

The World, Seen From Within (III) On Mind and Matter, and the Founders of Rationalism

Abstract

The aim of the following essay is to find a semantic core pattern, characterizing its ontology or metaphysics, in the form of thinking that emerged in the work of Descartes, spread and was modified through Spinoza and Leibniz, and became the panorama of science-oriented philosophies constituting the implicit or explicit underpinnings of contemporary thinking, research, and debate, especially in relation to the study of meaning and mind.

Keywords: Rationalism, Descartes' Meditations, Spinoza's Ethics, Leibniz' Monadology, existence, God, metaphysics of meaning

1. Descartes and the *Meditations on First Philosophy*

1.1 Biographica

Let us first take an informal look at the main historical protagonist of ontological rationalism. René Descartes (1596 – 1650) was born in Touraine, in La Haye, now named Descartes, and studied at the newly founded Jesuit Collège Henri-IV de la Flèche from 1607 to 1616. He left with a baccalaureate and a bachelor's degree in law. Many years later, in 1641, he wrote to a friend about these happy years:

Since philosophy is the key to the other sciences, I think it is useful to have studied its full course the way it is taught in the Jesuit schools. I must pay our masters the honor of saying that there is no place in the world where I think it is better taught than at La Flèche... Since there are many young people from all parts of France here, they form through their mutual conversation a certain blended atmosphere which teaches them as much as if they were travelling. And also the equality that the Jesuits instates among them by treating the humblest and the most distinguished the same way, is an extremely good invention to deliver them of the tenderness and other defects that they may have acquired from the habit of being cherished in the house of their parents.¹

Instead of following his father's wish and becoming a lawyer, he wanted to travel and so enrolled in the army to fight in Germany. Preparing for this in Breda, Holland, he met the mathematician Isaac Beeckman, who initiated him in the mathematical treatment of

problems in physics and in mathematics as a general method for achieving knowledge in all domains. He wrote a treatise on music—*Compendium musicae*—and offered it to Beeckman.² From 1625 to 1628, Descartes lived in Paris and was deeply involved with philosophy and science; but since he began to become famous, he got too involved in social life to be able to work, he said; so he decided to move to Holland, where nobody knew him. For the next twenty years, he lived in different Dutch cities and wrote continuously. His project of a Treatise on the World was abandoned when Galileo was condemned in 1633 by the Roman Catholic Church, but parts were published in French in 1637, in Holland, anonymously, as *Discours de la méthode*,³ followed by three scientific studies, *La Dioptrique*, *les Météores*, and *la Géométrie*. During the winter of 1640, he wrote his *Meditationes de prima philosophia*, in Latin, and sent the text to his friend Marin Mersenne (1588 – 1648), one of the most important scholars of the first part of the 17th century, theologian, philosopher, mathematician and musicologist, and asked him to let it circulate confidentially in a circle of trustworthy scholars, in order to get feedback and objections that he could discuss. In 1641, a first edition of the *Meditationes* was then published, accompanied by six series of objections and the author's responses; in 1642, a second edition appeared, including new objections and responses. In 1643, his philosophy was condemned by the University of Utrecht. A French translation of the *Meditationes*, with the debate, by the Duke of Luynes (1621 – 1690), revised by the author, appeared in 1647, after the publication, in Amsterdam, in 1644, of his *Principia philosophiae*, a sort of synthesis of the *Discours* and the *Meditationes*. During the 1640s, he developed an important correspondence with Princess Elisabeth of Bohemia, mainly on moral questions; this dialogue gave rise to his last work, *Les Passions de l'âme* (The Passions of the Soul), published in 1649. Invited by the Queen Christina of Sweden, in Stockholm he wrote but did not finish a dialogue, *La Recherche de la vérité par la lumière naturelle* (The Search for Truth by the Natural Light) which was published in *Opuscula posthuma*, 1701. He died in Stockholm, 1650, suddenly, in the house of his host, the French diplomat Pierre Chanut. In 1663, the Pope (Alexander VII) placed his works on the Index of Prohibited Books.

1.2 On the First Meditation

In the *Meditations*, now available in a carefully crafted critical translation and dual-language edition by John Cottingham (2013),⁴ Descartes sets out to find certainty, and therefore must start by doubting without limits. The First Meditation is called *What can be called into doubt*. So he first explains the principle of his methodical doubt and then slowly develop its results. In a first move, he doubts the reality of his sensory experiences, for he could be dreaming.⁵ Doubting is not easy; for even our imaginations must have an origin in reality. Some things in dreams seem to be less stable and more doubtful than other things, though. Clarity does not disappear entirely in dreams:

Suppose then that I am dreaming, and that these particulars—that my eyes are open, that I am

moving my head and stretching out my hands—are not true. Perhaps, indeed, I do not even have such hands or such a body at all. Nonetheless, it must surely be admitted that the visions which come in sleep are like paintings, which must have been fashioned in the likeness of things that are real, and hence that at least these general kinds of things—eyes, head, hands and the body as a whole—are things which are not imaginary but are real and exist. For even when painters try to create sirens and satyrs with the most extraordinary bodies, they cannot give them natures which are new in all respects; they simply jumble up the limbs of different animals. Or if perhaps they manage to think up something so new that nothing remotely similar has ever been seen before—something which is therefore completely fictitious and unreal—at least the colours used in the composition must be real. By similar reasoning, although these general kinds of things—eyes, head, hands, and so on—could be imaginary, it must at least be admitted that certain other even simpler and more universal things are real. These are as it were the real colours from which we form all the images of things, whether true or false, that occur in our thought. / *This class appears to include corporeal nature in general, and its extension; the shape of extended things; the quantity, or size and number, of these things; the place in which they may exist, the time through which they may endure, and so on.* [Italics mine] / So a reasonable conclusion from this might be that physics, astronomy, medicine, and all other disciplines which depend on the study of composite things, are doubtful; while *arithmetic, geometry and other subjects of this kind, which deal only with the simplest and most general things, regardless of whether they really exist in nature or not, contain something certain and indubitable.* [Italics mine] For whether I am awake or asleep, two and three added together are five, and a square has no more than four sides. It seems impossible that such transparent truths should incur any suspicion of being false. / And yet... (JC 26-27)

And yet I could be wrong here too; maybe “some malicious demon of the utmost power and cunning has employed all his energies in order to deceive me”; at least I still have the power to reject his falsehoods and keep doubting.

As you will have noticed, the quoted passage already sets up a distinction between “extended things”, which are composite, and on the other hand the “simplest and most general things” such as numbers and geometrical shapes; the latter should be expected to be more true than the former, if I am not totally deceived.⁶

The distinctive property of the things that arithmetic and geometry deal with, is that they “contain something certain and indubitable”; that two and three make five, and that a square only has four sides are “transparent truths” (*perspicua veritates*). But numbers and squares do not exist in time and space, they are not extended things. They are things for thought; and they can be *about* extended things; so they can serve to analyse shapes, sizes and numbers, and measure extension and duration of the composite things.

Here is already a sketch of Descartes’ elementary move. He distinguishes substances that may exist and extend themselves *in space and time*, and substances that do not so exist and are not determined *by space and time*. In the quoted passage, the focus is on existence or non-existence, reality or non-reality, and the things considered are—

almost *en passant*—considered through this distinction. It is evident that numbers do not have weight, location or duration; this is also the case of colour in itself, as a simple aspect of a thing, whether existing or just represented. These are general concepts, we might say today. It is harder to doubt mathematical truths about non-extended things, or the existence of colours. How do we know these truths (that we are asked to doubt for methodological reasons)? We see them “perspicuously” in our mind! We feel that we know them, as we know colours. We see them there without location, duration, etc. The truth of a numerical addition, for example, does not require space and time; equations that state it come with a feel of truth that is hard to doubt.

The move is apparently innocent and inconsequential; of course things can be either composite or simple; we can apply “simple” ideas like the properties of numbers and shapes, known from arithmetic and geometry, to composite things, namely to describe and measure their extensions by means of these non-extended things we “perspicuously” see in our mind; this is the method Descartes recommends, and there is nothing technically strange in it, though it is rather novel (and Galilei had said⁷ that the book of the universe is written in the language of mathematics—which the Church did not like as much as Descartes did). He could in fact still, later, arrive at the conclusion that only one of the two sorts of things really exists, or even none of them.

1.3 On the Second Meditation

The Second Meditation, on *The nature of the human mind, and how it is better known than the body*, thus has to continue the doubting game. Let’s suppose there is no God but a supreme deceiver who leads me into all sorts of false beliefs.

Yet apart from everything I have just listed, how do I know that there is not something else which does not allow even the slightest occasion for doubt? Is there not a God, or whatever I may call him, who puts into me [French version: ‘...puts into my mind’] the thoughts I am now having? But why do I think this, since I myself may perhaps be the author of these thoughts? In that case am not I, at least, something? But I have just said that I have no senses and no body. This is the sticking point: what follows from this? Am I not so bound up with a body and with senses that I cannot exist without them? But I have convinced myself that there is absolutely nothing in the world, no sky, no earth, no minds, no bodies. Does it now follow that I too do not exist? No: if I convinced myself of something then I certainly existed. But there is a deceiver of supreme power and cunning who is deliberately and constantly deceiving me. In that case I too undoubtedly exist, if he is deceiving me; and let him deceive me as much as he can, he will never bring it about that I am nothing so long as I think that I am something. So after considering everything very thoroughly, I must finally conclude that this proposition, *I am, I exist*, is necessarily true whenever it is put forward by me or conceived in my mind [*mente*]. (JC 34-35)

If I am not deceived, then of course I am, as are my body and everything I believe to

exist. If indeed I am deceived, then I still am, for otherwise the deceiver could not have deceived *me*, and made me falsely think I am this or that. But this argument leads nowhere as long as I do not know what it means to “be” me; what is this “I”—i.e. what am I, what sort of thing?

But what shall I now say I am, when I am supposing that there is some supremely powerful and, if it is permissible to say so, malicious deceiver, who is deliberately trying to trick me in every way he can? Can I now assert that I possess even the most insignificant of all the attributes which I have just said⁸ belong to the nature of a body? I scrutinize them, think about them, go over them again, but nothing suggests itself; it is tiresome and pointless to go through the list once more. But what about the attributes I assigned to the soul? Nutrition or movement? Since now I do not have a body, these are mere fabrications. Sense-perception? This surely does not occur without a body, and besides, when asleep I have appeared to perceive through the senses many things which I afterwards realized I did not perceive through the senses at all. Thinking? At last I have discovered it—thought; this alone is inseparable from me. I am, I exist—that is certain. But for how long? For as long as I am thinking. For it could be that were I totally to cease from thinking, I should totally cease to exist. At present I am not admitting anything except what is necessarily true. I am, then, in the strict sense only a thing that thinks; that is, I am a mind, or intelligence, or intellect, or reason—words whose meaning I have been ignorant of until now. But for all that I am a thing which is real and which truly exists. But what kind of a thing? As I have just said—a thinking thing. (JC 37)

And a little later:

But what then am I? A thing that thinks. What is that? A thing that doubts, understands, affirms, denies, is willing, is unwilling, and also imagines and has sensory perceptions. (JC 39)

In this passage, the verb “think” is used intransitively, like the cascade of verbs that follow (“doubt”, “understand”, “affirm”...). However, the extended things are only accessible to me because my thought forms images of them. It is not enough that my senses are affected by them, it takes *thinking* to know them. So now the formula could be phrased as: I am a thing that thinks other things.

Descartes’ first example is the piece of wax. It smells, I see its colour, shape, and size; I touch it, it is cold, hard; if I rap it with my knuckle, it makes a sound. But now I heat it up, the smell disappears, the colour changes, the shape is lost, the size increases, it becomes liquid and hot; it does not make a sound when touched. “Yet the wax remains.” (JC 41). My piece of wax can be changed in infinitely many ways, but I must think that it is the same piece of wax that changes.

I must therefore admit that the nature of this piece of wax is in no way revealed by my imagination, but is perceived by the mind alone. [...] But what is this wax which is perceived

by the mind alone? It is of course the same wax which I see, which I touch, which I picture in my imagination, in short the same wax which I thought it to be from the start. And yet, and here is the point, the perception I have of it is a case not of vision or touch or imagination—nor has it ever been, despite previous appearances—but of purely mental scrutiny; and this can be imperfect and confused, as it was before, or clear and distinct as it is now, depending on how carefully I concentrate on what the wax consists in. (JC 43)

The identification of an extended object happens by an act of “purely mental scrutiny”. It is not the bodily part of me, if I have a body—an eventuality discarded for the moment—but the purely mental part which *is me*, that (more or less clearly and distinctly) understands that this is a piece of wax.

