δε^ν λέγω ὁ ἔστι μὲν
ὁρατόν, οὐ καθ' αὐτὸ δ^ν ὁρατὸν ὡς ἀπλῶς εἰπεῖν, ἀλλὰ δι'
ἀλλότριον χρῶμα. τοιοῦτον δὲ ἐστὶν ἁῆρ καὶ ὕδωρ καὶ πολλὰ

³¹⁸ Ibid.

τῶν στερεῶν· οὐ γὰρ ἡ ὕδωρ οὐδ' ἡ ἀήρ διαφανές, ἀλλ' ὅτι
ἔστι τις φύσις ἐνυπάρχουσα ἢ αὐτὴ ἐν τούτοις ἀμφοτέροις καὶ
ἐν τῷ αἰδίῳ τῷ ἄνω σώματι. φῶς δέ ἐστιν ἡ τούτου ἐνέργεια,
τοῦ διαφανοῦς ἢ διαφανές. δυνάμει δέ, ἐν ᾧ τοῦτ' ἐστί, καὶ τὸ
σκοτός. τὸ δὲ φῶς οἷον χρώμα ἐστὶ τοῦ διαφανοῦς, ὅταν ἡ
ἐντελεχεία διαφανὲς ὑπὸ πυρὸς ἢ τοιούτου οἷον τὸ ἄνω
σῶμα· καὶ γὰρ τούτῳ τι ὑπάρχει ἐν καὶ ταυτόν.

419a 1-3:

οὐ πάντα δὲ ὁρατὰ ἐν φωτὶ ἐστίν, ἀλλὰ μόνον ἐκάστου
τὸ οἰκεῖον χρώμα· ἓνια γὰρ ἐν μὲν τῷ φωτὶ οὐχ ὁράται,
ἐν δὲ τῷ σκοτεῖ ποιεῖ αἰσθησιν,

419a 7-11:

νῦν δ' ἐπὶ το-
σοῦτον φανερόν ἐστιν, ὅτι τὸ μὲν ἐν φωτὶ ὁρώμενον χρώμα
(διὸ καὶ οὐχ ὁράται ἄνευ φωτός· τοῦτο γὰρ ἦν αὐτῷ τὸ
χρώματι εἶναι, τὸ κινητικῶ εἶναι τοῦ κατ' ἐνέργειαν δια-
φανοῦς), ἢ δ' ἐντελέχεια τοῦ διαφανοῦς φῶς ἐστίν.

419 a 17-20:

πά-
σχοντος γὰρ τι τοῦ αἰσθητικοῦ γίνεται τὸ ὁρᾶν· ὑπ' αὐτοῦ
μὲν οὖν τοῦ ὁρωμένου χρώματος ἀδύνατον· λείπεται δὲ ὑπὸ
τοῦ μεταξὺ, ὥστ' ἀναγκαῖόν τι εἶναι μεταξὺ·

419a 25-31:

ὁ δ' αὐτὸς λόγος καὶ περὶ ψόφου καὶ ὁσμῆς
ἐστίν· οὐθὲν γὰρ αὐτῶν ἀπτόμενον τοῦ αἰσθητηρίου ποιεῖ τὴν
αἰσθησιν, ἀλλ' ὑπὸ μὲν ὁσμῆς καὶ ψόφου τὸ μεταξὺ κι-
νεῖται, ὑπὸ δὲ τούτου τῶν αἰσθητηρίων ἐκάτερον· ὅταν δ' ἐπ'
αὐτό τις ἐπιθῇ τὸ αἰσθητήριον τὸ ψοφοῦν ἢ τὸ ὄζον, οὐδεμίαν
αἰσθησιν ποιήσῃ. περὶ δὲ ἀφῆς καὶ γεύσεως ἔχει μὲν
ὁμοίως, οὐ φαίνεται δέ·

CHAPTER 7

The object of sight is the visible, and what is visible is (a) colour and (b) a certain kind of object which can be described in words but which has no single name; what we mean by (b) will be abundantly clear as we proceed. Whatever is visible is colour and colour is what lies upon what is in its own nature visible; 'in its own nature' here means not that visibility is involved in the definition of what thus underlies colour, but that that substratum contains in itself the cause of visibility. *Every colour has in it the power to set in movement what is*

actually transparent; that power constitutes its very nature. That is why it is not visible except with the help of light; it is only in light that the colour of a thing is seen. Hence our first task is to explain what light is.

Now there clearly is something which is transparent, and by 'transparent' I mean what is visible, and yet not visible in itself, but rather owing its visibility to the colour of something else; of this character are air, water, and many solid bodies. Neither air nor water is transparent because it is air or water; they are transparent because each of them has contained in it a certain substance which is the same in both and is also found in the eternal body which constitutes the uppermost shell of the physical Cosmos. Of this substance light is the activity - the activity of what is transparent so far forth as it has in it the determinate power of becoming transparent; where this power is present, there is also the potentiality of the contrary, viz. darkness. Light is as it were the proper colour of what is transparent, and exists whenever the potentially transparent is excited to actuality by the influence of fire or something resembling 'the uppermost body'; for fire too contains something which is one and the same with the substance in question.

We have now explained what the transparent is and what light is; light is neither fire nor any kind whatsoever of body nor an efflux from any kind of body (if it were, it would again itself be a kind of body) - it is the presence of fire or something resembling fire in what is transparent. It is certainly not a body, for two bodies cannot be present in the same place. The opposite of light is darkness; darkness is the absence from what is transparent of the corresponding positive state above characterized; clearly therefore, light is just the presence of that.

Empedocles (and with him all others who used the same forms of expression) was wrong in speaking of light as 'travelling' or being at a given moment between the earth and its envelope, its movement being unobservable by us; that view is contrary both to the clear evidence of argument and to the observed facts; if the distance traversed were short, the movement might have been unobservable, but where the distance is from extreme East to extreme West, the draught upon our powers of belief is too great.

What is capable of taking on colour is what in itself is colourless, as what can take on sound is what is soundless; what is colourless includes (a) what is transparent and (b) what is invisible or scarcely visible, i.e. what is 'dark'. The latter (b) is the same as what is transparent, when it is potentially, not of course when it is actually transparent; it is the same substance which is now darkness, now light.

Not everything that is visible depends upon light for its visibility. This is only true of the 'proper' colour of things. Some objects of sight which in light are invisible, in darkness stimulate the sense; that is, things that appear fiery or shining. This class of objects has no simple common name, but instances of it are fungi, flesh, heads, scales, and eyes of fish. In none of these is what is seen their own proper' colour. Why we see these at all is another question. At present what is obvious is that what is seen in light is always colour. That is why without the help of light colour remains invisible. *Its being colour at all means precisely its having in it the power to set in movement what is already actually transparent, and, as we have seen, the actuality of what is transparent is just light.*

The following experiment makes the necessity of a medium clear. If what has colour is placed in immediate contact with the eye, it cannot be seen. *Colour sets in movement not the sense organ but what is transparent, e.g. the air, and that, extending continuously from the object to the organ, sets the latter in movement.* Democritus misrepresents the facts when he expresses the opinion that if the interspace were empty one could distinctly see an ant on the vault of the sky; that is an impossibility. Seeing is due to an affection or change of what has the perceptive faculty, and it cannot be affected by the seen colour itself; it remains that it must be affected by what comes between. Hence *it is indispensable that there be something in between* - if there were nothing, so far from seeing with greater distinctness, we should see nothing at all.

We have now explained the cause why colour cannot be seen otherwise than in light. Fire on the other hand is seen both in darkness and in light; this double possibility follows necessarily

from our theory, for it is just fire that makes what is potentially transparent actually transparent.

*The same account holds also of sound and smell; if the object of either of these senses is in immediate contact with the organ no sensation is produced. In both cases the object sets in movement only what lies between, and this in turn sets the organ in movement: if what sounds or smells is brought into immediate contact with the organ, no sensation will be produced. The same, in spite of all appearances, applies also to touch and taste; why there is this apparent difference will be clear later. What comes between in the case of sounds is air; the corresponding medium in the case of smell has no name. But, corresponding to what is transparent in the case of colour, there is a quality found both in air and water, which serves as a medium for what has smell - I say 'in water' because animals that live in water as well as those that live on land seem to possess the sense of smell, and 'in air' because man and all other land animals that breathe, perceive smells only when they breathe air in. The explanation of this too will be given later.*³¹⁹

There is (as has been mentioned above) an analogy in all channels of perception. The only difference consists in how the electromagnetic wave is transmitted: the grade of the transparency of the medium equals the grade of dispersion: ἐπεὶ συμβαίνει γε ἐπὶ τοῦ ψόφου καθάπερ καὶ ἐπὶ τοῦ φωτός.

Thomas' Commentary casts more light on problem of the nature of wave motion:

Deinde cum dicit non enim excludit errorem; dicens, quod non bene dixit Democritus, qui opinatus fuit, quod si medium, quod est inter rem visam et oculum esset vacuum, quod posset aliquid quantumcumque parvum videri per quantamcumque distantiam, puta si formica esset in caelo. Sed hoc est impossibile. Oportet enim, ad hoc quod aliquid videatur, quod organum visus patiatur a visibili. Ostensum est autem, quod non patitur ab ipso visibili immediate, quia visibile superpositum oculo non videtur. Relinquitur ergo, quod oporteat organum visus pati a visibili per aliquod medium: necesse est ergo esse aliquod medium inter visibile et visum. Si autem est vacuum, nihil est

433. Then at 'Democritus etc.', he sets aside an erroneous view. Democritus, he says, was wrong in thinking that if the medium between the eye and the thing seen were a vacuum, any object, however small, would be visible at any distance, e.g. an ant in the sky. This cannot be. For if anything is to be seen it must actually affect the organ of sight. Now it has been shown that this organ as such is not affected by an immediate object—such as an object placed upon the eye. So there must be a medium between organ and object. But a vacuum is not a medium; it cannot receive or transmit effects from the object. Hence through a vacuum nothing would be seen

³¹⁹ Aristotle, On the Soul, Translated by J. A. Smith

medium, quod posset immutare et immutari. Relinquitur ergo, quod si esset vacuum, omnino nihil videretur.

Concava autem etiam percussa, bene reddunt sonum, quia in eis intus aer concluditur. Et cum illud quod primo motum est, non possit statim exire, percutit alium aerem, et sic ex repercussione fiunt multi ictus et multiplicatur sonus. Et propter hoc etiam illa quae in sui compositione habent aerem bene dispositum, sunt bene sonora, sicut aes et argentum. In quorum autem compositione aer non bene se habet, non sunt bene sonora, sicut plumbum, et alia huiusmodi, quae sunt magis feculenta et terrestria.

Quod autem simul fiat percussio solidorum adinvicem, et per consequens sonus et ad aera, contingit cum aer in sua integritate manet, ut possit percuti, et non dividitur ante percussione. Et propter hoc videmus, quod si aliquid tardo motu tangat alterum, non facit sonum, quia prius recedit aer et dissolvitur, quam contactus solidorum corporum fiat. Sed si percussio sit velox et fortis, tunc fit sonus; quia ad hoc quod fiat sonus, oportet quod motus percutientis praeveniat divisionem aeris, ut aer adhuc adunatus sive collectus percuti possit, et in eo sonus generari. Et est simile, sicut cum aliquid velociter fertur, percutere potest acervum lapidum antequam dissolvatur, quod non contingit si tarde moveatur. Et propter hoc etiam, quando aliquid velociter fertur in ipso aere, facit sonum ex suo motu, quia ipse aer adhuc adunatus, se habet in ratione percussi, et non solum medii.

at all.³²⁰

444. Hollow bodies give out sound very well, when struck, because they hold the air in, and, as this air first set in motion cannot at once come out, it disturbs the rest of the air, and thus by repercussion the impact and the sounding are multiplied. For this reason also materials with a suitable disposition of air in their composition are especially sonorous, such as bronze and silver; but materials in which air is less well disposed are less sonorous, like lead and such things as are more earthy and sedimentary.

446. Now if the impact of solid bodies upon one another is to be simultaneous with the production of sound in the air, it is necessary that the air remain a whole and continuous, that it be not broke up before receiving the effect of the impact. Hence it is, as experience shows that when two bodies are brought slowly together no sound occurs: for the air recedes and melts away before the contact is made. But if the impact is swift and violent, then a sound results; for if sound is to occur, the movement of what strikes must precede the division of the air, so that the air can be struck while still en bloc, or collected, and so a sound be produced in it. It is as when one strikes swiftly with a whip, hitting a whole heap of stones all at once, before they fall apart. For the same reason, when anything passes rapidly through

³²⁰ Sentencia libri De anima, COMMENTARY ON ARISTOTLE'S DE ANIMA by Thomas Aquinas translated by Kenelm Foster, O.P. and Sylvester Humphries, O.P. New Haven: Yale University Press, 1951 html edition by Joseph Kenny, O.P.

<https://dhsprory.org/thomas/DeAnima.htm>

the air, it makes a noise as it goes, because the air itself, being compact, serves as the object struck, not merely as the medium.

The specifics of the wave motion was (understandably enough) first spotted when regarding how waves fluctuate in the surface of water.³²¹ The dispersion, in turn, was made out when observing how light is shed in semi-dark places.³²²

³²¹ Sentencia De anima, lib. 2 l. 16 n. 9 Deinde cum dicit echo autem determinat de secunda generatione soni, quae fit per reverberationem; qui quidem sonus vocatur echo. Primo ergo determinat quomodo generetur. Secundo ostendit quomodo diversificetur in sui generatione, ibi, videtur autem. Considerandum est autem circa primum, quod generatio soni in aere consequitur motum aeris, ut dictum est. Sic autem contingit de immutatione aeris apud generationem soni, sicut de immutatione aquae, cum aliquid in aquam proiicitur. Manifestum est enim quod fiunt quaedam gyrationes in circuitu aquae percussae. Quae quidem circa locum percussiois sunt parvae, et motus est fortis. In remotis autem gyrationes sunt magnae, et motus debilior. Tandem autem motus totaliter evanescit, et gyrationes cessant. Si autem antequam motus cesset, gyrationes illae aliquod obstaculum invenient, fit motus gyrationis in contrarium; et tanto vehementius, quanto propinquius sunt primae percussioni. Sentencia De anima, lib. 2 l. 16 n. 10 Sic igitur intelligendum est, quod ad percussioem corporum sonantium, aer in gyrum movetur, et sonus undique diffunditur. Et in vicino quidem gyrationes sunt minores, sed motus fortior; unde sonus fortius percipitur. In remotis autem gyrationes sunt maiores, et motus debilior, et sonus obscurior auditur. Tandem autem deficit totum. Si autem antequam huiusmodi gyrationes deficiant, fiat reverberatio aeris sic moti, et sonum deferentis ad aliquod corpus, gyrationes revertentur in contrarium, et sic auditur sonus quasi ex adverso. Et haec vocatur echo.

³²² Sentencia De anima, lib. 2 l. 16 n. 12 Deinde cum dicit videtur autem ostendit quomodo diversimode fit echo; et dicit, quod videtur semper fieri echo, sed non semper fit certa, id est manifeste perceptibilis. Et hoc ostendit per simile. Dicit enim quod accidit in sono sicut in lumine. Lumen enim semper repercutitur; sed quandoque quidem est manifesta repercussio luminis, quandoque autem non. Manifesta quidem est repercussio luminis, quando repercutitur ab aliquo corpore fulgido, itaque cum quadam claritate fit luminis repercussio, simili modo primae luminis emissioni. Immanifesta autem est repercussio luminis, quando repercutitur ab aliquo corpore opaco; quia huiusmodi repercussio fit sine claritate et radiorum emissionem. Nisi enim a corporibus opacis fieret repercussio radiorum solis, non fieret lumen penitus, id est in qualibet parte aeris superioris hemisphaerii, sed ubique esset tenebra extra solem, id est extra loca ad quae directe perveniunt radii solares. Non tamen sic repercutitur lumen a corporibus opacis, sicut ab aqua vel aere, aut aliquo de numero lenium corporum et tersorum, a quibus fit repercussio cum claritate et radiorum emissionem. Et ideo, quia repercussio, quae fit a corporibus opacis, non est similis repercussioni quae fit a corporibus fulgidis; repercussio, quae fit a corporibus opacis, facit tenebram, id est umbram ex illa parte ubi determinatur lumen manifestum, quod est ex directa emissionem radiorum solarium. Similiter autem, quando repercussio soni fit ad corpus concavum, in quo natus est multiplicari sonus, fit echo certus, id est manifeste comprehensibilis. Quando autem ad alia corpora fit reverberatio soni, quae non sunt nata multiplicare sonum, non fit echo manifestus.

