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## Spinoza on Method\*

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### Abstract

*By interrupting the traditional approach to the distinctiveness of the order of knowledge and the order of nature (which was the procedure of many philosophers like Aristotle, and his scholastics disciples, more especially of Thomas Aquinas and even Descartes and Cartesians), and acquiring a unified science, Spinoza changes the customary order of philosophizing and begins his famous book, Ethics, with a treatise on God, nature or substance, a being that, is assumed, first by nature, i.e. in the order of nature, but not first for us, i.e. in the order of knowledge. To accomplish this procedure, Spinoza, on the one hand attributes the extension to the God and on the other hand, chose the geometrical method that implies definitions, axioms and postulates that harmonize with his procedure, to expose his views. In this article, by analyzing Spinoza's geometrical method, we try to show that how Spinoza achieved his methodological intentions.*

**Key words:** Geometrical Method, Analytic Method, Synthetic Method, Definition, Unified Science.

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### **Introduction**

The title of the first part of the *Ethics* is *De Deo (Of God)*, the shortest among the five titles of this book. One puzzle, then, is the question of why Spinoza begins the book with a discussion of God (and, if so, why, from the outset, was accused of atheism<sup>1</sup>), and why he choose the title of *Ethics* for the book that its first and second parts deal with metaphysics and physics respectively (ethics, in particular, is the subject of the third part of the book). Hence, by this procedure; i.e. to choose God as a point of departure, Spinoza dissociated himself from his contemporaries, to be more precise, from the rationalists, and even in a sense, from the procedure of Aristotle and their scholastic disciples, more especially of Thomas Aquinas.

Both Descartes' *Meditatione de Prima Philosophia (Meditations on First Philosophy)* and Arnold Geulincx's *Metaphysica Vera (Metaphysics)* begins with *Cogito*<sup>2</sup>, the other famous Book of the latter, *Ethics*, which, entirely, as opposed to Spinoza's *Ethics*, was devoted to the ethical issues, begins with a treatise *on Virtue and its Prime Attribute*, Leibniz's *Monadologie* begins with a *Monad*, and Malebranche's *Entretiens sur la métaphysique, sur la religion et sur la mort (Dialogues on Metaphysic, on Religion and on Death)* with a discussion on a *soul and its separateness of the body*. None of them, therefore, initiated their account of metaphysics with God. Before discussing God and his place, the seventeenth century philosophers, as a rule, sought to establish their philosophical system upon another basis. Their procedure, in fact, implies that they have accepted the old distinction between order of knowledge and order of nature. We must ask ourselves, therefore, why Spinoza was the only one who started his metaphysics with God?

In reading the first page of *Ethics*, i.e. the definitions and axioms, the second question that arise is: why in the entire *Ethics*, Spinoza, either in synthesis or analytics form, adopted geometrical method to expose his views? Here's another problem: is there any relation between geometrical method, as form, and Spinoza's philosophical system, as content? In *Ethics*, Spinoza does not speak about these questions directly, although, between propositions and scholia of his book, presents the clues that enables us to provide a response to these questions<sup>3</sup>.

To understand Spinoza's procedure, and to answer these questions, the obvious first move seems to be to begin with the theory of definition

and its function in Spinoza's philosophical system, which he formulated most helpfully in his letter to Simon De Veris (letter 9).

### **The Definitions**

At the outset of *Ethics*, Spinoza, presents a list of definitions and axioms, surprisingly there is no introduction. For such a philosophical book this approach seems strange of which Spinoza was, himself, well aware, but the method he chose requires this strange approach. In his introduction to the *PPC* (*Principia Philosophiae Cartesianae - The Principles of Cartesian Philosophy*), Louis Meyer suggests that anyone who adopts the geometric method will have to start with 'things known certainly beforehand', i.e. with definitions, axioms and postulates. The reader, but, at the starting point is encountered with the definitions in the form of 'by ... I understand...' or 'that thing is said/called ...', from the formulation of which it comes that they are arbitrary, overbearing or stipulative. Spinoza's explanation in letter 9, albeit, prevent of such a misunderstanding. Here, in response to the De Veris's demand on his views about definitions, Spinoza distinguishes two kinds of definitions 'so, he says, a definition either explain a thing as it is outside the intellect – and then it ought to be true ... – or else it explain a thing as we conceive it or can conceive it ... and not need be conceived as true' (Spinoza 1985:194).