The next example is shorter; what we say we see is one thing, and what we think is another:

We say that we see the wax itself, if it is there before us, not that we judge it to be there from its colour or shape; and this might lead me to conclude without more ado that knowledge of the wax comes from what the eye sees, and not from the scrutiny of the mind alone. But then if I look out of the window and see men crossing the square, as I just happen to have done, I normally say that I see the men themselves, just as I say that I see the wax. Yet do I see any more than hats and coats which could conceal automatons? I *judge* that they are men. And so something which I thought I was seeing with my eyes is in fact grasped solely by the faculty of judgement which is in my mind. (JC 44-45)

But does the piece of wax exist, and do the men that I think are crossing the square exist? That does not follow. Unless what I think exists does exist. And this hypothesis sounds dangerous.

1.4 On the Third Meditation

The Third Meditation, *On God; that he exists (De Deo, quod existat⁹)*, attacks the problem of the existence of things outside myself in a surprising way, namely by a reference to what we could call an epistemic divinity. This chapter is a difficult read; it seems to have taken considerable effort to write it, and commentators have struggled to find its core argument. Descartes uses some basic scholastic artillery, first to state that ideas are *about* things, an aboutness which is called their *objective reality*. It does not need to correspond to a real existence of their objects, that is, their *formal reality*.

But in order for a given idea to contain such and such objective reality, it must surely derive it from some cause which contains at least as much formal reality as there is objective reality in the idea. For if we suppose that an idea contains something which was not in its cause, it must have got it from nothing; yet the mode of being by which a thing exists objectively <or representatively> in the intellect by way of an idea, imperfect though it may be, is certainly not

nothing, and so it cannot come from nothing. (JC 59, <> first ed.)

This “not nothing” is something, and it follows that I am not the only thing that exists: I am not alone.

The longer and more carefully I examine all these points, the more clearly and distinctly I recognize their truth. But what is my conclusion to be? If the objective reality of any of my ideas turns out to be so great that I am sure the same reality does not reside in me, either formally or eminently¹⁰, and hence that I myself cannot be its cause, it will necessarily follow that I am not alone in the world, but that some other thing which is the cause of this idea also exists. But if no such idea is to be found in me, I shall have no argument to convince me of the existence of anything apart from myself. For despite a most careful and comprehensive survey, this is the only argument I have so far been able to find. (JC 59-61)

So the question is: what is this other thing? It must be a thing that my mind cannot have created by itself. My ideas are about substances, and since I am myself a substance, I can have created, that is, put together, most of what I have in mind, corporeal or incorporeal things, and qualities, whether clear and distinct or confused, in fact, all things considered, everything except the idea of God.

So there remains only the idea of God; and I must consider whether there is anything in the idea which could not have originated in myself. By the word ‘God’ I understand a substance that is infinite, <eternal, immutable,> independent, supremely intelligent [*summe intelligentem*], supremely powerful, and which created both myself and everything else (if anything else there be) that exists. All these attributes are such that, the more carefully I concentrate on them, the less possible it seems that they <the idea I have of them> could have originated from me alone. So from what has been said it must be concluded that God necessarily exists. / It is true that I have the idea of substance in me in virtue of the fact that I am a substance; but this would not account for my having the idea of an infinite substance, when I am finite, unless this idea proceeded from some substance which really was infinite. (JC 63, <> French version)

Summe intelligentem? The French version has: *toute connaisante*, all-knowing. A compromise may be: understanding everything (from the verb *intellego*, “understand”). Since God is defined by his intelligence, and I am equipped with an intelligence that is lesser in perfection, since it is finite, whereas God’s is infinite, I cannot have conceived the idea of God myself. It takes a “God” to think: God. A variant of this argument may read: I understand, for example in mathematics, that there is more to understand than what I can understand, then that “more” is God’s part.

A page later, we read, as in a lateral, added argument, what might have been foregrounded and examined as a major source of reflection:

... For how could I understand that I doubted or desired—that is, lacked something—and that I was not wholly perfect, unless there were in me some idea of a more perfect being which enabled me to recognize my own defects by comparison?

The entire *cogito* is built on doubting. Doubting is “lacking something”, not-knowing and wanting to know; asking a question and believing that there is an answer. Where is this answer? Does the question have an answer? It must, if it is clearly and distinctly asked. But where is the knowledge that would satisfy my question? The painful but essential, inherent imperfection of thinking by asking questions, which means to *think* of what is *not known*, leads me to the recognition of this instance superimposed upon my thinking. Our questions are driven by an ontological principle, namely that something *is* or *possibly is* the case, when we are struggling to find out *what* is the case. Since doubting is the basic reality of thinking which cannot be denied, therefore this perfection behind my imperfection is also real. It follows from the nature of thinking. The perfection in question is what Descartes calls “God”.¹¹ One may wonder, as his contemporaries certainly did, about the religious status of this ontological principle. At the end of the Third Meditation, he writes:

... when I turn my mind’s eye upon myself, I understand that I am a thing which is incomplete and dependent on another and which aspires without limit to ever greater and better things; but I also understand at the same time that he on whom I depend has within him all those greater things, not just indefinitely and potentially but actually and infinitely, and hence that he is God. The whole force of the argument lies in this: I recognize that it would be impossible for me to exist with the kind of nature I have—that is, having within me the idea of God—were it not also the case that God really existed. By ‘God’ I mean the very being the idea of whom is within me, that is, the possessor of all the perfections which I cannot grasp, but can somehow reach in my thought, who is subject to no defects whatsoever. (JC 73)

The object of religious faith is *comparable* to the object of thinking, he adds:

... For just as we believe through faith that the supreme happiness of the next life consists solely in the contemplation of the divine majesty, so experience tells us that this same contemplation, albeit much less perfect, enables us to know the greatest joy of which we are capable in life. (JC 73)

This is as close as Descartes gets to the religious version of “God”. For the believer, there may be a supreme happiness in next life, but in earthly life, there is for everyone another source of joy, namely the search for truth in thinking and science.

1.5 On the Fourth Meditation

The Fourth Meditation, *On truth and falsity* [De vero et falso], derives a basic epistemology

from this relation holding between the cogito and God understood as the god of thinking.

Corporeal and imagined things are often poorly perceived. Things that are objects of the intellect are easier to “see” clearly and distinctly. This is true of the *cogito* itself:

And indeed the idea I have of the human mind, in so far as it is a thinking thing, which is not extended in length, breadth or height and has no other bodily characteristics, is much more distinct than the idea of any corporeal thing. (JC 75)

The path from cogito to God is rather direct; it leads to the knowledge of all other things in the universe:

And when I consider the fact that I have doubts, or that I am a thing that is incomplete and dependent, then there arises in me a clear and distinct idea of a being who is independent and complete, that is, an idea of God. And from the mere fact that there is such an idea within me, or that I who possess this idea exist, I clearly infer that God also exists, and that every single moment of my entire existence depends on him. So clear is this conclusion that I am confident that the human intellect cannot know anything that is more evident or more certain. And now, from this contemplation of the true God, in whom all the treasures of wisdom and the sciences lie hidden [*in quo nempe sunt omnes thesauri scientiarum et sapientiae absconditi*], I think I can see a way forward to the knowledge of other things [... of the other things in the universe, “des autres choses de l’Univers”]. (JC 75)

Of course, God could be the supreme deceiver. But that argument is quickly dismissed:

... I recognize that it is impossible that God should ever deceive me. For in every case of trickery or deception some imperfection is to be found; and although the ability to deceive appears to be an indication of cleverness or power, the will to deceive is undoubtedly evidence of malice or weakness, and so cannot apply to God. (JC 75)

In fact, if the deceiver argument were not dismissed, there would be no way to stop radical skepticism, other than ordinary doctrinary religious belief.

So the principle of confidence that follows from my relation to the god of sciences and wisdom tells me that my thinking cannot be totally wrong, since it is an incomplete version of the Other’s, and thus excludes radical scepticism. The question is now how to understand the nature of the mistakes and errors of my mind when I try to gain knowledge of the world; it has to do with the two agents in the mind, the intellect and the will:

...when I look more closely at myself and inquire into the nature of my errors (for these are the only evidence of some imperfection in me), I notice that they depend on two concurrent causes, namely on the faculty of knowledge which is in me, and on the faculty of choice or freedom of the will [*à savoir, de la puissance de connaître qui est en moi, et de la puissance*

d'élire, ou bien de mon libre arbitre]; that is, they depend on both the intellect [mon entendement] and the will [mon libre arbitre] simultaneously. Now all that the intellect on its own does is to enable me to perceive the ideas which are subjects for possible judgements [the French version adds: without affirming or denying anything]; and when regarded strictly in this light, it turns out to contain no error in the proper sense of that term. (JC 79)

God's mind must also consist in both intellect and will, and in his case, these components are coextensive.

For although God's will is incomparably greater than mine, both in virtue of the knowledge and power that accompany it and make it more firm and efficacious, and also in virtue of its object, in that it ranges over a greater number of items, nevertheless it does not seem any greater than mine when considered as will in the essential and strict sense. This is because the will simply consists in our ability to do or not do something (that is, to affirm or deny, to pursue or avoid); or rather, it consists simply in the fact that when the intellect puts something forward, we are moved to affirm or deny or to pursue or avoid it in such a way that we do not feel ourselves to be determined by any external force. [...] From these considerations I perceive that the power of willing which I received from God is not, when considered in itself, the cause of my mistakes; for it is both extremely ample and also perfect of its kind. Nor is my power of understanding to blame; for since my understanding comes from God, everything that I understand I undoubtedly understand correctly, and nay error here is impossible. *So what then is the source of my mistakes? It must simply be this: the scope of the will is wider than that of the intellect; but instead of restricting it within the same limits, I extend its use to matters which I do not understand. Since the will is indifferent in such cases, it easily turns aside from what is true and good, and this is the source of my error and sin.* (JC 81-83) (Italics mine)

The scope of the will is unlimited, whereas the intellect is limited, hence their unavoidable conflict in me and my erring into willed areas that I do not sufficiently, clearly understand. "... since it is clear by the natural light that the perception of the intellect should always precede the determination of the will." (JC 85)

I must make sure I have a clear understanding of my own hypotheses before I assert them, or of my plans, before I decide to follow my will to make them real; otherwise, my thoughts or plans will be mistakes.

A particularly interesting example of what to do when the understanding is not sufficient follows; how should I understand the relation between my mind and my body:

But now, besides the knowledge that I exist, in so far as I am a thinking thing, an idea of corporeal nature comes into my mind; and I happen to be in doubt as to whether the thinking nature which is in me, or rather which I am, is distinct from this corporeal nature or identical with it. I am making the further supposition that my intellect has not yet come upon any

persuasive reason in favour of one alternative rather than the other. This obviously implies that I am indifferent as to whether I should assert or deny either alternative, or indeed refrain from making any judgement on the matter. (JC 83)

Descartes must declare that the problem of understanding the relation between incorporeal and corporeal nature is not yet ready to be solved, so the will to judge about it must be kept away from the temptation to act. In other and more modern words, whether monism or dualism is right can not yet be determined on the ground of available results of the work of the intellect.

1.6 On the Fifth Meditation

Since our thoughts—whether clear or not—are mainly about things in the world, the short *Fifth Meditation* now turns to, according to the title, *The essence of material things “and the existence of God considered a second time”*, before discussing in the final Sixth Meditation their existence.

But before I inquire whether any such things exist outside me, I must consider the ideas of these things, in so far as they exist in my thought, and see which of them are distinct, and which confused. (JC 63)

Essences of things are their properties or natures, which can be known by our clear and distinct ideas of them.