Ex quo etiam patet quod, cum lux sit quodammodo substantia coloris, ad eandem naturam reducitur omne visibile, nec oportet quod color per lumen extrinsecum fiat actu visibile. Quod autem colores illuminati ab eo qui est in obscuro, videantur, contingit ex eo, quod etiam medium illuminatur, in quantum sufficit ad immutationem ipsius.

426. Whence it is also clear that, as light is, in a certain way, the very substance of colour, all visible objects as such share in the same nature; nor does colour require to be made visible by some other, extrinsic, light. That colours in light are visible to one standing in the shade is due to the medium's having been sufficiently illumined.

For centuries, light has had metaphorical meaning of the source of verity. When reading the classical texts, however, we realize the *reason* of it. It is not sheer mode de parler to speak of the Light with the capital “L”. Light makes for the cognoscibility of the material world and points out the direction to the Source of the cosmic energy. The last words of “Treaty on Nature” make the point clear.

Physica, VIII. C. 10, 266b 25

ὅτι μὲν οὖν οὐκ ἐνδέχεται ἄπειρον εἶναι δύναμιν ἐν πεπερασμένῳ μεγέθει, οὐδ' ἐν ἀπείρῳ πεπερασμένην, ἐκ τούτων δῆλον. περὶ δὲ τῶν φερομένων ἔχει καλῶς διαπορῆσαι τινα ἀπορίαν πρῶτον. εἰ γὰρ πᾶν τὸ κινούμενον κινεῖται ὑπὸ τινός, ὅσα μὴ αὐτὰ ἑαυτὰ κινεῖ, πῶς κινεῖται ἕνια συνεχῶς μὴ ἀπτομένου τοῦ κινήσαντος, οἷον τὰ ῥιπτούμενα; εἰ δ' ἅμα κινεῖ καὶ ἄλλο τι ὁ κινήσας, οἷον τὸν ἀέρα, ὃς κινούμενος κινεῖ, ὁμοίως ἀδύνατον τοῦ πρῶτου μὴ ἀπτομένου μηδὲ κινούντος κινεῖσθαι, ἀλλ' ἅμα πάντα <καὶ> κινεῖσθαι καὶ πεπαῦσθαι ὅταν τὸ πρῶτον κινεῖται παύσηται, καὶ εἰ ποιεῖ, ὥσπερ ἡ λίθος, οἷον τε κινεῖν ὁ ἐκίνησεν. ἀνάγκη δὲ τοῦτο μὲν λέγειν, ὅτι τὸ πρῶτον κινήσαν ποιεῖ οἷον τε κινεῖν ἢ τὸν ἀέρα [τοιοῦτον] ἢ τὸ ὕδωρ ἢ τι ἄλλο τοιοῦτον ὃ πέφυκε κινεῖν καὶ κινεῖσθαι· ἀλλ' οὐχ ἅμα παύεται κινεῖν καὶ κινούμενον, ἀλλὰ

Sentencia De anima, lib. 2 l. 14 n. 27 Et ad huius evidentiam, considerandum est, quod omnis forma, in quantum huiusmodi, est principium agendi sibi simile: unde cum color sit quaedam forma, ex se habet, quod causet sui similitudinem in medio. Sed tamen sciendum est quod differentia est inter virtutem perfectam et imperfectam. Nam forma quae est perfectae virtutis in agendo, non solum potest inducere suam similitudinem in suo susceptibili; sed potest etiam disponere patiens, ut sit proprium eius susceptivum; quod quidem non potest facere, cum fuerit imperfectae virtutis. Dicendum est igitur quod virtus coloris in agendo est imperfecta respectu virtutis luminis. Nam color nihil aliud est quam lux quaedam quodammodo obscurata ex admixtione corporis opaci. Unde non habet virtutem, ut faciat medium in illa dispositione, qua fit susceptivum coloris; quod tamen potest facere lux pura.

κινούμενον μὲν ἅμα ὅταν ὁ κινῶν παύσῃται κινῶν, κινοῦν δὲ ἔτι ἐστίν. διὸ καὶ κινεῖ τι ἄλλο ἐχόμενον· καὶ ἐπὶ τούτου ὁ αὐτὸς λόγος. παύεται δέ, ὅταν αἰεὶ ἐλάττων ἢ δύναμις τοῦ κινεῖν ἐγγίγνηται τῷ ἐχομένῳ. τέλος δὲ παύεται, ὅταν μηκέτι ποιήσῃ τὸ πρότερον κινοῦν, ἀλλὰ κινούμενον μόνον. ταῦτα δ' ἀνάγκη ἅμα παύεσθαι, τὸ μὲν κινοῦν τὸ δὲ κινούμενον, καὶ τὴν ὅλην κίνησιν. αὕτη μὲν οὖν ἐν τοῖς ἐνδεχομένοις ὅτε μὲν κινεῖσθαι ὅτε δ' ἡρεμεῖν ἐγγίγνεται ἡ κίνησις, καὶ οὐ συνεχῆς, ἀλλὰ φαίνεται· ἡ γὰρ ἐφεξῆς ὄντων ἡ ἀπτομένων ἐστίν· οὐ γὰρ ἐν τὸ κινοῦν, ἀλλ' ἐχόμενα ἀλλήλων. διὸ ἐν ἀέρι καὶ ὕδατι γίγνεται ἡ τοιαύτη κίνησις, ἣν λέγουσί τινες ἀντιπερίστασιν εἶναι. ἀδύνατον δὲ ἄλλως τὰ ἀπορηθέντα λύειν, εἰ μὴ τὸν εἰρημένον τρόπον. ἡ δ' ἀντιπερίστασις ἅμα πάντα κινεῖσθαι ποιεῖ καὶ κινεῖν, ὥστε καὶ παύεσθαι.[...] ἔχει δ' ἀπορίαν εἰ ἐνδέχεταιί τι κινούμενον κινεῖν συνεχῶς, ἀλλὰ μὴ ὥσπερ τὸ ὠθοῦν πάλιν καὶ πάλιν, τῷ ἐφεξῆς εἶναι συνεχῶς· ἡ γὰρ αὐτὸ δεῖ αἰεὶ ὠθεῖν ἢ ἔλκειν ἢ ἄμφω, ἢ ἕτερόν τι ἐκδεχόμενον ἄλλο παρ' ἄλλου, ὥσπερ πάλαι ἐλέχθη ἐπὶ τῶν ῥιπτουμένων, εἰ διαίρετός ὢν ὁ ἀήρ [ἢ τὸ ὕδωρ] κινεῖ ἄλλος αἰεὶ κινούμενος. ἀμφοτέρως δ' οὐχ οἷόν τε μίαν εἶναι, ἀλλ' ἐχομένην. μόνη ἄρα συνεχῆς ἦν κινεῖ τὸ ἀκίνητον· αἰεὶ γὰρ ὁμοίως ἔχον καὶ πρὸς τὸ κινούμενον ὁμοίως ἕξει καὶ συνεχῶς. διωρισμένων δὲ τούτων φανερόν ὅτι ἀδύνατον τὸ πρῶτον κινοῦν καὶ ἀκίνητον ἔχειν τι μέγεθος. εἰ γὰρ μέγεθος ἔχει, ἀνάγκη ἦτοι πεπερασμένον αὐτὸ εἶναι ἢ ἄπειρον. ἄπειρον μὲν οὖν ὅτι οὐκ ἐνδέχεται μέγεθος εἶναι, δέδεικται πρότερον ἐν τοῖς φυσικοῖς· ὅτι δὲ τὸ πεπερασμένον ἀδύνατον ἔχειν δύναμιν ἄπειρον, καὶ ὅτι ἀδύνατον ὑπὸ πεπερασμένου κινεῖσθαι τι ἄπειρον χρόνον, δέδεικται νῦν. τὸ δὲ γε πρῶτον κινοῦν αἰδίον κινεῖ κίνησιν καὶ ἄπειρον χρόνον. φανερόν τοίνυν ὅτι ἀδιαίρετόν ἐστι 267b 26 καὶ ἀμερὲς καὶ οὐδὲν ἔχον μέγεθος.

BOOK VIII, 10

It is plain, then, from the foregoing arguments that it is impossible for an infinite force to reside in a finite magnitude or for a finite force to reside in an infinite magnitude. But before proceeding to our conclusion it will be well to discuss a difficulty that arises in connexion with locomotion. If everything that is in motion with the exception of things that move themselves is moved by something else, how is it that *some things, e.g. things thrown, continue to be in motion when their movent is no longer in contact with them*? If we say that the movent in such cases moves something else at the same time, that the thrower e.g. also moves the air, and that this in being moved is also a movent, then it would be no more possible for this second thing than for the original thing to be in motion when the original movent is not in contact with it or

moving it: *all the things moved would have to be in motion simultaneously and also to have ceased simultaneously to be in motion when the original movent ceases to move them*, even if, like the magnet, it makes that which it has moved capable of being a movent. Therefore, while we must accept this explanation to the extent of saying that the original movent gives the power of being a movent either to air or to water or to something else of the kind, naturally adapted for imparting and undergoing motion, *we must say further that this thing does not cease simultaneously to impart motion and to undergo motion: it ceases to be in motion at the moment when its movent ceases to move it, but it still remains a movent, and so it causes something else consecutive with it to be in motion, and of this again the same may be said*. The motion begins to cease when the motive force produced in one member of the consecutive series is at each stage less than that possessed by the preceding member, and it finally ceases when one member no longer causes the next member to be a movent but only causes it to be in motion. The motion of these last two — of the one as movent and of the other as moved — must cease simultaneously, and with this the whole motion ceases. Now the things in which this motion is produced are things that admit of being sometimes in motion and sometimes at rest, and the motion is not continuous but only appears so: *for it is motion of things that are either successive or in contact, there being not one movent but a number of movents consecutive with one another*: and so motion of this kind takes place in air and water. Some say that it is ‘mutual replacement’: but we must recognize that the difficulty raised cannot be solved otherwise than in the way we have described. So far as they are affected by ‘*mutual replacement*’, *all the members of the series are moved and impart motion simultaneously, so that their motions also cease simultaneously*: but our present problem concerns the appearance of continuous motion in a single thing, and therefore, since it cannot be moved throughout its motion by the same movent, the question is, what moves it?

Resuming our main argument, we proceed from the positions that *there must be continuous motion in the world of things*, that this is a single motion, that a single motion must be a motion of a magnitude (for that which is without magnitude cannot be in motion), and that *the magnitude must be a single magnitude moved by a single movent* (for otherwise there will not be continuous motion but a consecutive series of separate motions), and that if the movement is a single thing, it is either itself in motion or itself unmoved: if, then, it is in motion, it will have to be subject to the same conditions as that which it moves, that is to say it will itself be in process of change and in being so will also have to be moved by something: *so we have a series that must come to an end, and a point will be reached at which motion is imparted by something that is unmoved*. Thus we have a movent that has no need to change along with that which it moves but will be able to cause motion always (for the causing of motion under these conditions involves no effort): and this motion alone is regular, or at least it is so in a higher degree than any other, since the movent is never subject to any change. So, too, in order that the motion may continue to be of the same character, the moved must not be subject to change in respect of its relation to the movent. Moreover the movent must occupy either the centre or the circumference, since these are the first principles from which a sphere is derived. But the things nearest the movent are those whose motion is quickest, and in this case it is the motion of the circumference that is the quickest: therefore the movent occupies the circumference.

There is a further difficulty in supposing it to be possible for anything that is in motion to cause motion continuously and not merely in the way in which it is caused by something repeatedly pushing (in which case the continuity amounts to no more than successiveness). Such a movent must either itself continue to push or pull or perform both these actions, or else

the action must be taken up by something else and be passed on from one movent to another (the process that we described before as occurring in the case of things thrown, since the air or the water, being divisible, is a movent only in virtue of the fact that different parts of the air are moved one after another): and in either case the motion cannot be a single motion, but only a consecutive series of motions. *The only continuous motion, then, is that which is caused by the unmoved movent: and this motion is continuous because the movent remains always invariable, so that its relation to that which it moves remains also invariable and continuous.* Now that these points are settled, it is clear that the first unmoved movent cannot have any magnitude. For if it has magnitude, this must be either a finite or an infinite magnitude. Now we have already proved in our course on Physics that there cannot be an infinite magnitude: and we have now proved that it is impossible for a finite magnitude to have an infinite force, and also that it is impossible for a thing to be moved by a finite magnitude during an infinite time. But *the first movent causes a motion that is eternal and does cause it during an infinite time. It is clear, therefore, that the first movent is indivisible and is without parts and without magnitude.*³²³

Thomas's Commentary" summarizes the point:

Deinde cum dicit: vertigo autem etc., manifestat quid sit vertigo; et dicit quod vertigo est quidam motus compositus ex tractu et pulsu. Cum enim aliquid vertitur, ex una parte pellitur et ex alia trahitur.

906. Then at (689) he explains twirling as a motion composed of a pull and a push, for when something is twirled, it is on the one hand pushed, and on the other being pulled.³²⁴

Deinde cum dicit: proiectio autem etc., excludit quandam obiectionem, quae accidere potest circa pulsionem. De tractione enim dictum est quod motus

908. Then at (692) he answers an objection that could be lodged against the push. For it was said of pulling that the motion of the puller is not separated from what is being

³²³ Aristotle, Physics, translated by R.P. Hardie and R.K. Gaye

<https://ebooks.adelaide.edu.au/a/aristotle/physics/contents.html>

The web edition published by [eBooks@Adelaide](https://ebooks.adelaide.edu.au)

³²⁴ Commentaria in octo libros Physicorum by Thomas Aquinas Books I-II translated by

Richard J. Blackwell, Richard J. Spath & W. Edmund Thirlkel Yale U.P., 1963;

Books III-VIII translated by Pierre H. Conway, O.P. College of St. Mary of the Springs, Columbus, Ohio

1958-1962; html edition by Joseph Kenny, O.P.

<https://dhsprory.org/thomas/Physics.htm>

trahentis non separetur ab eo quod trahitur: sed in pulsione dictum est quod aliquando deficit pellens ab eo quod pellitur. Et talis pulsio vocatur expulsio, cuius species est proiectio, quae est quando aliquid pellitur cum quadam violentia in remotum; et sic in proiectione videtur quod movens et motum non sint simul.

Et ideo ad hoc excludendum dicit, quod proiectio est, quando motus eius quod fertur, sit velocior quam motus naturalis, et hoc propter aliquam fortem impulsionem factam. Cum enim aliquid proiicitur ex forti impulsionem, movetur aer velociori motu quam sit motus eius naturalis; et ad motum aeris defertur corpus proiectum. Et quamdiu durat aer impulsus, tamdiu proiectum movetur: et hoc est quod dicit, quod facta tali impulsionem, tamdiu accidit aliquid ferri proiectum, quamdiu in aere sit fortior motus quam eius motus naturalis.

Sic ergo remota hac dubitatione, concludit quod movens et motum sint simul, et quod inter ea nihil est medium.

Postquam philosophus ostendit duo quae sunt necessaria ad principale propositum ostendendum, scilicet quod potentia finita non possit movere tempore infinito, et quod potentia infinita non possit esse in magnitudine finita; nunc accedit ad probandum tertium, scilicet unitatem primi motoris. Et circa hoc duo facit: primo enim ostendit quod propter diversitatem motorum, deficit continuas vel unitas motus, in quibusdam mobilibus quae videntur continue moveri; secundo ostendit ex hoc quod primum motorem necesse est esse unum, ibi: quoniam autem in his et cetera.

pulled. But in pushing it was said that the pusher is in certain cases removed from the object pushed. Such a case of pushing is called “projection,” which occurs when something is pushed with some force into the distance. Hence it seems that in this case the mover and the moved are not together.