The former called definition of *thing* and the latter that of *name*<sup>4</sup>. The arbitrary and optional definitions are of name and not of thing, that is, with the help of this kind of definitions we cannot know what the thing is in itself and *per se*, i.e. regardless of its name. We cannot even know that there is an external world. It merely suggests the utterer's intentions. The definition of the name, can neither confirm nor disprove the facts, in this case there is only verbal convention (Gueroult 1974:20). The convention that lay down by utterer. Hence it is meaningless, on Spinoza's premises, to talk of its truth or falsehood. They are correct or incorrect, of course, and 'to be true only need to be conceived without contradiction' (Mignini 1997:108).

These are clear of Spinoza's examples in letter 9, in which he gives two examples about the definition of name and its distinction of the other. The first example is of the temple; the definition of the name is like the description of the temple which merely presents in the mind of its

constructor, and it is not realization outside of his mind, so it is neither true nor false, and basically there is no question of whether or not it exists. The definition of thing, in contrast, is a description of a temple like Solomon's which existed at a specified time and place, so its description due to the conformity or nonconformity with the facts could be either true or false (Spinoza 1985:108). Given this comments, *Ethics'* definitions should not be merely definitions of the name, and their apparent formulation should not mislead us of their natures, because on the one hand, they are definitions of name – basically all definitions, since they are definitions of terms, are of name, but the converse is not true, i.e. all definitions are not of thing – and on the other hand, they must be definitions of things, because, according to Meyer in the Introduction of *PPC*, would define the things that are “as a stable foundation on which to build the whole edifice of human knowledge” (Ibid:225). So his definitions, define the things also as they are in themselves. Therefore, definitions of *Ethics*, at the same time, are of name and thing (Gueroult 1974:21).

To analyze the subject more closely, let us return to the Spinoza's texts. By presenting two examples, Spinoza explains the dual function of definition; the former of a bad definition adopted from Borelli's example (in letter 9) and the latter of a good definition adopted from Geometry (in *TIE - Tractatus de Intellectus Emandatione - On the Improvement of the Understanding* 59). First, let's take a bad definition. In this example, it is stated that, if one says “let two straight line enclosing a space be called figural”, then there are two presumptions: “if he understands by a straight line what everyone understands by a curved line, then his definition will be a good one, provided he does not subsequently understand by it square and the other figures ... .But if by a straight line he understands what we commonly understand, the thing is completely inconceivable” (Spinoza 1985:194-195).

At first, it seems that this definition only concern the naming error, and this is also the case, since the utterer does not consider the ordinary usage of the words, but this definition is also a bad one, and as a result, it is a mistake, because if we take the words in conventional sense, the inherent structure attributed to the thing through this definition is inconceivable in itself. Since, on the one hand, there is no conformity between idea and *ideatum* (Gueroult 1974:24), and on the other, it is

confusing in itself, that is, lacks the criteria that Spinoza propose for truth, whether conformity or compatibility. Briefly speaking, a bad definition, as Spinoza says in letter 9, is one that is inconceivable.

Now, let us examine a good definition and its dual function which adopted from geometry; if one says that by a circle I understand “figure that is described by any line of which one end is fixed and the other movable”(Spinoza 1985:40), on the one hand, he has expressed his intention of the term circle, and therefore provided an optional definition that is customary, while on the other hand, his definition represents the nature of a circle, since he expresses the proximate cause of its genesis, so, he provides definition of thing, real or genetic definition (i.e. definition that express its genesis, in the other word, it is casual definition). Simultaneously, in Spinoza’s view, it is a good definition, since, on the one hand, the name has been correctly executed, and on the other hand, it is conceivable. Given what he wrote, conceivability or inconceivability is the condition of validity of definition, to the extent that one can define the good definition as the concept. So we can say that there is a real definition, if we have a clear and distinct idea of the *ideatum*. In Spinoza’s system, this implies that we know its proximate cause; again, when we know the proximate cause of thing, we recognize its properties following with necessity from its cause, just as a mathematician by a definition expresses how the shape is formed, and he deduced all the properties from this procedure (Allison 1987, P, 41).