Quantity, for example, or ‘continuous’ quantity as the philosophers commonly call it, is something I distinctly imagine. That is, I distinctly imagine the extension of the quantity (or rather of the thing which is quantified) in length, breadth and depth. I also enumerate various parts of the thing, and to these parts I assign various sizes, shapes, positions and local motions and to the motions I assign various durations. (JC 63)

There are, however, many things that do not have extension in time and space but still have properties that can be known:

But I think the most important consideration at this point is that I find within me countless ideas of things which even though they may not exist anywhere outside me still cannot be called nothing; for although in a sense they can be thought of at will, they are not my invention but have their own true and immutable natures. When, for example, I imagine a triangle, even if perhaps no such figure exists, or has ever existed, anywhere outside my thought, there is still a determinate nature, or essence, or form of the triangle which is immutable and eternal, and not invented by me or dependent on my mind. This is clear from the fact that various properties can be demonstrated of the triangle, for example that its three angles equal two right angles, that its greatest side subtends its greatest angle, and the like; and since these properties

are ones which I now clearly recognize whether I want to or not, even if I never thought of them at all when I previously imagined the triangle, it follows that they cannot have been invented by me. (JC 89-91)

This is an important point; the properties of a geometrical figure are given by nature, not by me; they are not psychological, as we would say today.¹² I can discover such properties, but not invent them. Sometimes, they are even hard to find or “see”.

...Some of the things I clearly and distinctly perceive are obvious to everyone, while others are discovered only by those who look more closely and investigate more carefully; but once they have been discovered, the latter are judged to be just as certain as the former. In the case of a right-angled triangle, for example, the fact that the square on the hypotenuse is equal to the square on the other two sides is not so readily apparent as the fact that the hypotenuse subtends the largest angle; but once one has seen it, one believes it just as strongly. (JC 95)

Descartes adds a new argument here: temporal constancy of findings. If something is proven today, will it still be valid tomorrow? So, if believing presupposes proving, I will not have to spend my time proving time and again the same truths of the objects of my thinking; I have to believe that the arguments of the proof are still valid after the proving, so that my memory of their results will suffice for establishing these truths. I have to believe in the “natural light” that allows me to elaborate the clear and distinct proof, and in this sense, Descartes insists, I have to believe in the existence of a God who does not afterwards deceive me by arbitrarily invalidating the arguments his light once gave me. Otherwise, I would only have “shifting and changeable opinions” (JC 97). I can prove that the three angles of a triangle are equal to two right angles, “but as soon as I turn my mind’s eye away from the proof, then in spite of still remembering that I perceived it very clearly, I can easily fall into doubt about its truth, if I am unaware of God” (JC 97). *Time* could have changed everything, and the world of my perceptions could therefore be different now from when the proof happened... This would again ruin all knowledge and lead to radical skepticism. An ontology of temporal constancy is presupposed in the establishment of rational beliefs.

For I can convince myself that I have a natural disposition to go wrong from time to time in matters which I think I perceive as evidently as can be. This will seem even more likely when I remember that there have been frequent cases where I have regarded things as true and certain, but have later been led by other arguments to judge them to be false. / Now, however, I have perceived that God exists, and at the same time I have understood that everything else depends on him, and that he is no deceiver; and I have drawn the conclusion that everything which I clearly and distinctly perceive is of necessity true. Accordingly, even if I am no longer attending to the arguments which led me to judge that this is true, as long as I remember that I clearly and distinctly perceived it, there are no counter-arguments which can

be adduced to make me doubt it, but on the contrary I have true and certain knowledge of it. And I have knowledge not just of this matter, but of all matters which I remember ever having demonstrated, in geometry and so on. (JC 97)

Whether the things I wish to understand are material or immaterial, that is, corporeal or intellectual, I can in principle have certain knowledge about their nature, since I know that what God shows me clearly and distinctly to be true at time t_n will still be true at t_{n+x} . I can therefore trust the results of clear thinking, whether the object is purely abstract or a corporeal thing that mathematics can be applied to.

...And now it is possible for me to achieve full and certain knowledge of countless matters, both concerning God himself and other things whose nature is intellectual, and also concerning the whole of that corporeal nature which is the subject matter of pure mathematics. (JC 99)

1.7 On the Sixth Meditation

The long final *Sixth Meditation, On the existence of material things, and the real distinction between mind and body*¹³, brings us to the core question of Descartes' ontological inquiry. Now that we know what it means for something to exist, we are able to ask the hard question: do material things exist?

One thing is that things that I perceive clearly and distinctly and can apply mathematics to are likely to exist, since God must be able to create things that I perceive in this way. But we need more.

A new distinction is introduced. When I turn my mind to material things, I use my faculty of imagination (*imaginatio*). Imagination is different from pure understanding; it applies the cognitive faculty (*facultas cognoscitiva*) to "a body which is intimately present to it, and which therefore exists" (JC 101). Descartes explains: both uses of the cognitive faculty are actual if I imagine a triangle; I understand what it is, and I also "see... with my mind's eye" the three lines "as if they were present before me" (*ibid.*). But if I think of a thousand-angle, a chiliagon, I again understand what it is, but now I do not imagine it in the same way; its mental representation gets confused. What my mind's eye sees could as well be any myriagon. By contrast, when I consider a pentagon, I can use both forms of cognition, but imagination requires an effort which is not acquired for understanding, which shows the difference between them. Furthermore, the power of understanding (*vis intelligendi*) is a necessary constituent of my own essence, that is, the essence of my mind. By contrast, imagination is not necessary in this sense; therefore, it must depend on something distinct from myself. If there exists something that can make me imagine it, then it could be this that enables me to imagine a corporeal thing. Nothing else in my mind seems to enable me to do this. Does the so-called sensory perception give me a sure argument for the existence of corporeal things?

I had long believed so, and been convinced that I had nothing at all in the intellect which I had not previously had in sensation (*nullam plane me habere in intellectu, quam*

non prius habuissem in sensu) (JC 104). I also believed I had a body. Bodily feelings (hunger, thirst) gave me ideas (that I should eat, drink). Then came the systematic doubt and all the arguments it used. But now that I have learnt from my examination, I do no longer think that everything should be called into doubt, and I begin to believe in certain things to be true. I am a thinking, non-extended thing. My body is an extended, non-thinking thing. *My imagination and my sensory perception are intellectual, but the ideas they produce are produced without my cooperation and often against my will, so they must be due to another substance than mine.* This substance could be that of corporeal things corresponding to what I perceive and imagine, or it could be God, who would therefore again be a deceiver, which is inadmissible. Therefore corporeal things exist. They may have other properties than those I perceive and imagine, since my sensory grasp is sometimes obscure and confused; but they at least have the mathematical properties that I clearly and distinctly understand. I have a body that exists. In nature, many things are unclear to me, but some of them affect my body and make me feel them.

Nature also teaches me [...] that I am not merely present in my body as a sailor is present in a ship, but that I am very closely joined and, as it were, intermingled with it, so that I and the body form a unit. If this were not so, I, who am nothing but a thinking thing, would not feel pain when the body was hurt, but would perceive the damage purely by the intellect, just as a sailor perceives by sight if anything in his ship is broken. Similarly, when the body needed food or drink, I should have an explicit understanding of the fact, instead of having confused sensations of hunger and thirst. For these sensations of hunger, thirst, pain and so on are nothing but confused modes of thinking which arise from the union and, as it were, intermingling of the mind with the body. (JC 113)

Now my body exists, as well as my mind, and the two are “intermingling” and causally affecting each other.

Also, the fact that some of the perceptions are agreeable to me while others are disagreeable makes it quite certain that my body, or rather *my whole self*, in so far as I am a combination of body and mind, can be affected by the various beneficial or harmful bodies which surround it. (JC *ibid.*) (Italics mine)

Still, not every belief I have acquired about nature has been taught by nature itself; many things stem from habits of making ill-considered judgements, likely to be false. I need to specify what it means for something to be “taught by nature”. *My nature* (JC 115), as a combination of mind and body, indeed teaches me to avoid sources of pain and seek sources of pleasure, but it does not teach me the truth of these sources of pain and pleasure: of experienceable things. In order to understand these things, I must wait until the intellect has examined the matter. Here, the mind acts on its own, and its information is often obscure.

For the proper purpose of the sensory perceptions given me by nature is simply to inform the mind of what is beneficial or harmful for the composite of which the mind is a part; and to this extent they are sufficiently clear and distinct. But I misuse them by treating them as reliable touchstones for immediate judgements about the essential nature of the bodies located outside us; yet this is an area where they provide only very obscure and confused information. (JC 117)

Man's nature is not omniscient; man is a limited thing, and so it is only fitting that his perfection should be limited. We still eat and drink things that are bad for us. We get sick.

...a clock constructed with wheels and weights observes all the laws of its nature just as closely when it is badly made and tells the wrong time as when it completely fulfils the wishes of the clockmaker. In the same way, I might consider the body of a man as a kind of machine equipped with and made up of bones, nerves, muscles, veins, blood and skin in such a way that, even if there were no mind in it, it would still perform all the same movements as it now does in those cases where movement is not under the control of the will, or, consequently, of the mind. (JC 117)

Still, how can nature in itself allow things to work badly or a man to be "sick" by following the instructions from the body?

Well, the mind is indivisible, whereas the body is divisible. The mind does not have parts in the same sense as the body has parts. And the mind is not affected by all parts of the body, but only by the brain, or perhaps just by one small part of the brain, namely the part which is said to contain the "common" sense.¹⁴ "Every time this part of the brain is in a given state, it presents the same signals to the mind, even though the other parts of the body may be in a different condition at the time." (JC 121) The system of the body and its instructions to the mind are generally good, but when the instructions come from different parts of the body, they can overrule each other. This is good to know, in order to understand the conditions of the well-being of the body. My senses report the truth much more frequently than not; and I use more than one sense to investigate the same things, plus my memory of past experiences, and my intellect that can examine causes of error. Therefore, I can rely on what my senses tell me every day. I do not have to repeat the experiment of doubting. As to the question of dreams and waking experiences, the argument of memory and temporal constancy applies again: I can know whether I am dreaming or being awake from the fact that dreamed events are incoherent, whereas awake experiences are linked to "all the other actions of life" (JC 125). In dreams, people and things appear and disappear immediately; in awake experiences, I "distinctly see where things come from and where and when they come to me, and when I can connect my perceptions of them with the whole of the rest of my life without a break, then I am quite certain that when I encounter these things I am not asleep but awake." (ibid.) In such cases, I am completely free from error, because, again, God is not a deceiver. Still, life is

so stressful that we do not always take the time to stop and perform the reality check just mentioned. So, “in this human life we are often liable to make mistakes about particular things, and we must acknowledge the weakness of our nature.” (ibid.)

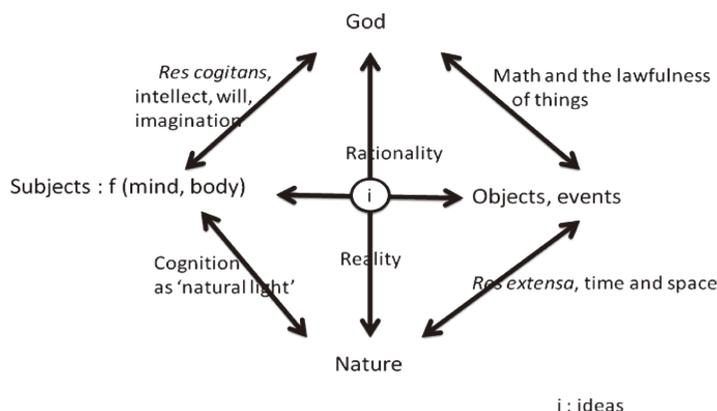
1.8 Concluding: Descartes’ ontology

Descartes vividly discusses the objections he has called for, addressing different critics and taking the arguments in the six *Meditations* one by one.¹⁵ Here, we are ready to consider the semantic structure of the thinking manifested by the body of the six chapters, a statement which can safely be taken to represent the core of the founding prime philosophy, or metaphysics, which came to be called rationalism.

There is a stable conceptual pattern in the reasoning presented in the six *Meditations*. It may be found by looking at the entities referred to in the discussions on what exists, how to find out, and what entities to consider as candidates for existence. There is the *subject* (my term) as a mind “intermingled” with a body.¹⁶ The mind part of the subject resists doubt of existence, because doubting is thinking, and thinking cannot deny its own existence. The thinking thing, the subject, mind, is conceived as a limited faculty of understanding pointing toward an unlimited intellectual faculty of understanding, the instance called *God*. This instance is also mentioned as the creator of the extended, corporeal, material *world* of nature. God lets the subject experience, imagine, and memorize *objects* and events that are within the range of the subject’s sensory perception. Some of the perceived content is clear and reliable (because God is not a deceiver, this argument is basic), some is less clear but can give rise to interpretations that can be clarified through investigation and mathematical analysis, or modelling. In the *Meditations*, Descartes’ reasoning follows the following steps extending existence from instance to instance: *Mind* → *God* → *Body* → *God* → *Objects* → *God* → *Nature*. Or simplified: *Mind* → *Body* → *Objects* → *Nature*, given that God assures the transmission between any two steps.