To answer this he says that projecting occurs when the motion of what is thrown becomes faster than its natural motion on account of a strong impulse. For when something is projected by a strong push, the air is moved with a motion swifter than its natural motion, and with air’s motion the projected body is carried along. And so long as the air stays pushed, so long does the projectile remain in motion. This is what Aristotle says, namely, that when such a push is made, so long as there remains in the air a motion stronger than its natural motion, so long does the projectile remain in motion.

Thus, with this objection answered, he concludes that the mover and the moved are together, and that nothing intervenes between the two.

1160. After proving two of the things needed for demonstrating his proposition, namely, that a finite power cannot move in an infinite time, and that an infinite power cannot exist in a finite magnitude, the Philosopher now starts to prove the third, namely, the unity of the first mover. About this he does two things: First he shows that on account of the diversity of movers, the continuity or unity of motion fails in certain mobiles that seem to be in continuous motion; Secondly, he shows from this that the first mover is necessarily one, (L. 23).

Circa primum tria facit: primo enim movet dubitationem de his quae proiciuntur; secundo solvit dubitationem, ibi: necesse autem etc.; tertio ostendit ex hoc quod motus corporis proiecti non est continuus, ibi: hic quidem igitur et cetera.

Circa primum duo facit: primo ponit dubitationem; secundo excludit quandam solutionem, ibi: si autem simul et cetera.

Proponit ergo dubitationem primo de his quae feruntur proiecta: quae talis est. Ostensum est supra in principio huius octavi, quod omne quod movetur, ab alio movetur, dummodo non sit de illis quae movent seipsa, sicut sunt animalia; de quorum numero non est lapis proiectus. Movet autem corporale per contactum. Est ergo dubitatio quomodo proiecta continue moventur, etiam postquam non tanguntur a movente. Videtur enim quod moveantur, nullo movente ipsa.

Deinde cum dicit: si autem simul movet etc., excludit quandam solutionem, quae dicitur fuisse Platonis, qui dicebat quod proiciens qui primo movit lapidem, simul etiam cum lapide movit aliquid aliud, scilicet aerem, et aer motus movet lapidem etiam post contactum projectoris.

Sed hanc solutionem excludit: quia similiter videtur impossibile quod moveatur aer non tangente neque movente primo, scilicet projectore, sicut erat impossibile de lapide; sed videtur esse necessarium quod simul dum primum movens movet, omnia moveantur, et dum primum movens quiescit, idest cessat a movendo, omnia quiescant; quamvis etiam aliquid motum a primo movente, sicut lapis, faciat aliquid moveri, sicut id quod primo movit movebat.

About the first he does three things: First he raises a doubt about projectiles; Secondly, he resolves the doubt, at 1162; Thirdly, from this he shows that the motion of a projectile is not continuous, at 1163.

About the first he does two things: First he states the doubt; Secondly, he rejects one solution, at 1161.

He proposes therefore first (909) a doubt about projectiles. It is this: It was proved above in the beginning of this Book that whatever is being moved is being moved by another, provided we are not referring to things that move themselves, such as animals, of which a projected stone is not one. Now a bodily thing causes motion through contact. Therefore there is doubt as to how projectiles remain in continuous motion even after contact with the mover ceases. For they seem to be moved without anything moving them.

1161. Then at (909) he rejects a solution attributed to Plato who said that the projector who first moves a stone moves not only the stone but something else, namely, the air, and the moved air moves the stone, even after contact by the projector.

But he rejects this solution, on the ground that it appears equally as impossible for the air to be moved when the first mover, namely, the projector, is no longer in contact with it, nor moving it, as it was for the stone. But rather it seems to be necessary that while the first mover is acting, all are being moved, and when the first mover rests, i.e., ceases to act, all rest, although also something moved by the first mover, such as the stone, may cause something to be moved, just as the original mover did.

Deinde cum dicit: necesse autem hoc quidem dicere etc., ponit suam solutionem. Et dicit quod si secundum movens movet motum a primo movente, necesse est hoc dicere, quod primum movens, scilicet proiciens, det secundo moventi, scilicet aeri vel aquae vel cuicumque tali corpori quod est natum movere corpus proiectum, ut possit movere et ut possit moveri: utrumque enim habet aer vel aqua a proiciente, et quod moveat et quod moveatur. Sed quia movere et moveri non de necessitate sunt in eodem, cum inveniatur aliquod movens non motum; non simul pausat movens et quod movetur, idest aer motus a proiciente non simul cessat movere et moveri; sed statim cum primum movens, idest proiciens, cessaverit movere, et aer cessat moveri, sed adhuc movet.

Et hoc manifestum est ad sensum: quia quando aliquod mobile iam pervenerit ad terminum motus, in ipso ultimo perventionis potest movere; sed tunc non movetur, sed est in motum esse. Dum autem secundum movens movet, movetur illud quod est habitum, idest consequenter se habens ad ipsum. Et de hoc etiam tertio est eadem ratio, quia remanet movens etiam quando non movetur. Et quia secundum movens habet minus de potentia movendi quam primum, et tertium quam secundum, oportet quod cesset motus projectionis; ex hoc scilicet quod minor est virtus movendi in habito, idest in consequenti, quam in eo in quo primo fuit.

Et sic tandem, propter minorationem virtutis movendi, venietur ad hoc quod id quod erit prius respectu sui consequentis, non faciet ipsum consequens habere potentiam movendi, sed faciet ipsum tantummodo moveri. Et tunc necesse est

1162. Then at (910) he gives his own solution. And he says that if the second mover causes motion insofar as it is moved by the first mover, then it is necessary to say that the first mover, namely, the thrower, gives to the second mover, namely, the air or water or any such body apt to move a thrown body, the ability both to cause motion and to be moved; for both of these are received into the air or water from the thrower, namely, to cause motion and to be moved. But since to cause motion, and to be moved, are not of necessity in the same thing—since there is found a mover that is not itself moved—the mover and moved do not pause simultaneously, i.e., the air moved by the thrower does not simultaneously cease causing motion and cease being moved, but as soon as the thrower ceases acting, the air ceases to be moved, but still moves.

And this is evident to the senses. For when a mobile has now arrived at the terminus of its motion, it is able to cause motion in the ultimate moment of its arrival, at which time it is no longer being moved but is in the state of having been moved. Now while the second mover moves, that which is “had,” i.e., which is next to it, is being moved. And the same applies to this third, for it remains a mover even when it is not being moved. And because a second mover has less power for acting than did the first, and the third less than the second, the motion called “projection” must cease, on account of the fact, namely, that the power for moving is less in the “had,” i.e., the subsequent, mover than in that in which it was first.

Thus at length, on account of the diminution of the power to move, a state is reached where that which was prior with respect to the one following will not confer upon the one following the power to cause motion but will solely cause it to be moved.

quod simul dum hoc ultimum movens pausat a movendo, et motum ab ipso pausabit a moveri; et per consequens pausabit totus motus, quia ultimum motum non potest movere aliquid aliud.

Deinde cum dicit: hic quidem igitur etc., concludit ex praemissis quod iste motus projectionis non sit continuus.

Dicit ergo quod hic motus, scilicet projectionis, fit in corporibus quae contingit aliquando moveri et aliquando quiescere, si qua vere sunt quibus conveniat. Quod patet ex dictis: quiescit enim projectionis motus per defectum virtutis movendi, ut dictum est.

Patet etiam ex praemissis quod iste motus non est continuus, etsi continuus videatur. Videtur enim continuus propter mobilis unitatem: non tamen est continuus, quia sunt diversa moventia, ut dictum est. Aut enim iste motus est a pluribus moventibus consequenter se habentibus, aut etiam a pluribus moventibus se tangentibus (quomodo autem differant consequenter se habere et tangere, supra dictum est in quinto et sexto).

Et manifestum est ad sensum, quod utroque modo se habentibus diversis moventibus, possunt movere unum mobile, secundum quod ipsa moventur ab aliquo primo movente. In his enim quae moventur motu projectionis, non est unum movens tantum, sed multa habita ad invicem, et consequenter se habentia et contacta. Et quia diversitas non est absque divisione, ideo praedictus projectionis motus fit per medium facile

And at that time it is necessary that when this last mover ceases to act upon the one following it, simultaneously that moved by it will cease being moved. Consequently, the entire motion will cease, because the last moved object is unable to cause motion in any other.

1163. Then at (911) he concludes from the foregoing that a motion of projection is not continuous.

He says, therefore, that this motion, namely, that of projection, comes to be in bodies that are capable of being moved at one time and of resting at another time—if indeed there are bodies to which such a motion belongs. And this is evident from what was said; for the motion called “projection” ceases through a failing of the power to cause motion, as has been said.

It is also evident from the foregoing that this motion is not continuous, although it appears to be continuous. For it seems to be continuous, because there is one mobile involved; yet it is not continuous, because there are diverse movers, as has been said. For either that motion results from a series of consecutive movers or from a series of movers that are in contact—(how “consecutive” and “in contact” differ has been explained above in Books V and VI).

And it is plain to sense that in both cases the different movers can move one mobile inasmuch as they are moved by some first mover. For in things that are moved in a way that projectiles are moved, there is not just one mover but many “had” to each other (i.e., following each other), which are consecutive and in contact. And because diversity is not without division, the projection in question comes to be through a medium that is easy to divided namely, air

divisibile, scilicet per aerem et aquam, in quibus propter divisionem de facili contingit diversitas moventium.

Quem quidem motum projectionis aliqui dicunt esse antiperistasim, idest contra-resistantiam; ex eo scilicet quod aer circumstans motus, aliquo modo movet corpus proiectum, sicut supra dictum est in quarto. Sed non potest praedicta dubitatio solvi nisi eo modo qui positus est: quia si ponatur causa projectionis antiperistasis aeris, sequitur quod omnia simul moveant et moveantur, idest quod totus aer simul moveat et moveatur, et per consequens quod simul quiescant omnia; quod patet esse falsum. Videmus enim unum aliquid esse quod continue movetur, a quocumque moveatur. Quod ideo dico, quia non habet unum et idem determinatum movens, sed moventia diversa.

Deinde cum dicit: aut enim ipsum oportet etc., solvit praedictam dubitationem: et ostendit quod nullum movens motum potest causare continuum motum.

Necesse est enim dicere, quod mobile quod continue videtur moveri, aut moveatur immediate per totum motum ab ipso movente moto; aut per multa media, quorum unum contingatur ab alio, sicut dictum est in motu projectionis. Et ista divisio habet aequaliter locum, sive movens motum moveat impellendo, sive trahendo, sive utroque modo, ut accidit in motu vertiginis, ut supra in septimo habitum est. Nec contingit pluribus modis aliquid localiter moveri a movente moto, per se et non per accidens (quod enim vehitur, movetur per accidens).

Et quia dixerat quod in his quae proiciuntur, est aliud et aliud movens; et

and water, in which a diversity of movers can function on account of the easy divisibility of the medium.

This motion of projection is by some called *antiperistasis*, i.e., contra-resistance, on the ground that the surrounding air being set in motion somehow moves the projectile, as was said in Book IV. However, the problem under discussion can be solved in no other way than the way mentioned. Because, if the contra-resistance of the air is the cause of the projection, it follows that all the elements involved are moving and being moved simultaneously, i.e., that the entire air is simultaneously acting and being acted upon and, consequently, that all would cease simultaneously. But this is evidently false, For we see some one thing being moved continuously no matter what moves it. And I say this because it does not have one and the same determinate mover, but diverse movers.

1171. Then at (917) he resolves this difficulty and shows that no moved mover can cause a continuous motion.

For it is necessary to say that a mobile that is seemingly being moved continuously is being moved either immediately as to the whole motion by a moved mover, or else through many intermediates, one in contact with the other, as was said with respect to projection. And this division is valid whether the moved mover acts by pushing or pulling or both (as in twirling), as was explained in Book VII. Nor does it happen that a thing is moved locally by a moved mover in more than one way per se and not *per accidens* (for something being carried is being moved *per accidens*).

And because he had said that, in things that are projected, the mover is constantly

hoc videtur esse falsum, propter hoc quod corpus proiectum continue videtur moveri ab aere uno existente: ideo ad hoc excludendum, subiungit quod cum aer aut aqua sit facile divisibilis, ex hoc movet quasi aliud et aliud movens; sed tamen movet sicut semper motus quamdiu durat motus corporis proiecti; et quamvis videatur esse unus aer, tamen est alius et alius per divisionem.

other and other, and this seems to be false because the projected body seems to be continually moved by an air which remains one, he therefore, in order to refute this, adds that it is because air or water are easy to divide that, so to speak, now one, now another, mover acts, but yet it acts as if being continually moved, so long as the motion of the projectile lasts; and although the air seems one, nevertheless it is other and other through division.

Utrobique autem, idest sive movens motum moveat impellendo sive trahendo, non potest esse unus motus, sed oportet quod sit habitus, idest consequenter se habens, propter rationem quae supra posita est in motu projectionis, scilicet ex diversitate moventium.

But in either case, i.e., whether the moved mover acts by pushing or by pulling, the motion cannot be one but must be “had,” i.e., consecutive—for the reason given above, when the motion of projection was discussed, namely, on account of the diversity of movers.

Relinquitur ergo quod solus motus qui est a motore immobili, possit esse semper continuus: quia movens se habet semper similiter secundum eandem dispositionem in seipso; et ideo semper et continue potest se similiter habere ad mobile, ut scilicet semper uniformiter moveat ipsum.

What remains, therefore is that only the motion from an immobile mover can be forever continuous, because this mover, remains always “similar,” according to the same disposition in itself. For that reason it can maintain itself always and continuously in a similar way with respect to the mobile, so as, namely, to move it uniformly.

Est autem hic attendendum quod sempiternitatem continui motus attribuit hic philosophus immobilitati motoris, supra autem infinitae potentiae eius. Nam sempiternitas motus continui, si attendatur secundum reiterationem motus, respicit immobilitatem moventis; quia si semper similiter se habet, poterit semper reiterare eundem motum. Sed infinita virtus moventis respicit ad totam motus sempiternitatem vel infinitatem per se, sicut supra dictum est.

But it should be noted that the Philosopher here attributes eternity of continuous motion to the immobility of the mover, whereas above he attributed it to its infinite power. For eternity of continuous motion, if regarded with respect to the motion’s repetition, looks to the immobility of the mover, since, if it always remains constant with itself, it can always repeat the same motion. But the infinite power of the mover regards the motion’s whole perpetuity or infinity *per se*, was said above.

Est etiam attendendum quod, quia nullum

It should be noted, too, that because no

movens motum potest causare motum continuum sempiternum, ideo in XI Metaphys. probare intendit multitudinem motorum immobilium secundum multitudinem caelestium motuum, quasi illa consideratio sequatur ad istam.

Deinde cum dicit: determinatis autem his etc., ex praemissis demonstratis concludit principale intentum. Et dicit quod ex praedeterminatis manifestum est, quod impossibile est primum movens immobile habere aliquam magnitudinem, vel ita quod ipsum sit corpus, vel quod sit virtus in corpore. Quia si haberet aliquam magnitudinem, aut esset finita aut infinita. Ostensum est autem supra in tertio, in communibus naturae, quod non est possibile esse aliquam magnitudinem infinitam. Relinquitur ergo, si habet magnitudinem, quod habeat magnitudinem finitam. Sed quod non habeat magnitudinem finitam, ex hoc probatur, quod impossibile est finitam magnitudinem habere potentiam infinitam. Primum autem movens immobile necesse est habere potentiam infinitam: ergo non potest habere magnitudinem finitam.