Accordingly, in *TIE* (96), Spinoza provides two criteria for definition of a created thing: “1- if the thing is created, the definition ..., will have to include the proximate cause ... 2- we require a concept, *or* definition, of the thing such that when it is considered alone, without any other conjoined, all the thing’s properties can be deduced from it” (Spinoza 1985, P, 40). In this case, Spinoza’s Position is similar to Hobbes’s in *Examinatioet Emendatio Mathematicae hodiernae*. The similarity between them is so much that Martial Geuroult claims “if we refer to Hobbes’s works on emendation of *Euclidean geometry*, especially to the *Examinatio et Emendatio Mathematicae hodiernae*, which published in 1660, a year before writing *TIE*, it will become apparent that this book is among the sources of Spinozism”(Gueroult, L’Ame 1974:482). Although Geuroult published his works on Spinoza about ten years before the publication of Phillip Mignini’s research, it should be noted that, by the

early eighties, it was assumed that Spinoza wrote the *TIE*, as Pointed out by Geuroult and the others, one year after the publication of Hobbes's Book, but researches of Mignini, which are very precise and authoritative, shows that Spinoza wrote this book, which was his first book, from 1657 to 1658, and before *KV* (*Korte Verhandeling van God, de mensch en deszelvs welstand - A Short Treatise on God, Man and His Well-Being*). Nevertheless, Mignini's findings did not surely change Geuroult's Position, because he took other examples of other books which Hobbes had written and published before 1657. For example, in chapter six of *De Corpore* (1655), when discussing the definition, says that "the end of demonstration is the science of the causes and generation of things" (Hobbes 1893:73).

In *EEMH*, again, Hobbes described and defined the criteria that are the same with those of Spinoza's. 'A: Are the definitions the principles of science? – B: Certainly. – A: And must not all science derive from knowledge of causes? – B: Assuredly. – A: So the principle of science is knowledge of cause. – B: Yes. – A: Accordingly, the definition must contain knowledge of the cause. – B: I'm convinced. – A: this is why the best definition is one that explains the generation of the thing. – B: I also conceded. I see that in Euclid geometry, the definitions of sphere, the cone and the cylinder made by the generation of this things, although he did not define the circle in this way' Quoted from (Gueroult, L'Ame 1974:484).

The definition of geometrical things, according to Hobbes and Spinoza, so that it consists of explaining genesis or construction of thing with respect to the proximate cause and leading to the perfect knowledge of thing (i.e. to be genetic definition), is the definition based on motion; 'for each geometric thing there is essential definition that represent the way that it can be determined by means of motion' (Ibid, 474). This definition, as Spinoza states in *TIE* (95), does not refer to the properties of thing, but reveals the inmost essence of the thing. The definition of a circle based on the equivalence of lines drawn from the center to the circumference is a definition according to the properties of the circle. It does not reveal its essence, but the definition of a circle based on the motion of one's extremity and the rest of the other's is defined by the essence and by the mediation of motion. Basically, in Spinoza's view, it is the motion that determines the quantity, so, in *TIE* (108) he explains that our perception of body based on the motion of the plane, the plane based

on the motion of the line and the line based on the motion of the point. Hobbes explains exactly this position in the *EEMH*, as well as in the *De Corpore*, and emphasizes the contribution and role of motion (dynamics) in genetic definition of geometric things, a point which is a feature of Euclidean synthetic geometry.

Cartesian geometry is analytic geometry, however, and is different from synthetic or axiomatic geometry. The analytic geometry is static and non-genetic. There is the same contrast between their chosen method for philosophy, Descartes uses the method of analysis or discovery, a method that is generally proceeds from an effect to the cause and therefore it is not genetic, but Spinoza introduces the synthetic method or method of presentation or proof, that is, a method which proceeds from the cause to the effect. Therefore, geometry, in a general sense, is not divided into the analytic and synthetic methods used by Descartes and Spinoza, but each method is related to its correspondent geometry.