If we accept that the entity called *my body* belongs among the sensory objects, the ontological setup can be modeled as a two-dimensional diamond interrelating the resulting four constitutive entities defining two crossing axes. Let us imagine a vertical axis between God and Nature, the material universe. This axis must relate the true laws of nature, rationality, and the nature that these laws govern. Nature is rational, to the extent that its laws can be understood; and science, including philosophy, is the project of its understanding, necessarily limited by the finite minds that undertake it, and by the finite objects and events by which it is given to human cognition. I would call this axis *constitutive*, as opposed to the *epistemic* horizontal axis spanning from the mind-body subject, to the worldly objects of perception. Nature is indirectly given through the *ideas* that subjects have, by the internal “natural light” of the intellect, and as directly as possible by experiences of external objects and events that the intellect can interpret through the explanatory representations it forms of them—in the crossing point between the two axes. The result is the following graph¹⁷:

Figure 1. An ontological model of Descartes' rationalism



This diamond-shaped graph offers an overall view of the main ontological instances, or sorts of existing entities, and the basic connections between them, that Descartes proposes to consider as the new grounds of truthful thinking. The epistemic subject-object axis has become a standard reference in modern philosophies of many, maybe even all, kinds; the constitutive vertical axis is much more problematic. Descartes' God does not really form part of a theology, and does not care for human souls or for the life and death of individuals or nations, but only represents a principle 1) of logico-mathematical and causal intelligibility of the world, 2) of temporal continuity of past, present and future, and 3) of spatio-temporal coherence of the universe. It is evident from the *Meditations* that without the philosophical, mathematical "God", the system, or rather the argumentation, would collapse. It is equally evident that a religious and theological interpretation of this instance would destroy it.

Before Galileo and Descartes, the Scholastics had prepared the ground by their debates on nominalism and realism, concerning the role of God¹⁸ in his relation to the created world—our vertical axis. In the new ontology, a horizontal axis inserts the problems of a basic epistemic phenomenology, we may say, into the landscape of *things*, opening thereby a field of ontologically relevant observations of bodily movements, velocities, changes, proportions, light, weight, etc. which transforms the pre-rationalist view of the world as either totally (or sufficiently) known, by theology, or totally unknown, to the classical sceptics. By introducing the phenomenological axis and combining it intimately with the axis of worldly constitution, this new perspective presents the world as humanly *knowable*, as a project of human discovery, and correlatively presents knowledge as *questionable* and testable by experience and measurement. This is, I claim, the essential meaning of the *cogito*. This was also the message picked up by Descartes' followers, especially in France and the Netherlands.

However, before the new ontological framework reaches our romantic and post-romantic modernity, through the Enlightenment, it goes through a number of modifications, and those may well explain some of the strange conjunctures of modern thinking and especially some of its onto-epistemological conflicts and differentiations.

Descartes' thinking was immensely influential, firstly as it offered a first full-blown philosophy of science. Secondly, though, it was influential as an ontological provocation that called forth a rich variety of critical reactions, protests, and alternative suggestions: in particular, the "godless" use of the concept of God, and thereby the emancipation of the concept of mind as an "I", a purely cognitive instance involved in the understanding of the world and in human agency in it, rather than as an eternal "soul". Surprisingly enough, as I intend to show, the underlying bi-axial structure however seems to survive until today, and to subsist as a tacitly efficient framework even in modern attempts to either eliminate or "problematize" metaphysics. I am going to discuss two subsequent ontological projects here, one by Spinoza and one by Leibniz. The former was almost directly in contact with Descartes, so a minimum of biographical history may be suitable.¹⁹

2. Spinoza's *Ethics*: The Monist Modification

2.1 Biographica

Baruch was born in 1632 in Amsterdam, in an immigrant Jewish Portuguese family, and studied in the Talmud Torah School until the age of about fourteen. He then engaged in commercial activities with his father and his brother Gabriel; but after his father's death in 1654, he soon seemed to have stopped and to have strongly upset the Jewish-Portuguese community, which in 1656 excommunicated him on the account of bad and heretic behavior. In 1661, he started writing the *Treatise on the Emendation of the Intellect*, where he set off to "find out whether there was anything which would be the true good", as he says in the first lines; a text he left unfinished. Spinoza had met friends who were free-thinking merchants and interested in the new philosophy of Descartes, whose books were published and well-known in Holland. Descartes' new science of geometry and physics was becoming influential, and the atheists met to discuss religion, science, and the language of science. Spinoza learned Latin in the medical doctor Franciscus van den Enden's very elitist and atheist school from the early 1650s, as an important part of his secularisation. He was even lodged in Van den Enden's house before his excommunication. It was allegedly Descartes' requirement of clear reason that made him drop theology for science. His Cartesian rationalism, stemming from Van den Enden's school, was undoubtedly the intellectual motive that caused his expulsion from the Jewish community.²⁰ The learned Danish anatomist Olaus Borch traveled in the Low Countries and noted in his diary that "there were certain atheists in Amsterdam, most of them Cartesians, among which an impudent atheist Jew"; his notes show that Spinoza in his Amsterdam period belonged to a group of radical Cartesians²¹. In Leiden, Borch hears the same thing from colleagues of the university there, and mentions Van den Enden (Klever, p. 24: "probably the mastermind of the circle"²²) and the mathematician Hudde, among others. Borch wrote: "They don't preach openly atheism, because they often speak about God, but by God they do understand nothing else than this whole universe..." Another Danish anatomist, Niels Stensen (Steno), who studied medicine in Leiden, and who knew

Spinoza personally, described him as an expert in Cartesian philosophy and hailed him in a letter for reforming it. It is true that during the 1660s, Spinoza changed his views of ontology on certain points. In his *Short Treatise on God, Man, and His Well-Being*, written before he left Amsterdam in 1660 or 1661, he declared that nature is a continuum, and that objects, including human beings, are just *modes* of the divine nature, following laws known to us through our common notions. There is only one substance, but it has different *attributes*, including mind and matter. There is no free will, because the one and only substance of the world is totally determined. All modes of the substance have both mind and matter as attributes. Things have mind. Still, Spinoza teaches Descartes to friends and scientists using the 1663 edition of his introduction, *Descartes' "Principles of Philosophy"*. What interests him most in Descartes now is his science, especially his optics. He adds to this dimension a deep interest in language, grammar, philology, including Latin and Hebrew (of which he wrote a grammar)—as means of obtaining a scientific and critical view of the Scriptures.²³ Spinoza's non-Cartesian association of mathematics and logic might, I venture, stem from this aspect of his scholarship, developed through his friendship with the philosopher-physician Lodewijk Meyer.²⁴ As his service to science, Spinoza built telescopes and microscopes that became famous for their quality; a biographer notes, however, that, according to him, things could not be seen as they are in themselves—the eternal properties and laws of things and processes could only be discovered by deduction from common notions and evident axioms: “The eyes of the mind, by which it sees and observes the things, are the demonstrations.”²⁵

The German scientist and philosopher G. W. von Leibniz visited Spinoza to talk about optics in 1676, and found him very depressed by the violent reactions to his *Treatise*. The climate had changed; Van den Enden had been hanged in 1674, and religious repression was now ferocious in Holland. There was no philosophical discussion between the two thinkers; Spinoza must have felt that it would have been too dangerous to speak out, since he knew that Leibniz was a man of the world. A friend, Baron van Tschirnhaus, however, had asked Spinoza in vain if he would allow him to show a part of the *Ethics* manuscript to Leibniz in Paris; nevertheless, the Baron, who was a close follower of Spinoza's philosophy, did communicate a great deal orally to him, as appears in a highly interesting 1675 note by Leibniz, written after such a conversation:

According to him [Spinoza] the mind itself is in a certain sense a part of God. He thinks that there is sense in all things to the degree of their existence. God is defined by him as an absolutely infinite Being, which contains all perfections, i.e. affirmations or realities or what may be conceived. Likewise only God would be substance or a Being which exists in itself or which can be understood by itself; all creatures are nothing else than modes. Man is free in so far as he is not determined by any external things. But because this is never the case, man is not free at all, although he participates more in freedom than the bodies. (Klever, pp. 46-47)

There is one and only one substance, and no things or creatures, for those are just

modes of the substance and cannot be understood in themselves. But there is mind in all substance, besides matter, so Descartes' distinction between two substances, mind and matter, is now installed within the one and only substance as two of its attributes. Therefore, there must be mind in all modes (things), namely God's mind, which is also present and known as the human mind. The note continues:

The mind would be nothing but the idea of the body. He thinks that the unity of the bodies is caused by a sort of pressure. Most people's philosophy starts with the creatures, Descartes started with the mind, he [Spinoza] starts from God. Extension does not imply divisibility as was unduly supposed by Descartes; although he supposed to see this also clearly, he fell into the error that the mind acts on the body or is acted upon by the body.

Descartes' idea and analyses of interactions between mind and body are bluntly rejected. Spinoza thinks that causation—non-intentional, since there is no free will—permeates matter as its only active principle, but rigorously claims that mind can only act on mind, and matter only on matter, because *the attributes cannot act on each other*. Otherwise they would be (causally) the same. In a sense, I would say, dualism is made extreme in Spinoza, because it is not causally mediated. Leibniz even adds this detail: "... He believes in a sort of Pythagorical transmigration, namely that minds go from body to body."²⁶ Minds act on minds and are detached from matter, since they cannot interact causally with it.

Spinoza died in 1677, in the middle of many projects.²⁷ He left a deep impression on the scholarly culture around him. Tschirnhaus, one of the few thinkers and scientists who stayed close to him and who followed his thought most closely, developed his Spinozistic naturalism in a book (1686) called *Medicina mentis...*, explaining that the human mind is only cured from its errors by the "science of nature". This program reappears centuries later in the *therapeutic program*²⁸ of a philosopher who also wrote a *Tractatus*, Wittgenstein. When reading Tschirnhaus, one might be tempted to conclude that scientism really emerges as a soul-oriented religion. I quote Klever (52, italics mine indeed):

By physics I understand nothing else than the science of the universe demonstrated a priori by the rigorous method of the mathematicians and confirmed a posteriori by the most evident experiences which even convince the imagination ... *This science is truly divine*. One here exposes the laws... according to which everything produces invariably its effects. The knowledge of this science *liberates us* also of innumerable prejudices. ... In this way, through the mediation of the *true physics*, *one becomes so to say a completely new man and one is regenerated* philosophically. ... One learns here to see the things from a higher point of view and to consider that nothing is more evident for the understanding than *our continuous dependence on God alone*, which is such that we cannot even raise our hand or produce a thought and, in a word, that never, neither in our mind nor in our body, can we absolutely do anything without *the actual concurrence of God*. ... not only the knowledge of our mind

and its *eternity*, but also of *God himself, of his real and necessary existence and his infinitely perfect attributes* ... becomes clear and evident for us.

Doing science becomes a sort of redeeming religious service,²⁹ and a source of salvation of the eternal human soul; knowing about science means being informed by the theological principles of the universe. This is the legacy of Spinoza, as it was inherited by a huge mass of thinkers,³⁰ when rationalism, through Enlightenment, became our modernity.