Quod autem primum movens immobile necesse sit habere potentiam infinitam, probat per id quod demonstratum est supra, quod impossibile est a potentia finita moveri aliquid secundum infinitum tempus. Primum autem movens causat perpetuum motum et continuum, et tempore infinito unus et idem existens: alioquin motus ille non esset continuus. Ergo habet potentiam infinitam.

Et sic non habet magnitudinem finitam; nec infinitam magnitudinem possibile est esse. Manifestum est itaque quod primum movens est indivisibile: et quia nullam

moved mover can cause a perpetual continuous motion, he therefore, in *Metaphysics* XI, intends to prove a number of immobile movers according to the number of the heavenly movements, as though that consideration followed upon this.

1172. Then at (918) from the premises already demonstrated he concludes to the main conclusion. And he says that from the foregoing it is plainly impossible for the first immobile mover to have any magnitude or to be a body or to be a power residing in a body. For if it had any magnitude, it would be either finite or infinite. But it was proved in Book III, when nature in common was discussed, that an infinite magnitude is not possible. What remains, therefore, is that, if it does have magnitude, it will have a finite magnitude. But that such is not so he proves on the ground that it is impossible for a finite magnitude to possess infinite power, such as the first immobile mover must necessarily have. Therefore, it cannot have a finite magnitude.

But that the first immobile mover must have infinite power he proves from something previously demonstrated, namely, that it is impossible for something to be moved for an infinite time by a finite power. Now, the first mover causes a motion that is perpetual and continuous, and is one and the same for infinite time, for otherwise this motion would not be continuous. Therefore, it has infinite power.

Thus it does not have a finite magnitude, and an infinite magnitude is impossible to be. It is plain, therefore, that the first mover is indivisible, both as having no

partem habet, sicut etiam est indivisibile punctum; et etiam sicut omnino nullam habens magnitudinem, quasi extra genus magnitudinis existens.

part, as even a point is indivisible, and as wholly without magnitude, as though existing outside the genus of magnitude.

Et sic terminat philosophus considerationem communem de rebus naturalibus, in primo principio totius naturae, qui est super omnia Deus benedictus in saecula. Amen.

*And thus does the Philosopher in his general consideration of natural things terminate at the first principle of the whole of nature, Who is the One above all things, the ever blessed God. Amen.*³²⁵

In the texts adduced above, the problem of the medium of cognition was juxtaposed (and intertwined to some extent too) with the problem of physical causality. Albeit the relation of them both is shown by Thomas himself, it remains to settle it distinctly in the context of the demonstration of the existence of God.

Now, should the term of the medium of cognition be applied not only to the sensed material objects, but reach beyond them (and be extended in such a way), the nature of cognition (a specific attitude to this medium) must be elucidated.

Let us adduce once more the biblical text quoted above: omnes homines vident eum [Deum] unusquisque intuetur procul. (All men see him, every one beholdeth afar off; Douay-Rheims Bible).³²⁶ Now, how is it possible for humans to see God? What (if any) is the medium of this “seeing”?

If light had been the tissue of the universe (as Robert Grosseteste assumed), seeing the

³²⁵ Ibid.

³²⁶ Compendium theologiae, lib. 2 cap. 8 co. Indicat se quippe Deus aliquantulum hominibus naturali quadam cognitione cognoscendum per hoc quod hominibus lumen rationis infundit, et creaturas visibiles condidit, in quibus bonitatis et sapientiae ipsius aliquantulum relucunt vestigia, secundum illud Rom. I, 19: quod notum est Dei, idest quod cognoscibile est de Deo per naturalem rationem, manifestum est illis, scilicet gentilibus hominibus: Deus enim illis revelavit, scilicet per lumen rationis, et per creaturas quas condidit, unde subdit: invisibilia enim ipsius a creatura mundi per ea quae facta sunt, intellecta conspiciuntur, sempiterna quoque eius virtus et divinitas. Ista tamen cognitio imperfecta est, quia nec ipsa creatura perfecte ab homine conspici potest, et etiam creatura deficit a perfecta Dei repraesentatione, quia virtus huius causae in infinitum excedit effectum, unde dicitur Iob XI, 7: forsitan vestigia Dei comprehendes, et usque ad perfectum omnipotentem reperiens?, et Iob XXXVI, 25, postquam dixit: omnes homines vident eum: subdit: unusquisque intuetur procul. Ex huius autem cognitionis imperfectione consecutum est ut homines a veritate discedentes diversimode circa cognitionem Dei errarent, intantum quod sicut apostolus dicit Roman. I, 21-22 quidam evanuerunt in cogitationibus suis, et obscuratum est insipiens cor eorum: dicentes enim se esse sapientes, stulti facti sunt, et mutaverunt gloriam incorruptibilis Dei in similitudinem corruptibilis hominis, et volucrum et quadrupedum et serpentium.

Principle behind the objects substantiated by It, would be (at least theoretically) possible. Similarly, what ontologism says about the “original” seeing of God’s essence before seeing anything else subsequently could make such a continuation imaginable. But ontologism reverses the natural order of cognition, whereas the proof which is the subject of the present book tries to follow it. Similarly, the statement that light is the something of the “matter” of the universe seems to be, at best, metaphorical.

Let us then, address the problem of the nature of light (and its propagation) once more. In the material world, the propagation is always hampered and the energy dissipated. The propagation is cascade like; and the material objects are “scales” to pass. If God were the first source of the cosmic energy, He would be seen through as many obstacles as many are objects which hamper the transfer of the energy. Now, the problem is how to see through those objects nonetheless. What the nature of seeing must be so as to reach *beyond*?

The sense perception does not seem to suffice for seeing anything but material objects. It is incapable of removing the barriers in question. Animals could see nothing save what forms the material environment they can only live in. If the human cognition is any different, it must be more than just “seeing”, or else not only the outer side of things (their phenomena) is “seen”, but their inner side (their nature) too. But then, the seeing will be equal to knowing things intellectually and abstractedly. Both natures of objects must be known and their relations, as well as the relation of them all to what is *beyond*. Thus, the objects “seen” become the links of the chain of causes, the infinity of which is questioned in the minor premise of the Proof. Both causes as such might be concerned (and the Second Thomasian Way formulated) and the *causes of motion*; those more “manifest” ones (and the First Thomasian Way built). Once the objects become *links*, the continuation to *what is beyond* them appears possible.

The identification of objects in this manner is difficult (or even despaired to be obtained; e.g. by Kant). It must be hard in everyday cognition indeed, but in particular sciences also. Now, the identification is the proper task of metaphysics. Without it, human existence would be tethered to material objects and the perspectives of the personal spiritual development destroyed.

CHAPTER X.

BEING TOWARDS THE PLENITUDE OF BEING.

CONCLUSION

In the last Section of the preceding Chapter, in points (1) – (15), a (tentative) summary of

the book was already presented. However, this summary would be incomplete without addressing what Thomas himself thought to be the necessary supplement of Aristotelianism. His attitude to the Philosopher (Aristotle was called the one with the capital “P” by scholastics) was disclosed in what was about to be named later on “The Philosophical Summa”.

“Summa contra gentiles” addresses predominantly purely philosophical questions indeed, albeit the objectives declared in its Preface were apologetic, and the fourth part of the work – purely theological. Moreover, Summa was written not that much *against* gentiles, as rather *for* them. “Pagans” were those accepting the philosophical stance of Aristotle, but refusing to draw conclusions therefrom uncompromisingly enough. A common denominator was spotted (and the possibility of the rational argumentation too), but the “errors” of those who claimed to be philosophers denounced too. Firstly, the claim that substance is the subject matter of the supreme science was *in fact* incompatible with the statement (of Aristotle himself) that metaphysics is the most general science. For substance *comes* to being, whereas the supreme science should consider being as such and not just the one category it appears in. Secondly, the complement must come not from the subject matter of philosophy, but from the part of philosophizing subjects. The autonomy of metaphysics must not be violated by any guise of subjectivism, but on the other hand, the possibility must not be excluded to accept what the Transcendent Truth wills to manifest of herself (if It wills to indeed). So, subjectivity *does not pose anything*, it *demand*s not posing (the obstacles) only.

Thus, besides metaphysics, which settles the sense of being in purely naturalist terms, a perspective must not be rejected to elucidate the sense of the human existence in terms of the Ultimate entering the human history – if such a presence can be rationally witnessed to.

In the present book, a discipline of natural reasoning was tried to be maintained. Still, for the sake of the very objectivity two points must be addressed. In modernity, the same discipline was apparently abandoned, and perhaps on purpose so. Thus, the human destiny appeared (e.g. in Fichte or Sartre) a hybrid of the natural and what was for some reasons accepted as, or in the place of, the supernatural. An oxymoronic “Religion within the bounds of bare reason” appeared in Kant already. Thus, that the realms be severed, they must be seen distinctly first. Secondly, Aristotle’s position in the history of the Civilization is unique and his personal altitude to reason practically impossible to copy. The Greek philosophy is a buttress of the Civilization. But the other one, and no less important, is Christianity. Both science and Religion define Europe’s identity. Subjectively, it is impossible (or at least hardly possible) to sever them, and it would be dishonest to pretend that the same objectives were put forward in the present book as those espoused by Aristotle. Nonetheless, it was tried to define the relation of the two spheres as accurately as only possible.

In Thomas, the problem of the ultimate end of man is set against the background of the ultimate end of the world. The very titles of the main Chapters of the Summa

announce in general the way of reasoning Thomas adopted. No summary of this masterpiece of the human intellect's way to God is workable. To the contrary: the very titles of the chapters of Book III might serve as a summary of what was tried to be systemized here:

Caput 2. Quod omne agens agit propter finem; How every agent acts for an end.

Caput 3. Quod omne agens agit propter bonum; That every agent acts for a good.

Caput 4. Quod malum est praeter intentionem in rebus; That evil in things is not intended.

Caput 10. Quod causa mali est bonum; That good is the cause of evil.

Caput 11. Quod malum fundatur in bono; That evil is based on the good.

Caput 12. Quod malum non totaliter consumit bonum; That evil does not wholly destroy good.

Caput 15. Quod non est summum malum; That there is no highest evil.

Caput 16. Quod finis cuiuslibet rei est bonum; That the end of everything is a good.

Caput 17. Quod omnia ordinantur in unum finem, qui est Deus; That all things are ordered to one end Who is God.

Caput 18. Quomodo Deus sit finis rerum; How God is the end of all things.

Caput 19. Quod omnia intendunt assimilari Deo; That all things tend to become like God.

Caput 20. Quomodo res imitentur divinam bonitatem; How things imitate divine goodness.

Caput 21. Quod res intendunt naturaliter assimilari Deo in hoc quod est causa; That things naturally tend to become like God inasmuch as He is a cause.

Caput 22. Quomodo diversimode res ordinantur in suos fines; How things are ordered to their ends in various ways.

Caput 23. Quod motus caeli est a principio intellectivo; That the motion of the heavens comes from an intellectual principle.

Caput 24. Quomodo appetunt bonum etiam quae cognitione carent; How even beings devoid of knowledge seek the good.

Caput 25. Quod intelligere Deum est finis omnis intellectualis substantiae; That to understand God is the end of every intellectual substance.

Caput 37. Quod ultima felicitas hominis consistit in contemplatione Dei; That the ultimate felicity of man consists in the contemplation of God.

Caput 48. Quod ultima hominis felicitas non sit in hac vita; That man's ultimate felicity does not come in this life.

Caput 51. Quomodo Deus per essentiam videatur; How God may be seen in His essence.

Caput 53. Quod intellectus creatus indiget aliqua influentia divini luminis ad hoc quod Deum per essentiam videat; That the created intellect needs an influx of divine light in order to see God through His essence.

Caput 55. Quod intellectus creatus non comprehendit divinam substantiam; That the created intellect does not comprehend the divine substance.

Caput 57. Quod omnis intellectus, cuiuscumque gradus, particeps esse potest divinae visionis; That every intellect, whatever its level, can be a participant in the divine vision.

Caput 58. Quod unus alio perfectius Deum videre potest; That one being is able to see God more perfectly than another.

Caput 61. Quod per visionem Dei aliquis fit particeps vitae aeternae; That through the vision of God one becomes a partaker of eternal life.

Caput 62. Quod videntes Deum in perpetuum eum videbunt; That those who see God will see Him perpetually.

Caput 63. Qualiter in illa ultima felicitate omne desiderium hominis completur; How man's every desire is fulfilled in that ultimate felicity.

Caput 64. Quod Deus sua providentia gubernat res; That God governs things by His providence.

Caput 65. Quod Deus conservat res in esse; That God preserves things in being.

Caput 66. Quod nihil dat esse nisi in quantum agit in virtute divina; That nothing gives being except in so far as it.

Caput 67. Quod Deus est causa operandi omnibus operantibus; That God is the cause of operation for all things that operate.

Caput 68. Quod Deus est ubique; That God is everywhere.

Caput 69. De opinione eorum qui rebus naturalibus proprias subtrahunt actiones; The opinion of those who take away proper actions from natural things.

Caput 70. Quomodo idem effectus sit a Deo et a natura agente; How the same effect is from God and from a natural agent.

Caput 71. Quod divina providentia non excludit totaliter malum a rebus; That divine providence does not entirely exclude evil from things.

Caput 72. Quod divina providentia non excludit contingentiam a rebus; That divine providence does not exclude contingency from things.

Caput 73. Quod divina providentia non excludit arbitrii libertatem; That divine providence does not exclude freedom of choice.

Caput 74. Quod divina providentia non excludit fortunam et casum; That divine providence does not exclude fortune and chance.

Caput 75. Quod providentia Dei sit singularium contingentium; That God's providence applies to contingent singulars.

Caput 76. Quod providentia Dei sit omnium singularium immediate; That God's providence applies immediately to all singulars.

Caput 77. Quod executio divinae providentiae fit mediantibus causis secundis; That the execution of divine providence is accomplished by means of secondary causes³²⁷.

Caput 89. Quod motus voluntatis causatur a Deo, et non solum potentia voluntatis; That

³²⁷ CONTRA GENTILES; BOOK THREE: PROVIDENCE; Q. 1-83; translated by Vernon J. Bourke
<https://dhspriority.org/thomas/ContraGentiles3a.htm>

the movement of the will is caused by God and not only the power of the will.

Caput 90. Quod electiones et voluntates humanae subduntur divinae providentiae; That human acts of choice and of will are subject to divine providence.³²⁸

Having the scheme in mind, we might try to address the main problem of metaphysics once more.

1. Being

Lest our being-in-the-world be dreamt only, certain constants of the world we live in must be known. History (and temporality) cannot define the sense of human being. If Ovid (as supposed) says: *tempora mutantur et nos mutamur in illis* ("Times are changed, we also are changed with them"), then nothing save a deplorable fact is stated that some people are not active enough to master the time of their lives. According to Aristotle, man differs from animals and from non-cognizant things all the more in that he/she resists the flux of events and grasps a framework of the laws that govern the motion of the universe. Not only, however, are elementary constants knowable (as those proposed in physics). Man is able to grasp the essences of all things, including those more complex ones and define his/her essence (human nature) in the framework of the laws. Human existence begins with a rudimentary cognition, but the separate problem is where it terminates at; whereto it is directed. Is the sequence of generations the only possible guise of immortality achievable for man? Is man "immortal" in the way which must be called precarious after all, as the modern generations look down at the past ones as inferior and backward? In the sequence of generations, those subsequent ones are not expected (and all the less demanded) to implement fixed objectives and values imparted to, and intended by, those preceding them. The very idea of "progress" contradicts the traditional notion of the spiritual heritage. Assuming the very wording of the problem (the problem of generations), the sense of generating might be questioned nonetheless, which was the case in Thomas indeed.