Descartes method, even in the *second replies*, that intends to prove the existence of God in synthetic method, i.e. in a method aside from the analytic method of *Meditations*, is in contradiction with Spinoza's method in *PPC* (in which Spinoza proves the same reasons of Descartes in a geometrical way). In *second replies*, Descartes uses the phrase *More Geometrico Dispositae* (*Disposition in Geometrical Method*) purpose of which is that the geometric order disposes the proofs, so although it uses a method that apparently does not relate to the method of analysis or discovery, he did not care for proving application of synthetic method (at least in philosophy); when Spinoza, in contrast, speaks of a geometric method in both of his works, he uses the term *More Geometrico Demonstratae* (*Demonstration in Geometrical Method*), which suggests that his emphasis is on the proving application of the method (Macherey 1979:51), and not merely the provision of proofs obtained independently of that method. In the discussion of definitions, therefore, Spinoza is not influenced by Clavius, as Dennin Borkowski says, and not by Descartes, but close to Hobbes.

If real knowledge of a thing, as Alison has noted, is equivalent to knowledge of its immediate cause, no more than two ways exists to the problem of recognition; either we find ourselves in a descending order that leads to a hopeless skepticism, or we have to accept existence of a single first principle in terms of which everything is explained, but it

cannot be explained itself on the basis of anything else; this principle is the very concept of God. 'We can thus see how Spinoza's method leads necessarily to his concept of God' (Allison 1987:42).

Therefore, the existence and recognition of all things belonging to God, whereby the link between the geometric method and the content of the Spinoza's philosophical system is manifested in 1p17. Here Spinoza establishes a correspondence between the necessity that governs real things and the geometric objects: "I think I have shown clearly enough ... that from God's supreme power, *or* infinite nature, infinitely many things in infinitely many modes, i.e. all things, have necessarily followed, or always follow, by the same necessity and in the same way as from the nature of triangle it follows, from eternity and to eternity, that its three angles are equal to two right angles". Spinoza believed that a mathematical necessity governs reality, and that everything is followed necessarily from God. Not as a discovery but as a presentation, and influenced by the seventeenth-century intellectual atmosphere, in particular the teachings of Galileo, who believed "it [universe] is written in the language of mathematics, and its characters are triangles, circles and other geometric figures" (Cook 2007:17), Spinoza "employ formatted series of demonstration that reveal the logically necessary connection that unite ... proposition about ... thing with proposition about God" (Nadler 2006:41).

This look to the world should be seen along with the overcoming of a mathematical and mechanical look on the biological (Aristotelian) look. Therefore, on the one hand, Spinoza's necessitarianism (which is the materialist element of his thinking) and the consequence of it i.e. the liberation from the illusion of finalism (another materialist element of Spinoza's philosophy<sup>5</sup>) have been involved in the choice of the method of explaining the facts in a geometric way, and on the other hand, this method (especially definitions) provides a model for the philosopher, namely, 'as geometry derives from the fundamental conception of quantity determined to infinity by the mediation of motion, the essence of a plurality of things, the philosopher derives a plurality of things from the fundamental conception of God (Gueroult, L'Ame 1974:480)'; for, as in geometry the definition of a circle based on its immediate cause, the philosopher does not define God with its properties, for instance, perfection, but with genetic reason of its nature, that is, *a substance*



*composed of infinity of infinite attributes* (Ibid,479). Given what has been said, and unlike the claims of Wolfson and several other commentators, such as Stewart Hampshire, Leon Ruth (Allison 1987:228-229), there is a relation between geometrical method and the content of Spinoza's thought.

Although, for example, Wolfson says that “Spinoza’s mathematical way of looking at things means only the denial of design in nature and freedom in man, and this need not necessarily be written in geometrical literary form” (Wolfson 1934:45). If Spinoza (like many others) merely deny the design in nature and freedom in man, then Wolfson has right, but as we showed, Spinoza's work was more than the negation of this two. Spinoza's work also has a another aspect; the necessitate of “derive the plurality of things from the fundamental conception of God” and this required the geometric method.