The ontology embedded in Spinoza's thinking may be seen as a compromise between Cartesian rationalism and Judaism. The critical, phenomenological dimension in Descartes disappears; instead of an active, free, and hesitant mind that struggles to clarify its imperfect thought and is constantly exposed to the risk of failure in its attempts to coherently interpret its worldly experience and reach a level of trustworthy knowledge, we get a triumphantly confident mind-soul that puts its trust in the doctrine of divine nature and its laws that can be known directly and totally—Spinoza says: *adequately*—if God's *logic* is followed. It has to be logic, rather than mathematics, that this “therapeutic rationalism” refers to as its constitutive authority.³¹ This is why the *Ethics* was written as an axiomatic system, a logical cascade of necessary propositions—*ordine geometrico demonstrata*—and not in the form of “discourse”, in argumentative prose. The obvious result of this choice is that the text is almost impossible to read; only the comments added to the demonstrations are written in fluid prose, the rest consists in petrified formulaic lists of propositions that state what is necessarily true. The effect is particularly mystifying: here is a system in which every proposition is *necessary*, and nothing can be questioned or altered—and submitting to it will be rewarded by the salvation of the soul.³²

2.2 On the *Ethics* (first part): God

Descartes' first person pronoun designates a narrator, in his *Discourse on Method* as in the *Meditations*. It is an “I” telling us how he goes through different stages in a temporal process of reasoning. By contrast, Spinoza's first person pronoun is expository, it is an instance that leads the reader from point to point in a preestablished conceptual landscape. In the five parts of the *Ethics*, Definitions are followed by Axioms and Propositions. Let us take a look at the general aspect of the first part. In the initial definitions, the first person tells us what he “means” by eight expressions:³³

PART I. CONCERNING GOD

DEFINITIONS

I. By *that which is self-caused*, I mean that of which the essence involves existence, or that of which the nature is only conceivable as existent.

II. A thing is called *finite* after its kind, when it can be limited by another thing of the same nature; for instance, a body is called finite because we always conceive another greater body. So, also, a thought is limited by another thought, but a body is not limited by thought, nor a

thought by body.

III. By *substance*, I mean that which is in itself, and is conceived through itself: in other words, that of which a conception can be formed independently of any other conception.

IV. By *attribute*, I mean that which the intellect perceives as constituting the essence of substance.

V. By *mode*, I mean the modifications of substance, or that which exists in, and is conceived through, something other than itself.

VI. By *God*, I mean a being absolutely infinite—that is, a substance consisting in infinite attributes, of which each expresses eternal and infinite essentiality.

Explanation: I say absolutely infinite, not infinite after its kind: for, of a thing infinite only after its kind, infinite attributes may be denied; but that which is absolutely infinite, contains in its essence whatever expresses reality³⁴, and involves no negation.

VII. That thing is called *free*, which exists solely by the necessity of its own nature, and of which the action is determined by itself alone. On the other hand, that thing is *necessary*, or rather constrained, which is determined by something external to itself to a fixed and definite method of existence or action.

VIII. By *eternity*, I mean existence itself, in so far as it is conceived necessarily to follow solely from the definition of that which is eternal.³⁵

Explanation: Existence of this kind is conceived as an eternal truth, like the essence of a thing, and, therefore, cannot be explained by means of continuance or time, though continuance may be conceived without a beginning or end. (Italics mine)

The writer does not tell us why he must speak in such a strange way, and why he has decided to change the meaning of certain words and expressions—*self-caused*, *finite*, *substance*, *attribute*, *mode*, *God*, *free*, *necessary*, *eternity*—but we understand that there will be propositions in what follows that will be true “by definition” in the sense of following from these strange sentences, not by reference to anything else. The defining terms, such as existence, essence, determination..., are left mysteriously untouched. Here already, the treatise dismisses the expectation that it would explore something yet unknown in order to gain new knowledge about it; instead it will explore *what can be said* about what is already known from the definitions.

What entities are depends on conceptions, not on their properties themselves; the mind rules. In (I), the notion of the “conceivable” is part of the definition of *causa sui* by existence; so to be “self-caused” is dependent on *conceiving* it as existent. In (II), being a finite body depends on us *conceiving* of a greater body. In (III), substance is *conceived* through itself, that is, dependent on an independent *conception*. In (IV), an attribute (to substance) is defined by *the intellect perceiving it* as being the essence of (a) substance. In (V), a mode (of substance) is defined as something existing in and *conceived through* something else. In (VI), God is defined as something of which *we cannot deny* any attribute. In (VII), determination of existence or action defines freedom, that is, something is free if it can be *determined* that it is not caused by something else.³⁶ In (VIII), finally,

existence must again be *conceived* to necessarily follow from the definition of eternity, in order to be eternity.—As we see, the mind *conceives* what things are. The mind has made up its mind, so to speak, and decided which entities to talk about, according to its conceptions.

The exploratory subjectivity has been replaced by an expository subjectivity, and the inquiry into what exists yields to a list of concepts of *how* things exist—as substance, as attribute, as mode, as necessary or as free, as eternal or as temporal. *The world is seen from outside*, not from within, so the first person pronoun and the voice that it signs no longer refers or belongs to a person; “I” instead refers to a voice from eternity; in the following Axioms, first-personality disappears altogether:

AXIOMS.

- I. Everything which exists, exists either in itself or in something else.
- II. That which cannot be conceived through anything else must be conceived through itself.
- III. From a given definite cause an effect necessarily follows; and, on the other hand, if no definite cause be granted, it is impossible that an effect can follow.
- IV. The knowledge of an effect depends on and involves the knowledge of a cause.
- V. Things which have nothing in common cannot be understood, the one by means of the other; the conception of one does not involve the conception of the other.
- VI. A true idea must correspond with its ideate or object.
- VII. If a thing can be conceived as non-existing, its essence does not involve existence.

Again, the focus is on *conception*; there is a logic of conceivings and understandings which decides the truth value of ideas, and—by Axiom VI, which is not a definition of “truth” but an information about true ideas—the “ideate or object” will conform, that is, correspond to the idea. The choice of these axiomatic statements is enigmatic; are they chosen for their self-evidence or are they just a minimal set of arbitrary rules of the play that is going to unfold? Where do they come from? Did the author find or elaborate them by a particular method? The text does not let us know.

Here are the 36 propositions of part I, without proofs and commentary, except in one irresistible case:

- PROP. I. Substance is by nature prior to its modifications.
- PROP. II. Two substances, whose attributes are different, have nothing in common.
- PROP. III. Things which have nothing in common cannot be one the cause of the other.
- PROP. IV. Two or more distinct things are distinguished one from the other, either by the difference of the attributes of the substances, or by the difference of their modifications.

PROP. V. There cannot exist in the universe two or more substances having the same nature or attribute.

PROP. VI. One substance cannot be produced by another substance.

PROP. VII. Existence belongs to the nature of substances.

PROP. VIII. Every substance is necessarily infinite.

PROP. IX. The more reality or being a thing has, the greater the number of its attributes (Def. iv.).

PROP. X. Each particular attribute of the one substance must be conceived through itself.

PROP. XI. God, or substance, consisting of infinite attributes, of which each expresses eternal and infinite essentiality, necessarily exists.

PROP. XII. No attribute of substance can be conceived from which it would follow that substance can be divided.

PROP. XIII. Substance absolutely infinite is indivisible.

PROP. XIV. Besides God no substance can be granted or conceived.

PROP. XV. Whatsoever is, is in God, and without God nothing can be, or be conceived.

PROP. XVI. From the necessity of the divine nature must follow an infinite number of things in infinite ways—that is, all things which can fall within the sphere of infinite intellect.

PROP. XVII. God acts solely by the laws of his own nature, and is not constrained by anyone.

PROP. XVIII. God is the indwelling [*causa immanens*]³⁷ and not the transient cause of all things.

PROP. XIX. God, and all the attributes of God, are eternal.

PROP. XX. The existence of God and his essence are one and the same.

PROP. XXI. All things which follow from the absolute nature of any attribute of God must always exist and be infinite, or, in other words, are eternal and infinite through the said attribute.

PROP. XXII. Whatsoever follows from any attribute of God, in so far as it is modified by a modification, which exists necessarily and as infinite, through the said attribute, must also exist necessarily and as infinite.

PROP. XXIII. Every mode, which exists both necessarily and as infinite, must necessarily follow either from the absolute nature of some attribute of God, or from an attribute modified by a modification which exists necessarily, and as infinite.

PROP. XXIV. The essence of things produced by God does not involve existence.

PROP. XXV. God is the efficient cause not only of the existence of things, but also of their essence.

PROP. XXVI. A thing which is conditioned to act in a particular manner, has necessarily been thus conditioned by God; and that which has not been conditioned by God cannot condition itself to act.

PROP. XXVII. A thing, which has been conditioned by God to act in a particular way, cannot render itself unconditioned.

PROP. XXVIII. Every individual thing, or everything which is finite and has a conditioned existence, cannot exist or be conditioned to act, unless it be conditioned for existence and action by a cause other than itself, which also is finite, and has a conditioned existence; and likewise this cause cannot in its turn exist, or be conditioned to act, unless it be conditioned for existence and action by another cause, which also is finite, and has a conditioned existence, and so on to infinity.

PROP. XXIX. Nothing in the universe is contingent, but all things are conditioned to exist and operate in a particular manner by the necessity of the divine nature.

PROP. XXX. Intellect, in function (actu) finite, or in function infinite, must comprehend the attributes of God and the modifications of God, and nothing else.³⁸

PROP. XXXI. The intellect in function, whether finite or infinite, as will, desire, love, &c., should be referred to passive nature and not to active nature.

PROP. XXXII. Will cannot be called a free cause, but only a necessary cause.

PROP. XXXIII. Things could not have been brought into being by God in any manner or in any order different from that which has in fact obtained.

PROP. XXXIV. God's power is identical with his essence.

PROP. XXXV. Whatsoever we conceive to be in the power of God, necessarily exists.

PROP. XXXVI. There is no cause from whose nature some effect does not follow.

What do we now know about God? It is an existing being, which is a substance, namely the only substance that exists. He has power and acts according to his laws. His acts condition all things to be and behave as they do, and everything is or happens by divine necessity. Only God has free will. All ideas are God's ideas. God causes the essence and existence of everything; in God, essence includes existence, whereas in other things, essence does not involve existence. (What 'essence' is, in this doctrine, is not explained.) If we *conceive* something to be in the power of God, that thing exists necessarily. Nothing exists only possibly. Possibility is imagination or fiction.

In the *Tractatus de Intellectus Emendatione*, which is more fluidly formulated, we find an interesting passage on this question (in Elwes' translation):

[52] Every perception has for its object either a thing considered as existing, or solely the essence of a thing. Now "fiction" is chiefly occupied with things considered as existing. I will, therefore, consider these first—I mean cases where only the existence of an object is feigned, and the thing thus feigned is understood, or assumed to be understood. For instance, I feign that Peter, whom I know to have gone home, is gone to see me, or something of that kind. With what is such an idea concerned? It is concerned with things *possible*, and not with things *necessary* or *impossible*.

[53] I call a thing *impossible* when its existence would imply a contradiction; *necessary*, when its non-existence would imply a contradiction; *possible*, when neither its existence nor its non-existence imply a contradiction, but when the *necessity* or *impossibility* of its nature depends on causes unknown to us, while we feign that it exists. If the *necessity* or *impossibility* of its existence depending on external causes were known to us, we could not form any fictitious hypotheses about it;

[54] Whence it follows that if there be a God, or omniscient Being, such a one cannot form fictitious hypotheses. For, as regards ourselves, when I know that I exist, I cannot hypothesize that I exist or do not exist, any more than I can hypothesize an elephant that can go through the eye of a needle; nor when I know the nature of God, can I hypothesize that He exists or does not exist. The same thing must be said of the Chimæra, whereof the nature implies a contradiction. From these considerations, it is plain, as I have already stated, that fiction cannot be concerned with eternal truths. (*Italics mine*)

Spinoza's understanding of modality is exclusively epistemic; possibility is ruled out on

the grounds that it must be based on ignorance of the causes that make the state of affairs in question necessary or impossible, and that it nevertheless is imagined as if it were existing, that is, it is a fiction. Since God does not do fiction, neither should we. Radical determinism follows from this argument. How could Descartes' God not arrive at the same result?

There is a straight answer to this question. If modality had been taken in the "root" sense of Sweetser (1990)³⁹, namely as a matter of material, physical circumstances and the dynamics of physical forces, and not as a matter of arguments and counter-arguments and the dynamics of these mental "forces", it would have been easy to show that there can be clear and distinct knowledge of possible states of affairs, not based on ignorance: *potentiality* would be a state of the material situation in question. But then that knowledge would have to possess its own epistemic modality—typically as possible knowledge—, which means that we would operate in two substances, mind and matter, each with its dynamics. This is what Descartes does. In the Spinozan context, however, a material state of affairs is by definition also an epistemic state of affairs; the knowledge of something *is in* this something and cannot be modalized independently. How things are "conceived" is how they are. Monism rules out potentiality.