Not only children can be begotten and genuine values imparted to them by their parents. First of all, the words of the intellect are conceived in our mind, and those spoken out aloud (the words of promise, fidelity, trust and hope) are but dependent upon those begotten in our mind. Despite being variegated as to their exterior shape (there is ca

³²⁸ CONTRA GENTILES; BOOK THREE: PROVIDENCE; Chapters 84-163; translated by Vernon J. Bourke

one hundred thousand of them in English) they all have, according to Thomas, something in common. They all express *some mode of being*, whereas *the word of being* precedes them, and is the first conceived in the human intellect. Kant may have had some inkling of the fact; for his transcendental ideas condition the possibility of wording anything at all, in the way similar to how the first concept of the intellect, Thomas speaks of, does. The only problem is that the word of being abides deeply *in our mind*; *not above it* as Kant imagined. True, there is the Word with the capital “W” above all human reason Psalm 96, 9 addresses thus: “the most high Lord over all the earth: thou art exalted exceedingly above all gods” (Douay-Rheims Bible). But the Word dwells amongst us in the way different to the natural words begotten in the contact with the physical world.

The Revelation speaks of what could (and should) be otherwise known about *our nature* too. If Augustine says: *imago Trinitatis est in homine secundum mentem*, not only a truth about what is absolutely above human understanding is expressed. The truth about our natural spiritual faculties is revealed also, and a paradox too; for Augustine says of God: “interior intimo meo et superior summo meo” (Confesiones, III, 6, 11) (“higher than my highest and more inward than my innermost self”). “The Lord is closer to us than we are to ourselves”.³²⁹

There is a deplorable devaluation of words in the contemporary culture. Some even believe that human language is no different to the “animal” one. Indeed, twaddle people are nowadays forced to listen to (in mass media) resembles gibberish closely enough. But the dignity of the human mind (*mens*) is indelible after all and image of Trinity in it also. The Image will abide in the human mind forever, no matter how deeply buried under the ashes of the twaddle. Words are spoken first in the depth of the human heart (the intellect and the will). The first one (the word of being) is *a feeble* calling for *the plenitude* of being, and the calling of man is to be recognized in it, albeit scarcely perceptible. It requires special attention to hear it. The same solicitude is required in expressing the words of: truth, fidelity and hope, which make up the genuine realm of human generating.

All other words are secondary to this original one. They all express but some mode of being; some particular aspect thereof. The original datum of the intellect might be easily overlooked and it requires a stringent discipline to reflect upon it. Otherwise, some existential possibilities to fashion a new form of language are being lost.

The possibilities appear in a language, as all verbs express some actions (and being consequently too) and all nouns some modes of participating thereof. Thus, particular sciences address some particular beings and the problem of the supreme one is that of reflecting upon being: *the first* datum of the intellect.

Still, two particular sciences bear a certain resemblance to the supreme one.

³²⁹ BENEDICT XVI; ANGELUS; Saint Peter’s Square; [Third Sunday of Advent Gaudete Sunday](#), 11 December 2011

Logics (1) tackles the being of the statements (the “is” of syllogisms first of all). The “is” of logic the most common, but phenomenally so only. It must be borne in mind that “being is manifold” Aristotle says: *πολλαχοῦ λέγεται τὸ ὄν*), and the science considering *entia rationis* is but superficially similar to that considering the real ones (De Trinitate: *utraque est circa idem subiectum quodammodo*). Disrespecting the fact, Neo-Platonists assumed that each “is” of a tongue could be copied onto the real world. More generally, each word “mirrored” the “reality”, or conversely: the words commanded it; for they created (“stiften” is the term used by Husserl) the human (or humane) world; the world of phenomena only habitable by those civilized in the manner satisfying the modern idea of humanity.

There was, in the traditional Neoplatonism, a place for knowing God. The *realitas obiectiva* of the Cartesian “innate” idea of God could have guaranteed it. The problem is, however, that “ideas” (if you like) are only real in the human mind and cannot extend beyond it and reach to the Supreme Reality. In the Kantian “transcendental logics”, there was no place for knowing God. Indeed, there is a deep gap, in Neoplatonism (no matter its guise), between the world we live in and the world we *intend* to live ultimately.

According to Aristotle (and Thomas), a certain transformation occurs at the border of the world and the human intellect. The concept of being is real in the intellect only, and after being abstracted from the sense data. Nor are words parts of the matrix called consciousness. They exist in the intellect in the sense of being generated in it, and a vital activity appears in the contact with the physical world. Naturally, there is a problem to safeguard both the spiritual character of the activity and its objective value. But problems are to be solved, not avoided.

Historically, it was Parmenides who tried to absolutize being to the effect of equaling it with thinking; much to the detriment of the cognition of nature which only bothered those who preceded him. The philosophy before Parmenides had been that of nature; for it seems natural to take EXISTING literally as APPEARING and BEING IN CHANGE. Parmenides’s philosophy marks a caesura in the Greek philosophy, but the caesura could have been a critical point too. The reaction to Heraclitus’ variabilism was understandable; for all relativism in general undermines the very foundations of science. Modern physics (2) too tackles the being changing in the universe (motion) and each mode of being could be exemplified by a mode of motion suggestively enough.

Nevertheless, the two were credited with too much. If absolutized, logics becomes barren (philosophy in Hegel is a science on science). Similarly, a sheer observation of nature, without making out its constants is likely to lead to relativism.

A remedy was sought in a science which could underpin them both. Mathematics bolstered physics (providing pure theorems) and logics (as the so called set theory; although in Russell the relation was reversed). The problem whether mathematics is able to meet the demand has already been addressed many times in the present book. Still, one problem deserves a closer attention, viz. the problem of ethics.

Its relation to mathematics has been tried to be settled at least since Spinoza, but

to no avail. In fact, the sense of human being (and acting consequently too) cannot be solved without solving the problem of being as such. The problem of ethics might be, at least in some respect, seized in terms of the relation of parts to totality. For persons are parts of an organized society and expected to act for the sake of the common good. But on the other hand, the personal development is expected to be fostered by the community. Two extremes are possible: either the “rights” of the individuals might be affirmed to such an extent that the realm of existence commonly sharable by all individuals destroyed (and some *actually* excluded, whereas “rights” given to those boisterous and importunate enough only); or conversely: individuals deprived of their rights for the sake of the idealized totality. Both modern totalitarianism and liberalism originate from the same principles laid down by Jean Jacques Rousseau. In other words: they support each other and go hand in hand in the modern times. The one is a scarecrow used by the advocates of the other. They do not bolster each other *directly*, but the emotional attitude to the one makes it impossible to eradicate the other peremptorily. The reaction must be as blind and vehement as what triggers it.

The problem of the relation in question is insolvable so long as regraded in quantitative terms. A person cannot be regarded as an element of a set. Some “rights” were believed *to extend* to some borders, similarly as magnitudes do, and the scheme has been accustomed to for all its simplicity. In “Apology”, Socrates points out to the fact that it is difficult for any individual at all to live in a morally degraded society. The liberty of one individual does not “compete” with that of the other one, but *fosters* it.

Socrates, father of the European ethics, failed (or shirked) to insert it into the framework of the philosophy of nature. Plato tried to, but the term of NATURE assumed a meaning different to that of his predecessors. Ideas were (the true) nature and being. The same problem of the relation of parts to totality was addressed in quantitative terms; for mathematics was appreciated by Plato, and perhaps exceedingly so. But Plato elaborated *a unique* philosophical theory nonetheless: the theory of participation which (despite all its drawbacks, pointed out mercilessly by Aristotle) cannot be reduced to mathematics. Horses, trees and all things in general cannot be “more” or “less” what they really are. Plato violated the non-contradiction principle. Still, the fact is not that obvious as for humans. True, the claim that some persons partake “more” of humanity than the other is nonsensical. It might be more than just this, but Plato cannot be blamed for that some (“idealists”) took it literally and some Übermenschen were about to appear along with Untermenschen in the new brave world. But on the other hand, “to be more” in sense pointed out by Gabriel Marcel (the sense was Platonic, according to Stróżewski) conveys an important purport. Some live more intensely than the others, and “are more” according to how ambitious objectives of their lives.

The cause of the fact was accounted for by Aristotle in Nicomachean Ethics:

... the activity of reason, which is contemplative, seems both to be superior in serious worth and to aim at no end beyond itself, ...

But such a life would be too high for man; for it is not in so far as he is man that he will live so, but in so far as something divine is present in him; and by so much as this is superior to our composite nature is its activity superior to that which is the exercise of the other kind of virtue. If reason is divine, then, in comparison with man, the life according to it is divine in comparison with human life. But we must not follow those who advise us, being men, to think of human things, and, being mortal, of mortal things, but must, so far as we can, make ourselves immortal, and strain every nerve to live in accordance with the best thing in us; for even if it be small in bulk, much more does it in power and worth surpass everything. This would seem, too, to be each man himself, since it is the authoritative and better part of him. It would be strange, then, if he were to choose not the life of his self but that of something else. And what we said before will apply now; that which is proper to each thing is by nature best and most pleasant for each thing; for man, therefore, the life according to reason is best and pleasantest, since *reason more than anything else is man*. This life therefore is also the happiest.³³⁰

Still, not only does Ethics address the supreme in man; neither does it settle this alone; the problem is fully understandable in metaphysics only, which speaks of the supreme life (the life of God is such as it is purely intellectual).³³¹ Nevertheless, the subject matter thereof was not set down precisely enough in Aristotle. It was going to be only in Thomas.

Etymologically (in Latin), to partake (participare) means to take a part (partem capere). Things partook, in Plato, of/in eternal species. Aristotle opposed the mathematicism vehemently right enough. But Plato's theory was more than just a jeu d'esprit, and perhaps more than Aristotle saw in it. One of the most important dialogues ("Parmenides") addressed the problem of being. Significantly enough, not a single word about the dialogue is to be found in Aristotle. The problem of being might be that of what is definitive of the human person so radically, that both respecting his/her social nature and individual dignity. The problem is visible in ethics (or the question nagging in it), but impossible to solve in it alone.

The philosophical problem of being was, in Thomas, the problem of participation. It is metaphysics that answers the predicament faced in ethics. Each individual partakes of/in own act of existence. The participation, however, is not the subject matter of metaphysics. All the less, an individual act of existence can be this. Science in general, deals with universals only. Thus, not that much (the individual) participation is addressed in it, but the general tendency of nature that makes it appear in it. All things intend to be, albeit particulars cease to be in nature. Moreover, all but humans put up with the fact. If man is any different to animals, it is because he/she tends to be forever. Some say that the

³³⁰ X, c. 7 in calce ; Nicomachean Ethics By Aristotle. Translated by W. D. Ross.
<http://classics.mit.edu/Aristotle/nicomachaen.html>

³³¹ Ibid., c. 8, 1198b; Metaphysics, XII, c. 7, 1072b 25 ss.

declaration “you will never die” lies at the core of humanity. But if it is humane to wish somebody the everlasting beatitude, it is superhuman to safeguard it nonetheless. Be that as it may, the general imperative in ethics is to foster life as such; which is not so say: indiscriminately. The life of a gnat is less worth than that of a man; and the life of a saint than that of a criminal. Human life is more than vegetating, and this part of it only is equal in e.g. Hitler and St Francis. The life is rational and volitional and the general imperative of ethics must lead to the perfecting of the faculties of the intellect and the will.

The tending to being is universal; the participation of being is not. The latter can be thwarted, and we must put up with the fact realistically. Thus, a less precious participation of being is to be sacrificed for the sake of a better one. The somatic and emotional in man must be sacrificed for the sake of the spiritual. Human nature is not a monolith. Its integration is desirable, but only workable from the part of the most formal in man and actualizing the human existence, which is the will and the intellect.

The original (Platonian) theory of participation was that of being. The very term of being was introduced by Parmenides, and Plato paid a homage to the fact in the dialogue which bears his name. Still, there was in Parmenides an absolute (an in fact barren) identity of being. Plato tried to animate the Parmenidean world. A dynamics in it appeared; for natural generating was taken into account. The paradigmatic relation of the parts (of the world) to its totality was tried to be shown. According to Aristotle, however, it was at the expense of violating the non-contradiction principle. Weak spots in the scheme were denounced.

No violation of the principle appears in Thomas’ theory of participation. Neither a sterile identity of being. In the Commentary to Aristotle’s *Metaphysics*, both essences and acts of existence the essences participate in/of are called “parts” of being (should the term of PART be used after all). From the purely philosophical coign of vantage, this general tendency to being must be identified. The separate problem is, how, and to which extent, the tendency happens to be substantiated with a new life. The problem is especially important for humans, since the real perspectives of life are expected to match our desires.

That being is the first datum of the intellect is not a Neoplatonic addition to Aristotelianism as Kremer claims. This datum (*principium incomplexum*; [simplex]) would have been worthless without its natural counterpart. The non-contradiction principle is *principium complexum* (“it is impossible to be and not to be at the same time”). All words are significant only at the expense of dropping something else. According to Thomas, the intellect forms the quasi-exemplar idea of non-being for the sake of expressing responsibly anything at all. No other “exemplars” exist in it; no positive purport of this one in it either. The silence is no less telling than the words normally spoken aloud, albeit their absence difficult to acknowledge and appreciate. In a masterpiece of music, tones are not significant without pauses separating them. Not only can we read “between the lines” of what is written. There is, in the core of nature, what is

in between the actual existence and the possibility to lose it.

There is no identifiable cause of ceasing to be: all complex material things are – so to say – “inert” in the sense of being doomed to destruction sooner or later. But the Cause that the tendency to being happens to be substantiated exists and must be demonstrated. There must be, outside the whole realm of nature, a Transcendent Cause that – so to say – “seals” the general tendency with the actual being.³³² The act of creation, however, is not the subject matter of metaphysics. The act is individual and free. What is stated in the proof of the existence of God, is the actual dependence of everything we see with our eyes on the Transcendent Cause. The creation is, according to Thomas, the act of mercy; the consequence in imparting the existence is the act of justice. The consequence must be respected. God is absolutely immutable and the algorithm of His acting cannot be changed. This regards both the natural and supernatural order of being.

The problem of ethics is that of identifying and safeguarding the most precious forms of life. It is the intellect alone that is able to make out no matter how “feeble” trace of life appearing in nature. Once identified, this form must be cherished and the new life too. An accomplished scientist happens to be admired by many (and for many reasons,

332

Summa Theologiae, Question 49. The cause of evil; Article 2. Whether the supreme good, God, is the cause of evil? On the contrary, Augustine says (QQ. 83, qu. 21), that, “God is not the author of evil because He is not the cause of tending to not-being.”

I answer that, As appears from what was said (Article 1), the evil which consists in the defect of action is always caused by the defect of the agent. But in God there is no defect, but the highest perfection, as was shown above (I:4:1). Hence, the evil which consists in defect of action, or which is caused by defect of the agent, is not reduced to God as to its cause.

But the evil which consists in the corruption of some things is reduced to God as the cause. And this appears as regards both natural things and voluntary things. For it was said (Article 1) that some agent inasmuch as it produces by its power a form to which follows corruption and defect, causes by its power that corruption and defect. But it is manifest that the form which God chiefly intends in things created is the good of the order of the universe. Now, the order of the universe requires, as was said above (I:22:2 ad 2; I:48:2), that there should be some things that can, and do sometimes, fail. And thus God, by causing in things the good of the order of the universe, consequently and as it were by accident, causes the corruptions of things, according to 1 Samuel 2:6: “The Lord killeth and maketh alive.” But when we read that “God hath not made death” (Wisdom 1:13), the sense is that God does not will death for its own sake. Nevertheless the order of justice belongs to the order of the universe; and this requires that penalty should be dealt out to sinners. And so God is the author of the evil which is penalty, but not of the evil which is fault, by reason of what is said above.

The Summa Theologiæ of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight

<http://www.newadvent.org/summa/>

for that matter too). But some years before, the beginnings of his existence must have been spotted and harbored by a loving and sensitive *woman's heart* (her intellect and will). No manly heart is sensitive enough to do this. The same holds true as for the supernatural order. There is but one Person who knows perfectly the mystery of God's heart willing to communicate life to all humans.

All beings desire the Ultimate (in some way) and none are deserted by It save those which disrespect the general rule according to which all beings are directed to the Ultimate Cause. Animals do not "disrespect" it in the normal sense of the word (they do not despise the moral law), but in the sense of being unable to know it. That is why they must die. Humans, on the other hand, are both capable of, and obliged to, respect the rule. Consequently, they are responsible for the choice.