There is another problem. Spinoza expose, *The Principle of Philosophy* of Descartes, in Geometrical form; forasmuch as we know that Spinoza did not agree with all the contents of Descartes book, such expision does not indicate that there is not necessarily a relation between the method and the content, or any content can be described geometrically?

With the geometric expositopn of Descartes *principles of philosophy*, Spinoza, has shown that the apply of geometrical method on that book is possible, but necessarily will not obtain acceptables results, because the content does not relate to the method totally. Certainly, Spinoza, was opposed to some of the preassumptions or definitions of Descartes. With changes some of definitions (espessilly the definition of substance and mode), Spinoza harmonizes the method and content; in fact he maches the method with new content. For example in *Principles of Philosophy*, Descartes attributes the constant creation to God's free will, and Spinoza, however, has used geometrical methods to prove it, does not accept it, in fact, it is not compatible with the necessity that Spinoza find in geometry or in nature, geometry is compatibale with necessitate of following plurality of thing from God, which is doctrin of Spinoza.

In fact this shown the loyalty of Spinoza to the certainty of mathematical method in general (and geomtrical method in particular) which was, at least in 17<sup>th</sup>, the most reliable and the only possible method for search the truth.

So far we have shown that Spinoza's geometrical method implies a discussion of definition, and the discussion of definitions leads to a discussion of the concept of God, but, the presence of God as the beginning of the philosophical system, i.e. its methodological precedence, does not come out. To explain this matter, let us turn to the Descartes intellectual system and comparing some of its concepts with the concepts of Spinoza's.

### **The proper order of philosophizing**

Geulincx claimed that pure philosophy must begin with the idea of God, but believed that this decree is not for humans, but is true only to angels (Rousset 1999:52). Descartes had already given the similar view; he believed that the human being no matter how much uses the reason properly, could not, or in other words, his prejudices would not allow him to begin the philosophical system by discussing God -a God that may be a deceiver - but the system cannot be done without it. What is an issue here is the question of determination of the proper order of philosophizing, according to infinite being, which is important for both philosophers, because their philosophical system depends on this concept.

In *Third Meditation*, on the idea of infinity or God, Descartes says 'the idea that I have of God the truest and the most clear and distinct of all my ideas' (CSM II 1984, :32). As quoted above, this idea must precede any idea, even *Cogito* as a finite thing, because the finite idea is negative and is the result of limiting the infinite idea. The infinite idea for Spinoza is also important, and in this case, Spinoza's position, regardless of the relation between God and modes, is not far from Descartes'; "Whatever is, is in God, and nothing can be *or be conceived without God*" (*E I p 15*), then without infinite idea (which is God of Spinoza) and recognizing it, the problem of knowledge will basically be eliminated (Alquié 1969:122).

But there are significant differences here, though Descartes' infinity ontologically and logically prior to all other affairs or ideas, but in discovery, that is, on the basis of the method of analysis that Descartes used in his *Meditation*, it does not precede the others, especially the *Cogito*, but is preceded by them. So it is not the first idea that we find clearly and distinctly, which means that in Descartes' system, and at least from the point of view of the subject, that is, according to the method, there is an ontological truth that is preceded to the idea of infinite being or

God and it is nothing but *Cogito*. In the *Regulae* and the *fifth Replies*, Descartes distinguishes between the order of consideration and the order of reality, in fact, 'he draw a wedge between what is first in the order of the consideration and what is first in the order epistemic priority' (Flage 1999:114) or in the other word, order of reality. God is preceded by Cartesian *Cogito* not in ontological and logical sense, but in a methodological sense, that is, in terms of the order of consideration, the reasons that Descartes bring to prove God's existence, is based on (intuitive) proof of *Cogito*: 'what is first by nature, therefore, for us and according to the method, is not at first' (Alquié 1969:123). By calling everything into a sweeping doubt, Descartes sought to acquire a truth that its certainty is not dependent on anything else; this certainty is definitely *Cogito*, along with every act of the mind, which occurs only in 'instant' and basically it is the very 'certainty of our consciousness that will provides the foundation of science' (Wahl 1920:4), but this certainty provides only the foundation, then, it is with the proof of the existence of God (based on this certainty) that Descartes' plan is completed and reaffirming the existence of the world, which, according to the procedure of doubt, it was suspended. Descartes' God, although ontologically and logically precedes everything, methodologically, at least, is preceded by *Cogito*. Perhaps Descartes' plan to find the true foundation of science, which necessarily requires this precedence, is more consistent with the analytic method or method of discovery, and for this reason, Descartes preferred it to the synthetic method or method of presentation.