The first part of the *Ethics* unfolds what corresponds to the vertical, constitutive axis of the ontological model proposed above (Fig. 1): the relation of God to Nature as a whole. Both Descartes and Spinoza distinguish God and Nature and let the former rule the latter. But in Descartes' thinking, God is not a material thing, and Nature is not a thinking thing; in Spinoza's version, God and Nature are both material *and* thinking, so the difference between them is not *substantial*, it is rather a difference between "determining" and "determined", active and passive, causing and caused—seen as the two main aspects of *Deus sive Natura*, the crucial immanent duality of his monism.

2.3 On the *Ethics* (second part): The mind

Now we would like to find out what happens to the horizontal axis of the ontological model; is there a phenomenology in Spinoza's epistemology? The second part of the *Ethics* is called *De natura et origine mentis*, On the Nature and Origin of the Mind.

This part is a little more complicated than the first, as to its composition. Still, it again begins with a list of Définitions:

- I. By *body* I mean a mode which expresses in a certain determinate manner the essence of God, in so far as he is considered as an extended thing.
- II. I consider as belonging to the *essence* of a thing that, which being given, the thing is necessarily given also, and, which being removed, the thing is necessarily removed also; in other words, that without which the thing, and which itself without the thing, can neither be nor be conceived.
- III. By *idea*, I mean the mental conception (*mentis conceptum*) which is formed by the mind as a thinking thing (*quod res est cogitans*).

Explanation: I say conception rather than perception, because the word perception seems to imply that the mind is passive in respect to the object; whereas conception seems to express an activity of the mind.

IV. By an *adequate* idea, I mean an idea which, in so far as it is considered in itself, without relation to the object, has all the properties or intrinsic marks of a true idea. Explanation: I say intrinsic, in order to exclude that mark which is extrinsic, namely, the agreement between the idea and its object (ideatum).

V. *Duration* is the indefinite continuance of existing.

Explanation: I say indefinite, because it cannot be determined through the existence itself of the existing thing, or by its efficient cause, which necessarily gives the existence of the thing, but does not take it away.

VI. *Reality* and *perfection* I use as synonymous terms.

VII. By *particular* things, I mean things which are finite and have a conditioned existence; but if several individual things concur in one action, so as to be all simultaneously the effect of one cause, I consider them all, so far, as one particular thing. (Italics mine)

Definitions III and IV present ideas as concepts formed by the active mind, some of which are *adequate*, namely those that carry marks of being true intrinsically and not by relations of correspondence to what the idea is about (*convenientiam ideae cum suo ideato*). What could these marks of adequacy be? The truth of adequate ideas appear to be determined by the internal order of ideas, their intrinsic logical status.

The notion of “essence”, in definitions I and II, is illustrated by the first of the Axioms, where it clearly means *category*:

AXIOMS

I. The essence of man does not involve necessary existence, that is, it may, in the order of nature, come to pass that this or that man does or does not exist.⁴⁰

II. Man thinks.

III. Modes of thinking such as love, desire, or any other of the passions, do not take place, unless there be in the same individual an idea of the thing loved, desired, &c. But the idea can exist without the presence of any other mode of thinking.

IV. We perceive that a certain body is affected in many ways.

V. We feel and perceive no particular things, save bodies and modes of thought (*corpora et cogitandi modos*).

It is far from clear where these unconnected statements are going. Maybe the incoherence of the sequence of sentences is even the point: to shake off impatient readers. We will hang on. So now to the cascade of Propositions and explanations of Part II, *On the Nature and origin of the Mind*:⁴¹

PROP. I. Thought is an attribute of God, or God is a thinking thing. ...

Note: This proposition is also evident from the fact, that we are able to conceive an infinite thinking being. For, in proportion as a thinking being is conceived as thinking more thoughts, so is it conceived as containing more reality or perfection. Therefore a being, which can think an infinite number of things in an infinite number of ways, is, necessarily, in respect of thinking, infinite. As, therefore, from the consideration of thought alone, we conceive an infinite being, thought is necessarily [...] one of the infinite attributes of God, as we were desirous of showing.

PROP. II. Extension is an attribute of God, or God is an extended thing. ...

Me: So God is both *res cogitans* and *res extensa*. The duality of substance stems from God, whose parts are the things in the world.

PROP. III. In God there is necessarily the idea not only of his essence, but also of all things which necessarily follow from his essence. ...

Note: The multitude understand by the power of God the free will of God, and the right over all things that exist, which latter are accordingly generally considered as contingent. For it is said that God has the power to destroy all things, and to reduce them to nothing. Further, the power of God is very often likened to the power of kings. But this doctrine we have refuted [...] and we have shown [...] that God acts by the same necessity, as that by which he understands himself; in other words, as it follows from the necessity of the divine nature (as all admit), that God understands himself, so also does it follow by the same necessity, that God performs infinite acts in infinite ways. We further showed [...] that God's power is identical with God's essence in action; therefore it is as impossible for us to conceive God as not acting, as to conceive him as non-existent. If we might pursue the subject further, I could point out, that the power which is commonly attributed to God is not only human (as showing that God is conceived by the multitude as a man, or in the likeness of a man), but involves a negation of power. However, I am unwilling to go over the same ground so often. I would only beg the reader again and again, to turn over frequently in his mind what I have said in Part I from Prop. xvi. to the end. No one will be able to follow my meaning, unless he is scrupulously careful not to confound the power of God with the human power and right of kings.

PROP. IV. The idea of God, from which an infinite number of things follow in infinite ways, can only be one. ...

PROP. V. The actual being of ideas owns God as its cause, only in so far as he is considered as a thinking thing, not in so far as he is unfolded in any other attribute; that is, the ideas both of the attributes of God and of particular things do not own as their efficient cause their objects (*ideata*) or the things perceived, but God himself in so far as he is a thinking thing. ...

Me: So all our ideas are caused by God and not by what they are about. I am eager to see

how that works.

PROP. VI. The modes of any given attribute are caused by God, in so far as he is considered through the attribute of which they are modes, and not in so far as he is considered through any other attribute. ...

PROP. VII. The order and connection of ideas is the same as the order and connection of things. ...

Note: Before going any further, I wish to recall to mind what has been pointed out above—namely, that whatsoever can be perceived by the infinite intellect as constituting the essence of substance, belongs altogether only to one substance: consequently, substance thinking and substance extended are one and the same substance, comprehended now through one attribute, now through the other. So, also, a mode of extension and the idea of that mode are one and the same thing, though expressed in two ways. *This truth seems to have been dimly recognized by those Jews who maintained that God, God's intellect, and the things understood by God are identical. [Italics mine].* For instance, a circle existing in nature, and the idea of a circle existing, which is also in God, are one and the same thing displayed through different attributes. Thus, whether we conceive nature under the attribute of extension, or under the attribute of thought, or under any other attribute, we shall find the same order, or one and the same chain of causes—that is, the same things following in either case. I said that God is the cause of an idea—for instance, of the idea of a circle,—in so far as he is a thinking thing; and of a circle, in so far as he is an extended thing, simply because the actual being of the idea of a circle can only be perceived as a proximate cause through another mode of thinking, and that again through another, and so on to infinity; so that, so long as we consider things as modes of thinking, we must explain the order of the whole of nature, or the whole chain of causes, through the attribute of thought only. And, in so far as we consider things as modes of extension, we must explain the order of the whole of nature through the attributes of extension only; and so on, in the case of the other attributes. Wherefore of things as they are in themselves God is really the cause, inasmuch as he consists of infinite attributes. I cannot for the present explain my meaning more clearly.

Me: Well, I will have to work with that then, since you say these are your last words on the subject. So you insist that substance, whether “we consider it as” consisting of thinking or of extended matter, is the same one substance, just comprehended in two ways. We see it in two ways, but it IS one; what it really is, is not what we can comprehend but still it is so, seen from outside—not from our limited comprehension. You therefore need to prove it, since we and even you cannot comprehend it, right? — However, some Jews, you say (could you be referring to Maimonides' *Guide to the Perplexed*?) did understand the identity of God, God's thinking, and the objects of his thinking. Are you sure that a circle and the idea of a circle are the same thing? You would of course answer that this is the case in God's mind and God's body, but that's confusing;

my idea of a circle is definitely different from the circle itself, since Pi, for example, is a property of the circle that I only know superficially (3.1415927...). Descartes would not say that the circle is an extended thing, because it does not have a size; for him, geometry is a science of unextended things, about which you can have unextended ideas, some of which may be clearer and therefore better than others. To him, the being of a substance is not a question of what “we consider”, but of how things *can* be considered—the circle can not be considered to have a size, because it does not have one. We are unable to tell how ‘large’ it is.

PROP. IX. The idea of an individual thing actually existing is caused by God, not in so far as he is infinite, but in so far as he is considered as affected by another idea of a thing actually existing, of which he is the cause, in so far as he is affected by a third idea, and so on to infinity. ...

Corollary: Whatsoever takes place in the individual object of any idea, the knowledge thereof is in God, in so far only as he has the idea of the object.

Me: And by “the object of an idea” you mean 1) the thing that the idea is about, and also 2) the thing in which this idea exists. So “the idea of the object” means this idea *of* the object, *in* the object. This is, if I am right, a core trick of your entire thinking.

PROP. X. The being of substance does not appertain to the essence of man—in other words, substance does not constitute the actual being of man. ...

Corollary: Hence it follows, that the essence of man is constituted by certain modifications of the attributes of God. For (by the last Prop.) the being of substance does not belong to the essence of man. That essence therefore (by i. 15) is something which is in God, and which without God can neither be nor be conceived, whether it be a modification [...], or a mode which expresses God’s nature in a certain conditioned manner. [*A long note follows*].

PROP. XI. The first element, which constitutes the actual being of the human mind, is the idea of some particular thing actually existing. ...

Corollary: Hence it follows, that the human mind is part of the infinite intellect of God; thus when we say, that the human mind perceives this or that, we make the assertion, that God has this or that idea, not in so far as he is infinite, but in so far as he is displayed through the nature of the human mind, or in so far as he constitutes the essence of the human mind; and when we say that God has this or that idea, not only in so far as he constitutes the essence of the human mind, but also in so far as he, simultaneously with the human mind, has the further idea of another thing, we assert that the human mind perceives a thing in part or inadequately.

Note: Here, I doubt not, readers will come to a stand, and will call to mind many things which will cause them to hesitate; I therefore beg them to accompany me slowly, step by step, and not to pronounce on my statements, till they have read to the end.

Me: I cannot promise that I will keep quiet for that long... So when I think of something in particular, because I perceive it, God thinks of that particular thing. God must therefore think of two things, my mind and the thing in question. He thinks only partially of the thing, so my perception must be partial and “inadequate” (not capable of reaching truth). Perception dismissed. Scepticism of sense-based experience, “imagination”.

PROP. XII. Whatsoever comes to pass in the object of the idea which constitutes the human mind, must be perceived by the human mind, or there will necessarily be an idea in the human mind of the said occurrence. That is, if the object of the idea constituting the human mind be a body, nothing can take place in that body without being perceived by the mind. ...

Me: So you say that what happens in what my idea is about must happen in my idea of it. If I am thinking of a body, the content of my thought shows me exactly what is going on in that body? But the only object of my mind is my own body, since bodies have mind, and this is why I have a mind at all. So everything I am thinking of shows me exactly what is going on in my body, and that is even all my thinking tells me?

PROP. XIII. *The object of the idea constituting the human mind is the body*, in other words a certain mode of extension which actually exists, and nothing else. ...

Note: We thus comprehend, not only that the human mind is united to the body, but also the nature of the union between mind and body. However, no one will be able to grasp this adequately or distinctly, unless he first has adequate knowledge of the nature of our body. The propositions we have advanced hitherto have been entirely general, applying not more to men than to other individual things, all of which, though in different degrees, are animated. For of everything there is necessarily an idea in God, of which God is the cause, in the same way as there is an idea of the human body; thus whatever we have asserted of the idea of the human body must necessarily also be asserted of the idea of everything else. Still, on the other hand, we cannot deny that ideas, like objects, differ one from the other, one being more excellent than another and containing more reality, just as the object of one idea is more excellent than the object of another idea, and contains more reality. Wherefore, in order to determine, wherein the human mind differs from other things, and wherein it surpasses them, it is necessary for us to know the nature of its object, that is, of the human body. What this nature is, I am not able here to explain, nor is it necessary for the proof of what I advance, that I should do so. I will only say generally, that in proportion as any given body is more fitted than others for doing many actions or receiving many impressions at once, so also is the mind, of which it is the object, more fitted than others for forming many simultaneous perceptions; and the more the actions of the body depend on itself alone, and the fewer other bodies concur with it in action, the more fitted is the mind of which it is the object for distinct comprehension. We may thus recognize the superiority of one mind over others, and may further see the cause, why we have only a very confused knowledge of our body, and also many kindred questions, which I will, in the following propositions, deduce from what has been advanced. Wherefore I have thought it

worth while to explain and prove more strictly my present statements. In order to do so, I must premise a few propositions concerning the nature of bodies.