Besides the ordinary algorithm of acting assumed by the Cause and identifiable rationally on the natural way, some other order of God's presence in the world might be (at least theoretically) identifiable. This algorithm is no less consequent, albeit existing beyond the natural objects. Thus, the second realm of human existence and being becomes visible. It can be explored rationally too, albeit not obeying the natural necessity. It must not be rejected *a priori* either.

According to Aristotle, "the common good is more divine than the individual one". The statement is bound to jar upon the sentiments of the advocates of modern "humanity". Moreover, the actual tension between the personal and the common is just practically unavoidable (Aristotle was an exception). Aristotle distinguished (as will be shown in Section 3) between the immanent and transcendent good. The former is good because of the latter; which is *theoretically* clear, but difficult to accept nonetheless. Perhaps, the actual sense of human being can only be seen in the Divine Word assuming human nature. The moral necessity of the Revelation is meant. For apart from being *absolutely* necessary for human life, the Revelation happens to be *conditionally* necessary for the intellect too.³³³

God-With-Us is the same God philosophers speak of, but acts in the way none of them could have predicted before seeing its effects. By Him, no individual (no matter how "vile" or misfortunate) is rejected unless *rejecting the way* He became to be-with-us: the algorithm of liberation.

2. The problem of the existence of God formulated in terms of classical philosophy

In Posterior Analytics, Aristotle lists four questions essential in his paradigm of science. They can be ordered according to how they appear and follow each other in a disciplined

³³³ Humani generis, Introduction; I, c. 1; Summa contra gentiles, I, c. 4.

inquiry on nature.

- 1) Firstly, the question whether something exists is posed, viz. the problematized statement *that* (*ὅτι* – *quia*) something happened. The statement must be called as such (questioned); for if it be otherwise, a sheer narration (worthless for science) will obstruct the analysis of naked facts.

That something exists is not, however, tantamount to that it is known to exist as a separate object. No existential judgment is passed originally. Thus: not that much a *naked existence* as rather the elementary *coexistence* of objects is stated. We know them originally (as was stated above) as entangled (*συγκεχυμένως* – confuse). But then, we differentiate the primitive datum equipped with the first principle of differentiation – the non-contradiction principle. We differentiate between a cause and the effect. Now, if Thomas says that “the term cause implies some influence on the being of the thing caused” (*causa importat influxum in esse causati*),³³⁴ the *esse* in question is that of the coexistence of the cause and effect. Two errors must be avoided: neither is a separate object known originally, nor a “bundle of properties” – disconnected and incidental to each other. Science in general can only determine (which is to say: differentiate) what is originally essentially related.

According to Thomas, being is the first datum of cognition (*ens primo cadit in conceptione intellectus*).³³⁵ The statement happens to be interpreted in the spirit of the aforementioned theory of existential judgments. Now, Thomas develops Aristotle’s noetic, but does not add foreign elements to it. In *Metaphysics*, we read that the originally given has but a tiny amount of entity (VII, c. 4, 1029b 4 ss.) (which is apparently at odds with what the theory of

³³⁴ Sententia Metaphysicae, lib. 5 l. 1 n. 3. Sciendum est autem, quod principium et causa licet sint idem subiecto, differunt tamen ratione. Nam hoc nomen principium ordinem quemdam importat; hoc vero nomen causa, importat influxum quemdam ad esse causati. Ordo autem prioris et posterioris invenitur in diversis; sed secundum id, quod primo est nobis notum, est ordo inventus in motu locali, eo quod ille motus est sensui manifestior.

COMMENTARY ON THE METAPHYSICS by Thomas Aquinas translated by John P. Rowan
Chicago, 1961

<https://dhspriority.org/thomas/Metaphysics.htm>

751. Now it should be noted that, although a principle and a cause are the same in subject, they nevertheless differ in meaning; for the term principle implies an order or sequence, whereas the term cause implies some influence on the being of the thing caused.

³³⁵ Sententia Metaphysicae, lib. 10 l. 4 n. 15. Sic ergo primo in intellectu nostro cadit ens, et deinde divisio; et post hoc unum quod divisionem privat, et ultimo multitudo quae ex unitatibus constituitur. Nam licet ea quae sunt divisa, multa sint, non habent tamen rationem multorum, nisi postquam huic et illi attribuitur quod sit unum.

existential judgments claims). We get to know things *because* they exist, but not *according to* the mode and perfection of their existence. In the theory of existential judgments a fallacia accidentis occurs. If things had been known according to how they exist, the first known would have been God – the most perfect being. The problem is tackled in the second book of Metaphysics.

According to Thomas, being is the first known along with its natural counterpart only – the non-contradiction principle; the principle of differentiation. The primitive knowledge is habitual and requires determination. The sense of being is revealed only if both principles are matched.

In the primitively given, a mere trace of entity (the similitude of the real being leading to it) is known. Now, the leading was given the proper name in Aristotle and allotted to the last category of being (the category of relation: τὸ πρὸς τι). Knowledge in general (no matter its perfection) is, according to both Thomas and Aristotle, a relative. Its entire being consists in being related (an objectless science is an oxymoron). In Summa Theologiae I, 13, 7 ad 1, Thomas distinguishes between: 1) relativa secundum esse; 2) relativa secundum dici. The latter depend on the former. The moving and the moved are listed among the latter. Indeed, things in motion *are named* (are relativa secundum dici), but every naming (forming any language at all) is preceded by knowing the moving and the moved indiscriminately. Thus, motion is known before the objects in motion.

It is so at least in Aristotle; for Thomas states that it is rather being than motion which is known first. Their philosophical stance is different in how the being of relation is understood. The problem might be illustrated by the theological controversy over the nature of the last category of being. Gilbert de la Porrée claimed that relations are *not inherent* in things related, but “assistant” only. Thomas impugns the stance. The relation in general and science in particular (even in its primitive habitual form) rests immovably in the knower. It rests firmly (fixe et immobiliter) in the intellect; its being is more than just assimilation to the real being. The firmness accounts for the immortality of the human soul; the problem Aristotle refuses to solve peremptorily.

- 2) Secondly, we get to know *why* (διότι – *propter quid*) something is so-and-so. The cognition is obtained by the demonstrative syllogism, in which the middle term expresses one of the four Aristotelian causes (“Posterior Analytics”, II Ch. 11; “Physics”, II, Ch. 3; “Metaphysics”, I, Ch. 3, 983a 26-27).
- 3) Thirdly, we get to know *what* (τί ἐστὶ – *quid est*) an object is. For a cause can manifest its strength to different extent. E.g. the human hand can move in the way *phenomenally* similar to the limb of an animal. However, in doing it utmost, the

hand appears to be what it really is, viz. the *human* limb.³³⁶ An animal (an ape) is able to peel a fruit, but cannot write significant words on a sheet of paper. Writing, the specific and most perfect movement, manifests *the essence* of the doer (the human what-ness); it reveals the human rational nature, consequently too.

The cognizance of essences (expressed in the real definitions) differs from that of causes (expressed in the syllogisms) in the order of its terms only:

In *Physic.*, lib. 1 l. 1 n. 5 Quod autem dicit intelligere, refertur ad definitiones; quod vero dicit scire, ad demonstrationes. Nam sicut demonstrationes sunt ex causis, ita et definitiones; cum completa definitio sit demonstratio sola positione differens, ut dicitur in I *Poster.*

When he says ‘to understand’ he has reference to definitions, and when he says ‘to have science’ he has reference to demonstrations. For as demonstrations are from causes, so also are definitions, since a complete definition is a demonstration differing only by position, as is said in *Posterior Analytics*, I:8.³³⁷

Expositio *Posteriorum Analyticorum*, lib. 2 l. 8 n. 8. Deinde cum dicit: quare prima quidem etc. ostendit quomodo utraque definitio se habeat ad demonstrationem, concludens ex praemissis quod prima definitio solum significat quod quid est, sed non demonstrat ipsum. Secunda vero definitio est quasi demonstratio quaedam ipsius quod quid est: et non differt a demonstratione nisi sola positione, id est ordine terminorum et propositionum.

Then (93b39) he shows how each of these definitions is related to demonstration, concluding from the foregoing that the first definition merely signifies, but does not demonstrate the quod quid; whereas the second definition is, as it were, the definition of the quod quid and differs from

³³⁶ *STh.*, I, q. 51, a. 3, c: Respondeo dicendum quod quaedam opera viventium habent aliquid commune cum aliis operibus, ut locutio, quae est opus viventis, convenit cum aliis sonis inanimatorum, inquantum est sonus; et progressio cum aliis motibus, inquantum est motus. Quantum ergo ad id quod est commune utrisque operibus, possunt opera vitae fieri ab Angelis per corpora assumpta. Non autem quantum ad id quod est proprium viventium, quia secundum philosophum, in libro de *Somn. et Vig.*, cuius est potentia, eius est actio; unde nihil potest habere opus vitae, quod non habet vitam, quae est potentiale principium talis actionis.

³³⁷ *Commentaria in octo libros Physicorum; COMMENTARY ON ARISTOTLE'S PHYSICS* by Thomas Aquinas; Books I-II translated by Richard J. Blackwell, Richard J. Spath & W. Edmund Thirlkel Yale U.P., 1963

<https://dhspriori.org/thomas/Physics.htm>

a demonstration by position alone, i.e., in the ordering of the terms and propositions.³³⁸

A real definition discloses the ultimate power of a cause. Signs put on a sheet of paper are the most perfect effects of the physical activity possible in the material world, and reveal the most perfect possible being in the world consequently too.

- 4) Ultimately, the cognition of the existence of things comes; of whether they exist per se (*εἰ ἔστι* - *an sit*). The separate existence is meant; contrary to the primitively known existence of facts.

This general pattern of thinking must be applied to the cognizance of God. When trying to settle the existence of God, we depart from the perception of naked facts (all those interpreted are bound to lead to the cognizance of “a god”). There is no special philosophical experience different to the ordinary one (and that used in science). If philosophy is any different to particular types of cognition, it is because of searching for causes as radically as reaching for the Ultimate One.

Each science is stringent as far as restricted to a definite realm of objects. True, metaphysics is the most general one (Metaph., I, c. 2, 982a 20 ss.), but this does not add up to that its subject matter is as vague as Hegel imagined of being. Metaphysics is not ontology. It does not regard its subject matter specificative – to use Scotus’ terminology. It regards the radical relateness of the world, rejecting, at the same time, all relativity (its caricature).

The starting point of science differs from that of the ordinary cognition but in that science (as a social function), requires the use of a language more consequently than it happens in the everyday life. According to Aristotle, besides assuming *that* something exists, it is necessary to know *what* it is (*ὅτι, τί ἐστι*) (Posterior Analytics, I, Ch. 1, 71a 12-14). That primitive what-ness of objects is different to that of real definitions; for a mere convention of naming things is implied; a nominal definition of an object-to-be-known is needed. Now, the subject matter of metaphysics is, according to Thomas, *ens inquantum est ens*. The formula might seem to be scarcely different to the Scotian one; but it differs really nonetheless. The omission of “est” in Scotus is significant enough. The Thomasian formula *problematizes* being instead of *specifying* it. Problematizing, in turn, implies knowing causes.

The cognizance of causes was the program of the classical Greek philosophy. The program was fulfilled in Aristotle’s metaphysics. The final cause is the supreme one, and the intention of nature (*βούλημα τῆς φύσεως*) the general feature of the world.

Thomas goes a step further (Sth., I, 44, 2, c). He reinterprets the intention of

³³⁸ Expositio libri Posteriorum Analyticorum; COMMENTARY ON THE POSTERIOR ANALYTICS OF ARISTOTLE by Thomas Aquinas translated by Fabian R. Larcher, O.P.

nature as the intention of being. The intention of nature *happens* to be substantiated in the specimens of particular species which come to existence; it *appears* in nature. Intention of being (tending to being) *abides* in the very core of nature. All things desire to be. Humans desire the same, but human being must be more perfect than any other to be found in nature.

The problem of metaphysics, and the problem of its subject matter also, is that of participating in/of being. Contrary to what might be believed, Aristotle does not reject the theory of participation in bulk. In *De anima* (II, Ch. 4, 415a 26-b 7) we read:

φυσικώτατον γὰρ τῶν ἔρ-
γων τοῖς ζῶσιν, ὅσα τέλεια καὶ μὴ πηρώματα ἢ τὴν γένεσιν
αὐτομάτην ἔχει, τὸ ποιῆσαι ἕτερον οἷον αὐτό, ζῶον μὲν ζῶον,
φυτὸν δὲ φυτόν, ἵνα τοῦ ἀεὶ καὶ τοῦ θεοῦ μετέχωσιν ἢ δύναν-
ται· πάντα γὰρ ἐκείνου ὀρέγεται, καὶ ἐκείνου ἕνεκα πράττει
ὅσα πράττει κατὰ φύσιν (τὸ δ' οὗ ἕνεκα διττόν, τὸ μὲν οὗ, τὸ
δὲ ᾧ). ἐπεὶ οὖν κοινωνεῖν ἀδυνατεῖ τοῦ ἀεὶ καὶ τοῦ θεοῦ τῇ συν-
εχείᾳ, διὰ τὸ μηδὲν ἐνδέχεσθαι τῶν φθαρτῶν ταὐτὸ καὶ ἐν
ἀριθμῷ διαμένειν, ἢ δύναται μετέχειν ἑκάστων, κοινωνεῖ
ταύτῃ, τὸ μὲν μᾶλλον τὸ δ' ἥττον, καὶ διαμένει οὐκ αὐτὸ
ἀλλ' οἷον αὐτό, ἀριθμῷ μὲν οὐχ ἓν, εἶδει δ' ἓν.

... for any living thing that has reached its normal development and which is un mutilated, and whose mode of generation is not spontaneous, the most natural act is the production of another like itself, an animal producing an animal, a plant a plant, in order that, as far as its nature allows, *it may partake in the eternal and divine. That is the goal towards which all things strive*, that for the sake of which they do whatsoever their nature renders possible. The phrase ‘for the sake of which’ is ambiguous; it may mean either (a) the end to achieve which, or (b) the being in whose interest, the act is done. Since then no living thing is able *to partake in what is eternal and divine* by uninterrupted continuance (for nothing perishable can for ever remain one and the same), it tries to achieve that end in the only way possible to it, and success is possible in varying degrees; so it remains not indeed as the self-same individual but continues its existence in something like itself-not numerically but specifically one.³³⁹

The general tendency of nature consists in tending to assimilate to the First Cause. The problem is to which existent the tendency might be satisfied; and, at the same time, that of what both separates and unites God and the world. For the notion of assimilation implies both. The problem will be addressed in the ultimate Section.

Metaphysics departs from facts. The subsequent steps advance towards more and

³³⁹ Aristotle, *On the Soul*, Translated by J. A. Smith
<https://ebooks.adelaide.edu.au/a/aristotle/a8so/>

more vast swathes of physical causality. The hypothesis of the infinite chain of causes (rejected in the proof) makes the point clear. Ultimately, the supreme science arrives at the cognition of the Cause of being of the entire world.

The cognition *διότι* – *propter quid* of each cause included in the hypothetically infinite chain of causes (the minor premise of the kinetic proof) is adequate as for all these causes (taken together), and must be so; otherwise the elimination of the hypothesis would be impossible. The elimination of the hypothesis reveals *the essential* dependence of all causes on the Transcendent Cause. Still, not the essence of each cause is meant in the kinetic proof directly, but the “essence” of the entirety. To know *this essence* is to know that these causes are unable to account for the reality of their effects alone; which is to say: without the influence of the First Cause. Now, the cognition of the type *διότι* – *propter quid* is, by the same token, impossible as for the First Cause. The chain of causes breaks up at the border of the world. The First Cause is not included therein. We cannot know *why* the Cause acts. Nevertheless, we can, according to Thomas, know *the reason* of the action. God acts *in order to* manifest His goodness. The reasonableness of God’s acting is visible in the structure of the world. There is but one “necessity” in God’s action: He cannot produce a world in which no trace of His goodness would be visible. Now, the trace reveals the dependence of the world on its Transcendent Cause. The world (and any other world for that matter too) cannot exist without the First Cause. Its existence proved in metaphysics is the coexistence with the First Cause.