This methodological distinction, which we saw in Descartes' work, returns to ancient Greek philosophy, and Spinoza, when, in 2p10s for the first time introducing the proper order of philosophizing, is likely to have Aristotle in mind. Aristotle that prior to Descartes, made a distinction between order of knowledge and the order of nature, at the beginning of the *Nicomachean Ethics* says that "Let us not fail to notice, however, that there is a difference between arguments from, and those to, the first principles . . . . For, while we must begin with what is familiar, things are so in two ways – some to us, some without qualification. Presumably, then, we must begin with things familiar to us" (Aristotle 1991, 1095b12). In *Physics*, it repeats the same thing with more explanation: "in the science of nature, too, 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 clear 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 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” (Aristotle 1991, 184a17-184a21).

At the beginning of this passage, Aristotle, states that this method of study applies to all disciplines, yet in metaphysics, the difference between the order of knowledge and the order of nature is more evident than other sciences, because what exactly is the object of this knowledge, i.e. the first unmoved mover (Pellegrin 2007:84), or God, is the substance, the highest one, the living but incorporeal being, though the path to the knowledge of God begins with the universe which we have a direct experience of it, the world of material things, many of which are composed of matter and form. Even Thomas Aquinas, for whom the existence of an (incorporeal) God was not self-evident, but need to be reasoned, unlike Anselm, paved the same indirect way, chosen by Aristotle; that is, he proceeded, as departure-point for knowledge of God, from corporeal creatures whose nature is the same with ours (Gilson 1922:20). In all the five ways to prove God, Thomas begins with the general characteristics of our immediate experience, including movement and cause, and go beyond to the God.

As said earlier, Spinoza, in the 2p10s while criticizing the views of the Aristotelians (and perhaps Descartes), introduces the proper order of philosophizing: “they believed that the divine nature, which they should have contemplated before all else (because it is prior both in knowledge and in nature) is last in the order of knowledge, and that the things that are called objects of the senses are prior”.

But the question here is how Spinoza eliminates the distinction between the order of knowledge and the order of nature, especially in metaphysics, and why does he fundamentally oppose to this distinction? In other words, how can he believe in the methodological precedence of God, besides His ontological and logical primacy, and is allowed to begin his metaphysics with God? Spinoza appeals neither to doubt nor to *Cogito*, but rather to something that has been the object of discussion for many of his readers even this day.

It is said that in metaphysics, the immaterial God, is first by nature, but for us and in the order of knowledge is the last, on the contrary, the corporal thing, which is first for us, is by nature, the last. Therefore, if one does not regard God as immaterial being and attributes extension to Him, he can reconcile the relation between the order of knowledge and the order of nature in metaphysics, and eliminate the difference between them, and as a result of this, initiates metaphysics with God.

In 2p2, Spinoza explicitly states that: “Extension is an attribute of God, or God is an extended thing”. As Parens points out, “only a thinker who, like Spinoza, treated God as possessing the attribute of extension (either corporality or materiality) could claim that these two orders coincide.” (Parens 2012:85)<sup>6</sup>. Spinoza, by choosing the synthetic method (at least in the first part), in the form of a geometric order, shows his intelligence, because in this branch of mathematics, namely geometry, there is no difference between the order of knowledge and the order of nature. “In geometry... these two orders are the same because we have immediate experience of the bodies from which we abstract geometric objects” (Ibid, 86)<sup>7</sup>. So Spinoza, with the same approach that Geometer analyzes the objects, treats the main metaphysical objects<sup>8</sup>.