[Followed by 3 Axioms, 7 Lemmas, and 6 Postulates on moving bodies influencing other bodies.]

Me: The object of the mind is the body; the object of my mind is my body! The body receives impressions, and they become the ideas of the mind. The quality of my body determines the quality of my thoughts. The anatomy of my body coincides with that of my thinking, is that so?

PROP. XIV. The human mind is capable of perceiving a great number of things, and is so in proportion as its body is capable of receiving a great number of impressions.

Proof: The human body (by Post. iii. and vi.) is affected in very many ways by external bodies, and is capable in very many ways of affecting external bodies. But (II. xii.) the human mind must perceive all that takes place in the human body; the human mind is, therefore, capable of perceiving a great number of things, and is so in proportion, &c. Q.E.D.

PROP. XV. The idea which constitutes the actual being of the human mind is not simple, but compounded of a great number of ideas.

Proof: The idea constituting the actual being of the human mind is the idea of the body (II. xiii.), which (Post. i.) is composed of a great number of complex individual parts. But there is necessarily in God the idea of each individual part whereof the body is composed (II. viii. Coroll.) ; therefore (II. vii.), the idea of the human body is composed of these numerous ideas of its component parts. Q.E.D.

PROP. XVI. The idea of every mode in which the human body is affected by external bodies, must involve the nature of the human body, and also the nature of the external body.

Proof: All the modes, in which any given body is affected, follow from the nature of the body affected, and also from the nature of the affecting body (by Ax. i., after the Coroll. of Lemma iii.), wherefore their idea also necessarily (by I. Ax. iv.) involves the nature of both bodies; therefore, the idea of every mode in which the human body is affected by external bodies, involves the nature of the human body and of the external body. Q.E.D.

Corollary I.: Hence it follows, first, that the human mind perceives the nature of a variety of bodies, together with the nature of its own.

Corollary II.: It follows, secondly, that the ideas which we have of external bodies indicate rather the constitution of our own body than the nature of external bodies. ...

Me: I see—the mind perceives “its” body, for example mine, and the body perceives itself plus some other, external bodies that affect it, and their ideas pass through my body and into my mind, joining the idea of my own body. Is that it? Since my body has received the imprint of the external bodies, it keeps these received ideas also, so I can not only perceive

them but also remember them? This story reminds me strongly of something we now, more than two centuries after your death, call *the embodied mind*. I am sure you would be delighted to hear about that; let your immortal spirit go to Berkeley, California, from time to time and listen to a friend of mine named George Lakoff. He will be happy to meet you.

PROP. XVII. If the human body is affected in a manner which involves the nature of any external body, the human mind will regard the said external body as actually existing, or as present to itself, until the human body be affected in such a way, as to exclude the existence or the presence of the said external body.

Corollary: The mind is able to regard as present external bodies by which the human body has once been affected, even though they be no longer in existence or present.

Note: We thus see how it comes about, as is often the case, that we regard as present many things which are not. It is possible that the same result may be brought about by other causes; but I think it suffices for me here to have indicated one possible explanation, just as well as if I had pointed out the true cause. Indeed, I do not think I am very far from the truth, for all my assumptions are based on postulates which rest, almost without exception, on experience that cannot be controverted by those who have shown, as we have, that the human body, as we feel it, exists (Coroll. after II. xiii.). Furthermore [...] we clearly understand what is the difference between the idea, say, of Peter, which constitutes the essence of Peter's mind, and the idea of the said Peter which is in another man, say, Paul. The former directly answers to the essence of Peter's own body, and only implies existence so long as Peter exists; the latter indicates rather the disposition of Paul's body than the nature of Peter, and, therefore, while this disposition of Paul's body lasts, Paul's mind will regard Peter as present to itself, even though he no longer exists. Further, to retain the usual phraseology, the modifications of the human body of which the ideas represent external bodies as present to us we will call the images of things, though they do not recall the figure of things. When the mind regards bodies in this fashion, we say that it *imagines*. I will here draw attention to the fact, in order to indicate where error lies, that the *imaginings* of the mind, looked at in themselves, do not contain error. The mind does not err in the mere act of imagining, but only in so far as it is regarded as being without the idea which excludes the existence of such things as it imagines to be present to it. If the mind, while imagining non-existent things as present to it, is at the same time conscious that they do not really exist, this power of imagination must be set down to the efficacy of its nature, and not to a fault, especially if this faculty of imagination depend solely on its own nature—that is (I. Def. vii.), if this faculty of imagination be free.

PROP. XVIII. If the human body has once been affected by two or more bodies at the same time, when the mind afterwards imagines any of them, it will straightway remember the others also.

Proof: The mind (II. xvii. Coroll.) imagines any given body, because the human body is affected and disposed by the impressions from an external body, in the same manner as it is affected when certain of its parts are acted on by the said external body; but (by our hypothesis) the

body was then so disposed, that the mind imagined two bodies at once; therefore, it will also in the second case imagine two bodies at once, and the mind, when it imagines one, will straightway remember the other. Q.E.D.

Note: We now clearly see what Memory is. It is simply a certain association of ideas involving the nature of things outside the human body which association arouses in the mind according to the order and association of the modifications [*affectiones*] of the human body. I say, first, it is an association of those ideas only which involve the nature of things outside the human body: not of ideas which answer to the nature of the said things: ideas of the modifications of the human body are, strictly speaking (II. xvi.), those which involve the nature both of the human body and of external bodies. I say, secondly, that this association arises according to the order and association of the modifications of the human body, in order to distinguish it from that association of ideas which arises from the order of the intellect, whereby the mind perceives things through their primary causes, and which is in all men the same. And hence we can further clearly understand why the mind from the thought of one thing, should straightway arrive at the thought of another thing which has no similarity with the first; for instance, from the thought of the word pomum (an apple), a Roman would straightway arrive at the thought of the fruit apple, which has no similitude with the articulate sound in question, nor anything in common with it, except that the body of the man has often been affected by these two things; that is, that the man has often heard the word pomum, while he was looking at the fruit ; similarly every man will go on from one thought to another, according as his habit has ordered the images of things in his body. For a soldier, for instance, when he sees the tracks of a horse in sand, will at once pass from the thought of a horse to the thought of a horseman, and thence to the thought of war, &c.; while a countryman will proceed from the thought of a horse to the thought of a plough, a field, &c. Thus every man will follow this or that train of thought, according as he has been in the habit of conjoining and associating the mental images of things in this or that manner.

Me: That's your linguistics and your semiotics already. We remember associations due to the perception of things that occur together. That's all.

PROP. XXI. This idea of the mind is united to the mind in the same way as the mind is united to the body.

Proof: That the mind is united to the body we have shown from the fact, that the body is the object of the mind (II. xii. and xiii.); and so for the same reason the idea of the mind must be united with its object, that is, with the mind in the same manner as the mind is united to the body.

Note: This proposition is comprehended much more clearly from what we have said in the note to II. vii. We there showed that the idea of body and body, that is, mind and body (II. xiii.), are one and the same individual conceived now under the attribute of thought, now under the attribute of extension; wherefore the idea of the mind and the mind itself are one and the same thing which is conceived under one and the same attribute, namely, thought. The idea of the mind, I repeat, and the mind itself are in God by the same necessity and follow from the same power of thinking. Strictly speaking, the idea of the mind, that is, the idea of an idea, is

nothing but the distinctive quality (*forma*) of the idea in so far as it is conceived as a mode of thought without reference to the object; if a man knows anything, he, by that very fact, knows that he knows it, and at the same time knows that he knows that he knows it, and so on to infinity. ...

Me: I can see why you say that, but it still does not make sense in any other way. Maybe because you again insist on not distinguishing between what is going on and what is “conceived as” going on. It makes the whole thing sound either scholastic or mystical. By contrast, I can easily see that we can think of an idea without reference to its object; that is what I am trying to do with your idea right now, to grasp it in order to follow it and find out how it works, that is, just to make sense of it.

PROP. XXII. The human mind perceives not only the modifications [*affectiones*] of the body, but also the ideas of such modifications.

Proof: The ideas of the ideas of modifications follow in God in the same manner, and are referred to God in the same manner, as the ideas of the said modifications. This is proved in the same way as II. xx. But the ideas of the modifications of the body are in the human mind (II. xii.), that is, in God, in so far as he constitutes the essence of the human mind; therefore the ideas of these ideas will be in God, in so far as he has the knowledge or idea of the human mind, that is (II. xxi.), they will be in the human mind itself, which therefore perceives not only the modifications of the body, but also the ideas of such modifications. Q.E.D.

PROP. XXIII. The mind does not know itself, except in so far as it perceives the ideas of the modifications of the body. ...

PROP. XXIV. The human mind does not involve an adequate knowledge of the parts composing the human body. ...

PROP. XXV. The idea of each modification of the human body does not involve an adequate knowledge of the external body.

Proof: We have shown that the idea of a modification of the human body involves the nature of an external body, in so far as that external body conditions the human body in a given manner. But, in so far as the external body is an individual, which has no reference to the human body, the knowledge or idea thereof is in God (II. ix.), in so far as God is regarded as affected by the idea of a further thing, which (II. vii.) is naturally prior to the said external body. Wherefore an adequate knowledge of the external body is not in God, in so far as he has the idea of the modification of the human body; in other words, the idea of the modification of the human body does not involve an adequate knowledge of the external body. Q.E.D.

Me: So I may get certain impressions of the external object, but they will not be “adequate knowledge”—I will perceive that there is something out there, but I will not know what it is.

PROP. XXVI. The human mind does not perceive any external body as actually existing, except through the ideas of the modifications of its own body.

Proof: If the human body is in no way affected by a given external body, then (II. vii.) neither is the idea of the human body, in other words, the human mind, affected in any way by the idea of the existence of the said external body, nor does it in any manner perceive its existence. But, in so far as the human body is affected in any way by a given external body, thus far (II. xvi. And Coroll.) it perceives that external body. Q.E.D.

Corollary: In so far as the human mind imagines an external body, it has not an adequate knowledge thereof.

Proof: When the human mind regards external bodies through the ideas of the modifications of its own body, we say that it imagines (see II. xvii. note) ; now the mind can only imagine external bodies as actually existing. Therefore (by II. xxv.), in so far as the mind imagines external bodies, it has not an adequate knowledge of them. Q.E.D.

PROP. XXVII. The idea of each modification of the human body does not involve an adequate knowledge of the human body itself. ...

PROP. XXVIII. The ideas of the modifications of the human body, in so far as they have reference only to the human mind, are not clear and distinct, but confused. ...

PROP. XXIX. The idea of the idea of each modification of the human body does not involve an adequate knowledge of the human mind. ...

Note: I say expressly, that the mind has not an adequate but only a confused knowledge of itself, its own body, and of external bodies, whenever it perceives things after the common order of nature; that is, whenever it is determined from without, namely, by the fortuitous play of circumstance, to regard this or that; not at such times as it is determined from within, that is, by the fact of regarding several things at once, to understand their points of agreement, difference, and contrast. Whenever it is determined in any wise from within, it regards things clearly and distinctly, as I will show below.

PROP. XXX. We can only have a very inadequate knowledge of the duration of our body. ...

PROP. XXXI. We can only have a very inadequate knowledge of the duration of particular things external to ourselves. ...

Corollary: Hence it follows that all particular things are contingent and perishable. For we can have no adequate idea of their duration (by the last Prop.), and this is what we must understand by the contingency and perishableness of things. (I. xxxiii., Note i.) For (I. xxix.), except in this sense, nothing is contingent. [*Necessitarianism excludes contingency*].

PROP. XXXII. All ideas, in so far as they are referred to God, are true. [Omnes ideae, quatenus ad Deum referuntur, verae sunt.]