Nor is it possible to know the essence of God in the natural way. The cognition of His essence is promised as the beatitude in the supernatural order.³⁴⁰ According to Augustine, the vision of God’s essence is the ultimate reward (*visio est tota merces*). The faith gives some prelibation thereof, and theology subservient to it clarifies the fact. Metaphysics, to the contrary, must stop at the threshold of the faith.

The first Thomas’ Way (from motion) can be transformed into the Second One (from causality). Thus, another element of reasoning appears in it: the cognition of the essence of each cause of the supposedly infinite chain of causes. But the cognition of the type WHY (*διότι* – *propter quid*) in the First Way is that of the entire chain of causes only, and the essence of each cause known but indirectly. Naturally, the essence of the First Cause cannot be known in the Second Way also. Nor can the cause of Its acting be

³⁴⁰ Super Sent., lib. 1 d. 1 q. 1 a. 1 co. Felicitas autem non est in habitu, sed in operatione, secundum philosophum. Optima autem operatio hominis est operatio altissimae potentiae, scilicet intellectus, ad nobilissimum objectum, quod est Deus: unde ipsa visio divinitatis ponitur tota substantia nostrae beatitudinis, Joan. 17, 3: haec est vita aeterna, ut cognoscant te solum Deum verum. Ex visione autem ipsum visum, cum non videatur per similitudinem, sed per essentiam, efficitur quodammodo intra videntem, et ista est comprehensio quae succedit spei, consequens visionem quae succedit fidei, sicut spes quodammodo generatur ex fide.

known in it, but the reason only.

The fact is essential for the right understanding of the formula: *ens inquantum est ens*. According to Scotus, science as such is that of essences (*scientia quidditativa*). Facts only *occasioned* the cognition of causes but never *triggered* it. Consequently, “the causes” are considerably less in Scotus than in Thomas; they are *not the causes of the factual objects*. The development of this philosophical tradition after Scotus testifies to the fact. In positivism, the cognition of causes is discarded at all. The germ of destruction had been present in the tradition since the beginnings.

According to Scotus, an insight into the essential order of being marks the starting point of metaphysics. It is the intuition of being. It was expected to mediate the philosophical cognition of God. Now, the proxy proved to be not transparent enough to meet the demand. The stipulating of the intuition is that of some privileged type of cognition (of those in know), inaccessible to the others (apparently incapable thereof). Two realms of human activity (the natural and the supernatural) were mingled, to the effect of disrespecting the former and distorting the latter. There is an “intuition” in the prayer indeed, ad Scotus’ “Treaty” begins with a prayer really. Now, Thomas’ *Summa ends with it*; and it is perhaps just as it should be. For a theologian, metaphysics is prerequisite. We cannot live the life of prayer only. The natural precedes the supernatural. Some nagging and fundamental questions can arise in the intellect. Perhaps it is good to disregard evil sometimes. But it is not good to disregard the misery of those afflicted by it. The misery is a fact, and the facts must be acknowledged; which is no to say: be put up with, and their effects acquiesced to. Metaphysics acknowledges the fact that some have been afflicted by doubts, but challenges the inevitability of their effects. It demands reflection upon the primitively given.

Thomas addresses in *Summa Theologiae* (I, q. 1 a. 7 arg. 1) the problem of the cognizance of God thus:

Videtur quod Deus non sit subiectum huius scientiae. In qualibet enim scientia oportet supponere de subiecto quid est, secundum philosophum in I Poster. Sed haec scientia non supponit de Deo quid est, dicit enim Damascenus, in Deo quid est, dicere impossibile est.

Objection 1. It seems that God is not the object of this science. For in every science, the nature of its object is presupposed. But this science cannot presuppose the essence of God, for Damascene says (*De Fide Orth.* i, iv): “It is impossible to define the essence of God.” Therefore God is not the object of this science.³⁴¹

³⁴¹ The *Summa Theologiae* of St. Thomas Aquinas; Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province. Online Edition Copyright © 2017 by Kevin Knight

It seems to be necessary to know *what* a thing is before trying to ascertain as to *whether* it is. Obviously, we must agree as to what we mean before attempting stating whether it is really. Now the problem is that God's what-ness cannot be known after all. Wittgenstein gathered from the fact the conclusion that the statements of the science on God are "senseless". Thomas saw the problem; the problem (it you like) of the nominal definition of God. According to him, instead of knowing what God is we accept the relation of the world to something beyond. We cannot assume a priori that the end of the relation exists really, but neither can we assume that it must not so. The notion of the relation is clear enough, and by no means "senseless". It cannot be labeled as such otherwise all genuinely innovative cognition could have been called senseless too. The problem of neo-positivism in general consists in that it is blind to the existence of real relations in the world.

The relation in question appears ultimately to be the general tendency of nature to the Plenitude of Being. The plenitude theology speaks of is incomparably more than that foreseen by metaphysicians. The distinction of the two orders must not be blurred.

The consequences of blurring it are visible in Scotus himself. "The Treaty" is perhaps the vastest (ca one hundred pages) analytical demonstrating of the existence of God attempted in the history of philosophy. Thus, its conclusions might have been expected to be not only thoroughly, but peremptorily bolstered. Neither is the case. In his "Theoremata", Scotus says pointblank that the demonstration of the existence of God is impossible. Going by what Scotus admits, we must say that the cognizance of God in the paradigm of science elaborated by him is infeasible.

Perhaps, the reasoning of "The Treaty" is persuasive enough for those who do not question the existence of God as radically as "heathens" do. Perhaps, the questioning might be called evil. But the very notion of evil is not univocal. Both suffering and its cause (the guilt) can be called so. The evil need not be in the will as in the cause, but might be in it as inflicted too. In the latter case, the evil appears in the intellect too, and the evil of it must be called error. The deplorable disharmony of human natural faculties makes it that the errors can be both disseminated (which is apparently culpable), and pullulate after having been so. The human will is responsible for the upright relation of the spoken to what might be extricated therefrom. The relation will be right if the intellect dominates. According to Thomas, the cause of errors is the admixture of phantasms (the spoken is imagined in the mind of those who hear it). They precede the intellection genetically, but are only valuable due the end obtainable by ordering them. The errors (the reversing of the order) must be perceived, but might never be acquiesced to. Metaphysics is purely theoretical thinking, but learning and teaching it is apparently not so. If undertaken in concrete historical (i.e. factual) circumstances, it is an act of mercy towards those afflicted by the spiritual suffering, by doubt, errors and the sense of bereavement.

Humans might be imagined to be thrown into the world about to carry them into the direction both unpredictable and Angst-inspiring. In fact, all errors must be such.

Now, the authenticity of the human existence consists in gaining a firm footing profitable for choosing the right direction. Being active demands, no doubt, a certain amount of personal engagement. Still, all steps in a chosen direction must be carefully measured lest one be led astray. Once plunged into the unknown one is bound to lose the bearings. Thus, the responsible activity requires a distance towards objects known theoretically first. Metaphysics must show this direction.

Its formula in Thomas (*ens inquantum est ens*) has been copied from the XI book of *Metaphysics* (XI, Ch. 3, 1061b 4-5: τὸ ὄν καθ' ὅσον ἐστὶ ὄν), and the fact that the book is not authentic adds up to that it is more than just the Aristotelian one. To be precise: it was more accurately copied in Thomas than in Scotus; for in the latter, a significant omission if “est” occurs. The omission was going to weigh heavily upon the fates of philosophy.

There remains one point to be clarified yet. In *Summa Theologiae*, the question is asked whether God exists (*an Deus sit*). It seems to be at odds with what was said above: the “is” of God is as unknown to humans as His essence must be.

Now, it is so for natural faculties indeed. In *Summa Theologiae*, Thomas speaks as a theologian first of all, albeit the question posed was a philosophical one. In other words: the metaphysical question was worded in terms proper to theology. The starting point of theology is different to that of metaphysics. In the latter, the relation of the world to its Cause is investigated. In theology, the starting point is the free initiative of God, not comprehended under the ordinary course of events. In metaphysics, the coexistence of the world with its Cause is stated, and the science cannot advance further. But the cognition of God can be furthered by the theologian considering the deposit of Revelation faithfully. Both sciences are wrought by the human intellect, but the starting point of what Thomas calls the theology of the Divine Scripture is worded (as St Jerome has it) divinely. Consequently, its conclusions, theoretically clear and possibly instilled into the paradigm of science of Posterior Analytics, are *subjectively* difficult to grasp. Be that as it may, they as such are indubitable (which is, according to Aristotle, the mark of science) provided they are what they should be: scientific. The starting point might be well *above* reason, but is not *contrary* to reason by the same token. It must be rational, albeit its rationality rather admired by a believer than comprehended.

The admiration need not be assessed negatively. True, it is a kind of anxiety in Thomas' typology of affects. But none of them are “negative”; which is to say: none to be tried to be forced out from the mind. There is no Weltschmerz at the starting point of philosophy, or Angst in the way Heidegger thought inspiring. Animals might behave in the way suggesting something of the sort present in them, but the human admiration is rather volitional than emotional. A disciplined inquiry might follow the former; the despair can only be spawn by the latter. Something actually above our comprehension need not be scary, albeit might be awe-inspiring constructively indeed. According to Plato, philosophy begins with admiration. That is why the Greek philosophy had been awaiting the Admirable since its beginnings.

In “De Ente et Essentia” Thomas adduces the frequently quoted words:

De ente et essentia, cap. 3. Quicquid enim non est de intellectu essentiae vel quidditatis, hoc est adveniens extra et faciens compositionem cum essentia, quia nulla essentia sine his, quae sunt partes essentiae, intelligi potest. Omnis autem essentia vel quidditas potest intelligi sine hoc quod aliquid intelligatur de esse suo; possum enim intelligere quid est homo vel Phoenix et tamen ignorare an esse habeat in rerum natura. Ergo patet quod esse est aliud ab essentia vel quidditate, nisi forte sit aliqua res, cuius quidditas sit ipsum suum esse; et haec res non potest esse nisi una et prima ...

77. Whatever is not of the understood content of an essence or quality is something which comes from without and makes a composition with the essence, because no essence can be understood without the things which are parts of it. Now, every essence or quiddity can be understood without anything being understood about its existence. For I can understand what a man is, or what a phoenix is, and yet not know whether they have existence in the real world. It is clear, therefore, that existence is other than essence or quiddity, unless perhaps there exists a thing whose quiddity is its existence.³⁴²

The essence of e.g. phoenix could be imagined, but its existence is impossible. The essence of e.g. a man could be thought, and its existence is possible. The mythological objects had been peopling the imagination of ancient Greeks until a special intellectual attitude mentioned above put an end to this play of imagination. The same objects were resuscitated some centuries later (by Bultman and Gadamer) and the same infantile attitude towards the world followed. Aristotle treated mythological thinking with condescension. Thus, no “idea” of God (nor any idol either) appeared in *Metaphysics*, unless the “idea” be thought of as the nominal definition mentioned above. Any other “idea” of God accepted first must render the demonstration of his existence impossible. The fact was proved by Kant stringently enough.

Now, what about those who harbor some doubts as to the existence of God, possibly suggested by the advocates of modern rationalism, as having accepted the existence not “critically” enough? Apparently, the question of whether God exists is posed distinctly then. The question reads: is there God really; i.e. in the way different to imaginary objects? Does He exist *beside* the realm of thinking in the place magnanimously allotted to Him by the advocates of modern humanity? The problem whether He exists is, then, the problem of whether He enters radically the physical world despite being at the same time different therefrom. Can He call into existence and destroy everything He wills to? Can He boost honest movements of human heart and

³⁴² De Ente et Essentia by Thomas Aquinas translated as Aquinas on Being and Essence a translation and interpretation 1965 adapted and html-edited by Joseph Kenny, O.P.

<https://dhspriority.org/thomas/DeEnte&Essentia.htm>

thwart the wickedness of the dishonest?

Over centuries, philosophers tried to approach God by the acts of the intellect. But people in general tried to get to Truth also and to live according to what they got to know. Aristotle's *Metaphysics* bears a testimony to the fact. But the opposite; the hardly believable; happened too: Truth herself approached humans and revealed Her name:

Contra Gentiles, lib. 1 cap. 22 n. 9-11: Amplius. Omnis res est per hoc quod habet esse. Nulla igitur res cuius essentia non est suum esse, est per essentiam suam, sed participatione alicuius, scilicet ipsius esse. Quod autem est per participationem alicuius, non potest esse primum ens: quia id quod aliquid participat ad hoc quod sit, est eo prius. Deus autem est primum ens, quo nihil est prius. Dei igitur essentia est suum esse.

Hanc autem sublimem veritatem Moyses a domino est edoctus, qui cum quaereret a domino, Exod. 3 dicens: *si dixerint ad me filii Israel, quod nomen eius? Quid dicam eis?* Dominus respondit: *ego sum qui sum. Sic dices filiis Israel: qui est misit me ad vos*, ostendens suum proprium nomen esse qui est. Quodlibet autem nomen est institutum ad significandum naturam seu essentiam alicuius rei. Unde relinquitur quod ipsum divinum esse est sua essentia vel natura.

Hanc etiam veritatem Catholici doctores professi sunt. Ait namque Hilarius, in libro de Trin.: *esse non est accidens Deo, sed subsistens veritas, et manens causa, et naturalis generis proprietates*. Boetius etiam dicit, in libro de Trin., quod *divina substantia est ipsum esse et ab ea est esse*.

[9] Every thing, furthermore, exists because it has being. A thing whose essence is not its being, consequently, is not through its essence but by participation in something, namely, being itself. But that which is through participation in something cannot be the first being, because prior to it is the being in which it participates in order to be. But God is the first being, with nothing prior to Him. His essence is, therefore, His being.

[10] This sublime truth Moses was taught by our Lord. When Moses asked our Lord: "If the children of Israel say to me: what is His name? What shall I say to them?" The Lord replied: "I AM WHO AM.... You shall say to the children of Israel: HE WHO IS has sent me to you" (Exod. 3:13, 14).³⁴³ By this our Lord showed that His own proper name is HE WHO IS. Now, names have been devised to signify the natures or essences of things. It remains, then, that the divine being is God's essence or nature.³⁴⁴

³⁴³ Douay-Rheims Bible: [13] Moses said to God: Lo, I shall go to the children of Israel, and say to them: The God of your fathers hath sent me to you. If they should say to me: What is his name? what shall I say to them? [14] God said to Moses: I AM WHO AM. He said: Thus shalt thou say to the children of Israel: HE WHO IS, hath sent me to you. [15] And God said again to Moses: Thus shalt thou say to the children of Israel: The Lord God of your fathers, the God of Abraham, the God of Isaac, and the God of Jacob, hath sent me to you: This is my name for ever, and this is my memorial unto all generations.

³⁴⁴ CONTRA GENTILES by Thomas Aquinas; On the Truth of the Catholic Faith; Book I; translated by Anton C. Pegis.

<https://dhspriority.org/thomas/ContraGentiles.htm>

The mysterious name of God appeared in the book of Exodus first (Ex. 3. 14; 6. 3; 34. 6). The Hebrew idiom allows the transformation of the verb *hajah* (*hawah*); TO BE; into the form of the tetragrammaton יהוה. The Greek one does not allow the transformation. Greek requires naming being dividing and multiplying it with variegated verbs and nouns. Not only is the common day language such a prism that scatters the simplicity of being. First of all, philosophy requires a structured multiplicity of sentences making up syllogisms to demonstrate the existence of God.

Tetragrammaton יהוה would be inserted into the pre-Christian manuscripts of the Greek translations of the Old Testament. But God's being and His name too entered the human history, once in was revealed in concreto (Evan. John 17) without inverted commas which made it appear as foreign; as a quotation (Hebr. 1) (Denzinger 1785 ss.). God became the God-With-Us.