### **Conclusion**

As pointed out, metaphysics (or, more precisely its end) is a study of incorporeal being or God, but Spinoza attributes extension to God and claims that necessity governs all over the nature, so, on the one hand, he forms a connecting link between metaphysics and physics—as a field of research on corporeal things - and, on the other hand, between physics and ethics, that is, between theoretical science and practical science.

Before the new age and the predominance of mathematical view of the world, Aristotle's biological view dominated. In the latter view, the formal cause or actuality had a dominant role, so that Aristotle used the concept of form to explain the events of the physical world. In his explanation, the form as the final [cause] was the factor of change, for example, an acorn turns into an oak, depending on the form, and nothing else, with this explanation. Aristotle introduces the teleology that rooted in the concept of form, in his analysis of natural events.

Descartes and Spinoza both disagreed with this kind of exposition, they did not incorporate the concept of the form in their analysis, nor did

they take the opportunity to teleology. Both of them, to explain the events of nature, went back to the laws of nature. The use of the laws of nature instead of the concept of the form in the explanation of physical events, eliminates the gap between theoretical science and practical science, and links physics to ethics, because the determination that governs physical things, governs man as a component of nature, and as Spinoza explicitly stated, man in a nature is not “as a realm within a realm”, it is governed by the same laws that govern all other things. It is now possible to find out why Spinoza chose the title of *Ethics* for his book; in fact, the application of a single method and the elimination of the gap between metaphysics and physics, on the one hand, and of the gap between theoretical science and practical science, on the other hand, allowed him to talk of unified science, which Descartes had already posed.

### Notes

1- After Spinoza’s death and the publication of his works, provoked numberless refutation on his books, among these, Pierre Bayle’s reading of Spinoza’s system, especially his interpretation of the first part of *Ethics*, until the beginning of the twentieth century, among the French and English-speaking people was the standard interpretation.

2- Although both start with the *Cogito*, and reveal the existence of a thinking thing, they have not the similar view on its application. For Descartes, *Cogito*, is the base on which he built his system and upon which achieved to the certain knowledge of the world. For Geulincx, *Cogito*, is the path to the Occasionalism.

3- In *Ethics* Spinoza does not say anything about the method. The Latin term *Methodus* (method) has only been mentioned twice in the whole of *Ethics*. Once in the first *Scholium* of the 2p40 and again in the introduction to the third book, the Latin term *Mos* has been mentioned only five times in this book (Michel Gueret, André Robinet, Paul Tombeur 1977:212), but the word *Methodus* has been mentioned thirty-three times in the *TIE* (Eugenio Canone & Pino Totaro 2005:91). So it's not too bold to call it a treatise on the method.

4- This distinction is parallel with the traditional distinction between nominal and real definitions (Allison 1987:40)

5- André Tosel considers the necessitarianism, along with the anti-finalism and anti-creationism, three ontological elements of Spinoza’s materialism (Tosel 1994:136).

6- Of course, we must not forget that Spinoza attributes thought to God. “Spinoza conceived God as having extension among his attributes is true; but it does not follow that he thought of substance purely in quantitative terms ... . God is not only extended but is also a thinking thing, and Spinoza did not believe that thought was subject to quantitative categories” (E.Harris 1973:28). Although,

Errol Harris's position does not change the issue, the main issue is that Spinoza attributes the extension to the God.

7- Parens invoke Al-Farabi's *Attainment of Happiness*. Al-Farabi says that in mathematics in general and geometry in particular there is not any distinction between what is first for us and first by nature (Parens 2012:86).

8- Before Spinoza, certainly, there were philosophers who chosen the geometric method (especially in middle age), considered the matter as attribute of God (like Henry More who lived at the age of Spinoza) or to seek the unified sciences (for example Descartes and the tree of knowledge). Spinoza, but, gathered all of this doctrine in his philosophical system and linked them together logically. He chosen the geometrical method and attribute the extension to the God, and for this reason he could begin his philosophical system with corporeal God and finally he achieved to the unified science. So Spinoza's innovation was to put together these four.

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