The presence must be acknowledged, but must not be taken for granted. We need not become heathens to feel with their hearts *the infinite distance* which separated *the unknown God* from them (St Paul speaks of), but we must realize the distance. Both proximity and transcendence is expressed in the proper name of God. Metaphysics underscores the transcendence. Its proper method was called separation.

3. χωρισμός

Separation is the proper method of metaphysics. Albeit, according to Aristotle, metaphysics poses the supreme challenge to the human intellect, it is, paradoxically, the most natural for humans. Their activity must be such in general, and the higher obstacle to hurdle, the more authentic an activity. The difficulty in question consists in the necessity to organize the human personality (to summon its forces) so as to cope with task; in subjugating the sensed in it (the imagination and emotions) to the rational. The distance towards the sensed, imagined and felt makes for the authenticity of human existence.

Separation is plainly visible in Thomas' Quaestiones disputatae. It is a natural complement of abstraction. Whereas abstraction isolates an aspect of the world (describable by real definitions) and tries to elucidate the realm in univocal terms, metaphysics integrates the isolated into a vaster scheme of thinking. The real definitions are used in particular sciences as the major premises of demonstrative syllogisms. Now, by the very fact of dropping the *relatively* irrelevant, abstraction must appear to be equally *relatively valid* only.

It remains to incorporate a particular mode of thinking into the structure of a hierarchized system. Still, the distinctions made previously must not be blurred (and the system hierarchized indeed). Thus, metaphysics is, according to Aristotle, "architectonic" towards the other sciences. A system of analogous correlations of the classes of objects

appears therein.

Being architectonic is tantamount to being the wisdom: to systematize and to order (according to the saying *sapientis est ordinare*: “it belongs to the wise man to order.”).³⁴⁵ In *De Trinitate*, 4, 1, c. Thomas describes abstraction as both necessary and prerequisite to a higher type of cognition.

The problem might be formulated in the words: [utrum] esset falsitas intellectus abstrahentis: [whether] the intellect of the one abstracting is false.³⁴⁶ It might be believed that abstracting must be distorting after all, as in the real world the variety of objects is no less important than their classes. Thomas answers: *Alius est modus rei in existendo et alius in cognoscendo* (the mode of understanding, in one who understands, is not the

³⁴⁵ *Contra Gentiles*, lib. 1 cap. 1 n. 2, 3.

CONTRA GENTILES by Thomas Aquinas; On the Truth of the Catholic Faith; Book I; translated by Anton C. Pegis.

<https://dhspriority.org/thomas/ContraGentiles.htm>

Quia vero praedicti artifices, singularium quarundam rerum fines pertractantes, ad finem universalem omnium non pertingunt, dicuntur quidem sapientes huius vel illius rei, secundum quem modum dicitur 1 Cor. 3:10, ut sapiens architectus, fundamentum posui; nomen autem simpliciter sapientis illi soli reservatur cuius consideratio circa finem universi versatur, qui item est universitatis principium; unde secundum philosophum, sapientis est causas altissimas considerare.

But, since these artisans are concerned, in each case, with the ends of certain particular things, they do not reach to the universal end of all things. They are therefore said to be wise with respect to this or that thing; in which sense it is said that “as a wise architect, I have laid the foundation” (1 Cor. 3:10). The name of the absolutely wise man, however, is reserved for him whose consideration is directed to the end of the universe, which is also the origin of the universe. That is why, according to the Philosopher, it belongs to the wise man to consider the highest causes.

³⁴⁶ *Sententia Metaphysicae*, lib. 3 l. 7 n. 20. *COMMENTARY ON THE METAPHYSICS* by Thomas Aquinas translated by John P. Rowan Chicago, 1961.

<https://dhspriority.org/thomas/Metaphysics.htm>

Non autem sic abstrahit secundum intellectum, quod intelligat magnitudines et species esse sine materia et motu. Sic enim sequeretur quod vel esset falsitas intellectus abstrahentis, vel quod ea quae intellectus abstrahit, sint separata secundum rem.

However, so far as the thing known is concerned, the intellect does not abstract in such a way that it understands continuous quantities and forms to exist without matter and motion. For then it would follow either that the intellect of the one abstracting is false, or that the things which the intellect abstracts are separate in reality.

same as the mode of a thing in existing.)³⁴⁷ If classifying objects we must bear in mind that a transformation occurs at the border of the world and the mind. No “idea” can mirror the “reality”, nor does separating one part of the latter need distort the “image of totality”.

The problem of universals would crop up over centuries and was perhaps one of the most difficult philosophical ones. Still, the problem might be approached by the common sense too. The simplest way to grasp a universal is imagine it as *something between* the generating and the generated (e.g. the father and the son). Moreover, the objects of the same species are defined in biology as able to produce fertile progeny. The notion of relation appears to be pivotal, and the very notion is used in metaphysics. For a hierarchized system of relations amongst things is settled as well as the relation of the world to its Transcendent Cause.

The naked existence of facts must serve as the starting point, but can never become anything more. Things come to existence, but no existence can be grasped in this science, but the general tendency only which makes the existence possible.

The term of separation (separatio; χωρισμός; *chorismos*) harks back to Plato. He severed existing things from the eternal ones. Being (proper to the latter) was more than just existing. Aristotle, on the other hand, tried to account for the relation of the both realms. For the notion of participation was far from being clear in Plato. Things partake, according to Aristotle, in/of the *eternal*, but not, literally speaking, in/of the *eternal species*. Plato’s objectives were precious, but conclusions rash and not thought over diligently enough. The notion of the supreme science appeared in Plato, but no systematized system thereof. It was going to but in Aristotle. The Platonian dualism was, in sum, but a philosophy-to-be.

According to Thomas, metaphysics must come as a natural complement of the philosophy of nature. It crowns, at the same time, the desirable development of human

³⁴⁷ Summa Theologiae I, q. 85 a. 1 ad 1. Non est autem verum quod proponitur, si ly aliter accipiatur ex parte intelligentis. Est enim absque falsitate ut alius sit modus intelligentis in intelligendo, quam modus rei in existendo, quia intellectum est in intelligente immaterialiter, per modum intellectus; non autem materialiter, per modum rei materialis.

For it is quite true that the mode of understanding, in one who understands, is not the same as the mode of a thing in existing: since the thing understood is immaterially in the one who understands, according to the mode of the intellect, and not materially, according to the mode of a material thing. The Summa Theologiae of St. Thomas Aquinas Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province Online Edition Copyright © 2017 by Kevin Knight.

<http://www.newadvent.org/summa/1.htm>

mind.³⁴⁸

Both participation and separation are essential parts of metaphysics in Thomas. Individuals partake in/of their existence *for some time*, but they all intend to be *in general*, despite unable to partake in/of it uninterruptedly.

The intended objective was given the proper name in Aristotle. The end is twofold: both an *objective* can be called so (the end τινί) and a *real object* independent of being willed (the end τινός). The intention can only be substantiated if related to *the real thing* (being intended does not make it being dreamt of and unreal).

The distinction is pivotal in metaphysics, but no less clear in all human affairs in general. E.g. a miser wills *to have* money (willing is the end τινί), but would be dissatisfied without having the *real object* of his/her desire (the end τινός). Nevertheless, not this or that object can satisfy all human desires at all, but the supreme good only. Accordingly, a question might be posed whether God is the ultimate human beatitude. The answer is by no mean obvious, as the ultimate end must be both obtained and remain not diminished by the fact of being obtained. The personal attitude to God is meant. If metaphysics adopts separation, an existentialist would blame it for separating (literally speaking) God from humans instead of *bringing* them *closer* to Him. The Way we have been speaking of would be a barrier. Now, the problem is that existentialism *brings* (the notion of) God *down* instead of *bringing* humans *up* to God. The “god” became “closer” and “humanized”, but ceased to be God (the *real* God) at the same time. Paradoxically, it is the philosophy of subject which separates humans from the real God.

All humans desires should be related to the absolutely Transcendent Cause, and reversing the relation must lead to the actual degradation of human existence. It is natural for us to forget about ourselves and the concentrate on the outer objects (the transcendent in a weaker sense of the word) or God (the Transcendent in a stronger sense of the word). The orientation called “egotic” in the philosophy of subject separates humans from God.

³⁴⁸ Super De Trinitate, pars 3 q. 5 a. 1 co. 3. Quaedam vero speculabilia sunt, quae non dependent a materia secundum esse, quia sine materia esse possunt, sive numquam sint in materia, sicut Deus et Angelus, sive in quibusdam sint in materia et in quibusdam non, ut substantia, qualitas, ens, potentia, actus, unum et multa et huiusmodi. De quibus omnibus est theologia, id est scientia divina, quia praecipuum in ea cognitorum est Deus, quae alio nomine dicitur metaphysica, id est trans physicam, quia post physicam discenda occurrit nobis, quibus ex sensibilibus oportet in insensibilia devenire. Dicitur etiam philosophia prima, in quantum aliae omnes scientiae ab ea sua principia accipientes eam consequuntur.

Super De Trinitate, pars 3 q. 6 a. 1 co. 22. Unde patet quod sua consideratio est maxime intellectualis. Et exinde etiam est quod ipsa largitur principia omnibus aliis scientiis, in quantum intellectualis consideratio est principium rationalis, propter quod dicitur prima philosophia; et nihilominus ipsa addiscitur post physicam et ceteras scientias, in quantum consideratio intellectualis est terminus rationalis, propter quod dicitur metaphysica quasi trans physicam, quia post physicam resolvendo occurrit.

Both partaking in/of existence and partaking in/of the worthiest life activity is the end τινί, according to the saying: operari sequitur esse.³⁴⁹ Human operation is more perfect than that of animals and this accounts for the durability of human existence. If humans are any different to animals it is because of the intellect and the will, which intend the Transcendent end τινός to the effect of contracting the indissoluble bond with it. If humans had been irrational creatures, they would have been unable to contract it. It is the most perfect human activity that joins; the contemplation of God's essence. Thomas says:

Contra Gentiles, lib. 3 cap. 50 n. 9. Et Proverb. 9-3 dicitur quod sapientia per ancillas suas vocat ad arcem. Erubescant igitur qui felicitatem hominis, tam altissime sitam, in infimis rebus quaerunt.

And Proverbs (9:3) says that Wisdom "by her maids invites to the tower." Let those men be ashamed, then, who seek man's felicity in the most inferior things, when it is so highly situated.³⁵⁰

The philosophical contemplation Aristotle speaks of is considerably less, but the relation of both ends plain in his Metaphysics (XII, c 7, 1072b 1-4).

In the last chapter of this most important book of Metaphysics it is stated:

Ἐπισκεπτέον δὲ καὶ ποτέρως ἔχει ἡ τοῦ ὅλου φύσις τὸ ἀγαθὸν καὶ τὸ ἄριστον, πότερον κεχωρισμένον τι καὶ αὐτὸ καθ' αὐτό, ἢ τὴν τάξιν. ἢ ἀμφοτέρως ὥσπερ στρατεύμα; καὶ γὰρ ἐν τῇ τάξει τὸ εὖ καὶ ὁ στρατηγός, καὶ μᾶλλον οὗτος· οὐ γὰρ οὗτος διὰ τὴν τάξιν ἀλλ' ἐκείνη διὰ τοῦτόν ἐστιν. πάντα δὲ συντέτακται πῶς, ἀλλ' οὐχ ὁμοίως, καὶ πλωτὰ καὶ πτηνὰ καὶ φυτὰ· καὶ οὐχ οὕτως ἔχει ὥστε μὴ εἶναι θατέρῳ πρὸς θάτερον μηδέν, ἀλλ' ἐστὶ τι. πρὸς μὲν γὰρ ἐν ἅπαντα συντέτακται, ἀλλ' ὥσπερ ἐν οἰκίᾳ τοῖς ἐλευθέροις ἥκιστα ἔξεστιν ὅ τι ἔτυχε ποιεῖν, ἀλλὰ πάντα ἢ τὰ πλεῖστα

³⁴⁹ Summa Theologiae I, q. 48 a. 5 co. Actus autem est duplex, primus, et secundus. Actus quidem primus est forma et integritas rei, actus autem secundus est operatio.

Act, however, is twofold; first, and second. The first act is the form and integrity of a thing; the second act is its operation.

The Summa Theologiae of St. Thomas Aquinas Second and Revised Edition, 1920. Literally translated by Fathers of the English Dominican Province Online Edition Copyright © 2017 by Kevin Knight.

<http://www.newadvent.org/summa/>

³⁵⁰ CONTRA GENTILES; BOOK THREE: PROVIDENCE; Q. 1-83; translated by Vernon J. Bourke
<http://dhspriority.org/thomas/ContraGentiles3a.htm>

τέτακται, τοῖς δὲ ἀνδραπόδοις καὶ τοῖς θηρίοις μικρὸν τὸ εἰς
τὸ κοινόν, τὸ δὲ πολὺ ὅ τι ἔτυχεν· (1075a 11-22).

We must consider also in which of two ways the nature of the universe contains the good, and the highest good, whether as something separate and by itself, or as the order of the parts. Probably in both ways, as an army does; for its good is found both in its order and in its leader, and more in the latter; for he does not depend on the order but it depends on him. And all things are ordered together somehow, but not all alike, -both fishes and fowls and plants; and the world is not such that one thing has nothing to do with another, but they are connected. For all are ordered together to one end, but it is as in a house, where the freemen are least at liberty to act at random, but all things or most things are already ordained for them, while the slaves and the animals do little for the common good, and for the most part live at random; for this is the sort of principle that constitutes the nature of each. I mean, for instance, that all must at least come to be dissolved into their elements, and there are other functions similarly in which all share for the good of the whole.³⁵¹

The last two sentences run as follows:

τὰ δὲ ὄντα οὐ βούλεται πολιτεύεσθαι
κακῶς. “οὐκ ἀγαθὸν πολυκοιρανίη· εἷς κοίρανος ἔστω.” (1075a 3-5).

The world refuses to be governed badly. “The rule of many is not good; one ruler let there be.”³⁵²

This quotation from Homer’s *Iliad* ends the book. Two other follow (polemical with Platonism), which Thomas failed to comment. Thomas Commentary, in turn, ends with the words:

Et hoc non potest esse, quia entia non volunt male disponi. Dispositio enim entium naturalium est qualis optima potest esse. Et hoc videmus in singulis, quod unumquodque est optimae dispositionis in sua natura. Unde multo magis oportet hoc existimare in toto universo.

Sed pluralitas principatuum non est bonum. Sicut non esset bonum quod essent diversae familiae in una domo, quae invicem non communicarent. Unde relinquitur quod totum universum est sicut unus principatus et unum regnum. Et ita oportet quod ordinetur ab uno governatore. Et hoc est quod concludit, quod est unus princeps totius universi, scilicet primum movens, et primum intelligibile, et primum bonum, quod supra dixit Deum, qui est benedictus in saecula saeculorum. Amen.

2662. Now this cannot be the case, because beings do not want to be badly disposed; for

³⁵¹ <http://classics.mit.edu/Aristotle/metaphysics.html>

Metaphysics by Aristotle translated by W. D. Ross

³⁵² Ibid.

the disposition of natural things is the best possible. We observe this in the case of particular things, because each is best disposed in its own nature. Hence we must understand this to be the case to a much greater degree in the whole universe.

2663. But many rulers are not good. For example, it would not be good for different families which shared nothing in common to live in a single home. Hence it follows that

“the whole universe is like one principality and one kingdom, and must therefore be governed by one ruler. Aristotle’s conclusion is that there is one ruler of the whole universe, the first mover, and one first intelligible object, and one first good, whom above he called God ... who is blessed for ever and ever. Amen”.³⁵³

³⁵³ COMMENTARY ON THE METAPHYSICS by Thomas Aquinas translated by John P. Rowan
Chicago, 1961.

<https://dhspriority.org/thomas/Metaphysics.htm>