Proof: All ideas which are in God agree in every respect with their objects (II. vii. Coroll.), therefore (I. Ax. vi.) they are all true. Q.E.D.

Me: My own ideas get their truth, or adequacy, from the internal *coherence* that God gives them, whereas in God, these same ideas get their truth from correspondence with reality. Both epistemological principles, coherence and *correspondence*, are thus in use here.

PROP. XXXIII. There is nothing positive in ideas, which causes them to be called false.

Proof: If this be denied, conceive, if possible, a positive mode of thinking, which should constitute the distinctive quality of falsehood. Such a mode of thinking cannot be in God (II. xxxii.); external to God it cannot be or be conceived (I. xv.). Therefore there is nothing positive in ideas which causes them to be called false. Q.E.D.

PROP. XXXIV. Every idea which in us is absolute or adequate and perfect, is true.

Proof: When we say that an idea in us is adequate and perfect, we say, in other words (II. xi. Coroll.), that the idea is adequate and perfect in God, in so far as he constitutes the essence of our mind; consequently (II. xxxii.), we say that such an idea is true. Q.E.D.

PROP. XXXV. Falsity consists in the privation of knowledge, which inadequate, fragmentary, or confused ideas involve.

Proof: There is nothing positive in ideas which causes them to be called false (II. xxxiii.); but falsity cannot consist in simple privation (for minds, not bodies, are said to err and to be mistaken), neither can it consist in absolute ignorance, for ignorance and error are not identical; wherefore it consists in the privation of knowledge, which inadequate, fragmentary, or confused ideas involve. Q.E.D.

Note: In the note to II. xvii, I explained how error consists in the privation of knowledge, but in order to throw more light on the subject I will give an example. For instance, men are mistaken in thinking themselves free; their opinion is made up of consciousness of their own actions, and ignorance of the causes by which they are conditioned. Their idea of *freedom*, therefore, is simply their ignorance of any cause for their actions. As for their saying that human actions depend on the *will*, this is a mere phrase without any idea to correspond thereto. What the will is, and how it moves the body, they none of them know; those who boast of such knowledge, and feign dwellings and habitations for the soul, are wont to provoke either laughter or disgust. So, again, when we look at the sun, we imagine that it is distant from us about two hundred feet; this error does not lie solely in this fancy, but in the fact that, while we thus imagine, we do not know the sun's true distance or the cause of the fancy. For although we afterwards learn, that the sun is distant from us more than six hundred of the earth's diameters, we none the less shall fancy it to be near; for we do not imagine the sun as near us, because we are ignorant of its true distance, but because the modification of our body involves the essence of the sun, in so far as our said body is affected thereby.

Me: Falsity does not exist, you say, since bodies cannot be “wrong”. By the way, your sun example is from Descartes.⁴² His Fourth Meditation has, as you know, the discussion on the role of free will that you reject.

PROP. XXXVI. Inadequate and confused ideas follow by the same necessity as adequate or clear and distinct ideas.

Proof: All ideas are in God (I. xv.), and in so far as they are referred to God are true (II. xxxii.) and (II. vii. Coroll.) adequate; therefore there are no ideas confused or inadequate, except in respect to a particular mind (cf. II. xxiv. and xxviii.); therefore all ideas, whether adequate or inadequate, follow by the same necessity (II. vi.). Q.E.D.

PROP. XXXVII. That which is common to all (cf. Lemma II., above), and which is equally in a part and in the whole, does not constitute the essence of any particular thing. ...

PROP. XXXVIII. Those things which are common to all, and which are equally in a part and in the whole, cannot be conceived except adequately.

Proof: Let A be something which is common to all bodies, and which is equally present in the part of any given body and in the whole. I say A cannot be conceived except adequately. For the idea thereof in God will necessarily be adequate (II. vii. Coroll.), both in so far as God has the idea of the human body, and also in so far as he has the idea of the modifications of the human body, which (II. xvi., xxv., xxvii.) involve in part the nature of the human body and the nature of external bodies; that is (II. xii., xiii.), the idea in God will necessarily be adequate, both in so far as he constitutes the human mind, and in so far as he has the ideas which are in the human mind. Therefore the mind (II. xi. Coroll.) necessarily perceives A adequately, and has this adequate perception, both in so far as it perceives itself, and in so far as it perceives its own or any external body, nor can A be conceived in any other manner. Q.E.D.

Corollary: Hence it follows that there are certain ideas or notions common to all men; for (by Lemma ii.) all bodies agree in certain respects, which (by the foregoing Prop.) must be adequately or clearly and distinctly perceived by all.

PROP. XXXIX. That which is common to and a property of the human body and such other bodies as are wont to affect the human body, and which is present equally in each part of either, or in the whole, will be represented by an adequate idea in the mind. ...

Corollary: Hence it follows that the mind is fitted to perceive adequately more things, in proportion as its body has more in common with other bodies.

PROP. XL. Whatsoever ideas in the mind follow from ideas which are therein adequate, are also themselves adequate.

Proof: This proposition is self-evident. For when we say that an idea in the human mind follows from ideas which are therein adequate, we say, in other words (II. xi. Coroll.), that an idea is in the divine intellect, whereof God is the cause, not in so far as he is infinite, nor

in so far as he is affected by the ideas of very many particular things, but only in so far as he constitutes the essence of the human mind.

Note I.: I have thus set forth the cause of those notions which are common to all men, and which form the basis of our ratiocination. But there are other causes of certain axioms or notions, which it would be to the purpose to set forth by this method of ours; for it would thus appear what notions are more useful than others, and what notions have scarcely any use at all. Furthermore, we should see what notions are common to all men, and what notions are only clear and distinct to those who are unshackled by prejudice, and we should detect those which are ill-founded. Again we should discern whence the notions called secondary derived their origin, and consequently the axioms on which they are founded, and other points of interest connected with these questions. But I have decided to pass over the subject here, partly because I have set it aside for another treatise, partly because I am afraid of wearying the reader by too great prolixity. Nevertheless, in order not to omit anything necessary to be known, I will briefly set down the causes whence are derived the terms styled *transcendental*, such as *Being*, *Thing*, *Something*. These terms arose from the fact, that the human body, being limited, is only capable of distinctly forming a certain number of images (what an image is I explained in the II. xvii. note) within itself at the same time; if this number be exceeded, the images will begin to be confused; if this number of images, of which the body is capable of forming distinctly within itself, be largely exceeded, all will become entirely confused one with another. This being so, it is evident (from II. Prop. xvii. Coroll., and xviii.) that the human mind can distinctly imagine as many things simultaneously, as its body can form images simultaneously. When the images become quite confused in the body, the mind also imagines all bodies confusedly without any distinction, and will comprehend them, as it were, under one attribute, namely, under the attribute of Being, Thing, &c. The same conclusion can be drawn from the fact that images are not always equally vivid, and from other analogous causes, which there is no need to explain here; for the purpose which we have in view it is sufficient for us to consider one only. All may be reduced to this, that these terms represent ideas in the highest degree confused. From similar causes arise those *notions*, which we call *general*, such as man, horse, dog, &c. They arise, to wit, from the fact that so many images, for instance, of men, are formed simultaneously in the human mind, that the powers of imagination break down, not indeed utterly, but to the extent of the mind losing count of small differences between individuals (e.g. colour, size, &c.) and their definite number, and only distinctly imagining that in which all the individuals, in so far as the body is affected by them, agree; for that is the point in which each of the said individuals chiefly affected the body; this the mind expresses by the name man, and this it predicates of an infinite number of particular individuals. For, as we have said, it is unable to imagine the definite number of individuals. We must, however, bear in mind, that these general notions are not formed by all men in the same way, but vary in each individual according as the point varies whereby the body has been most often affected and which the mind most easily imagines or remembers. For instance, those who have most often regarded with admiration the stature of man, will by the name of man understand an animal of erect stature; those who have been accustomed to regard some other attribute, will form a different general image of man, for

instance, that man is a laughing animal, a two-footed animal without feathers, a rational animal, and thus, in other cases, everyone will form general images of things according to the habit of his body. It is thus not to be wondered at, that among philosophers who seek to explain things in nature merely by the images formed of them, so many controversies should have arisen.

Me: So here is your theory of the formation of general notions; we now call them categories, and their formation, categorization. You say that we form such notions to avoid the breakdown of imagination from overload. The attributes (ex.: laughing animal) of each category (ex.: man) depends on personal experience. But the substantive part of the category—man, horse, dog...—seems more stable; in order to see a man as a laughing animal you would have to form the categories of “animal” and “laugh” also, and so forth, until everything is defined by everything else. The breakdown theory does not seem to work very well, does it? Wouldn’t it be better to call on God again?

Note II.: From all that has been said above it is clear, that we, in many cases, perceive and form our general notions: 1. From particular things represented to our intellect fragmentarily, confusedly, and without order through our senses (II. xxix. Coroll.); I have settled to call such perceptions by the name of knowledge from the mere suggestions of experience. 2. From symbols, e.g., from the fact of having read or heard certain words we remember things and form certain ideas concerning them, similar to those through which we imagine things (II. xviii. note). I shall call both these ways of regarding things knowledge of the first kind, opinion, or *imagination*. 3. From the fact that we have notions common to all men, and adequate ideas of the properties of things (II. xxxviii. Coroll., xxxix. and Coroll. And xl.); this I call *reason* and knowledge of the second kind. Besides these two kinds of knowledge [cognition(es)], there is, as I will hereafter show, a third kind of knowledge, which we will call *intuition* [*quod scientiam intuitivam explicabo*]. This kind of knowledge proceeds from an adequate idea of the absolute essence of certain attributes of God to the adequate knowledge of the essence of things. I will illustrate all three kinds of knowledge by a single example. Three numbers are given for finding a fourth, which shall be to the third as the second is to the first. Tradesmen without hesitation multiply the second by the third, and divide the product by the first; either because they have not forgotten the rule which they received from a master without any proof, or because they have often made trial of it with simple numbers, or by virtue of the proof of the nineteenth proposition of the seventh book of Euclid, namely, in virtue of the general property of proportionals. But with very simple numbers there is no need of this. For instance, one, two, three, being given, everyone can see that the fourth proportional is six; and this is much clearer, because we infer the fourth number from an intuitive grasping [uno intuitu] of the ratio which the first bears to the second.

Me: So you did have to call on God in order to obtain “adequate knowledge of the essence of things”. Why do you reject Descartes’ suggestion, namely that a systematic and rational study of external things can give rise to true knowledge—is it because you want absolute

truth about external things, a “science” that springs directly, intuitively, from God?

PROP. XLI. Knowledge of the first kind is the only source of falsity, knowledge of the second and third kinds is necessarily true. ...

PROP. XLII. Knowledge of the second and third kinds, not knowledge of the first kind, teaches us to distinguish the true from the false. ...

PROP. XLIII. He who has a true idea simultaneously knows that he has a true idea, and cannot doubt of the truth of the thing perceived.

Proof: A true idea in us is an idea which is adequate in God, in so far as he is displayed through the nature of the human mind (II. xi. Coroll.). Let us suppose that there is in God, in so far as he is displayed through the human mind, an adequate idea, A. The idea of this idea must also necessarily be in God, and be referred to him in the same way as the idea A (by II. xx., whereof the proof is of universal application). But the idea A is supposed to be referred to God, in so far as he is displayed through the human mind; therefore, the idea of the idea A must be referred to God in the same manner; that is (by II. xi. Coroll.), the adequate idea of the idea A will be in the mind which has the adequate idea A; therefore he who has an adequate idea or knows a thing truly (II. xxxiv.) must at the same time have an adequate idea or true knowledge of his knowledge; that is, obviously, he must be assured. Q.E.D.

Note: ... We may add that our mind, in so far as it perceives things truly, is part of the infinite intellect of God (II. xi. Coroll.); therefore, the clear and distinct ideas of the mind are as necessarily true as the ideas of God.

Me: Don't you find it just a little bit strange, or even arrogant, to say that if you perceive things truly, you are part of God's infinite intellect? I know you mean it, but still... Is that necessarily so?

PROP. XLIV. It is not in the nature of reason to regard things as contingent, but as necessary. ...

PROP. XLVI. The knowledge of the eternal and infinite essence of God which every idea involves is adequate and perfect. ...

PROP. XLVII. The human mind has an adequate knowledge of the eternal and infinite essence of God. ...

Note: Hence we see, that the infinite essence and the eternity of God are known to all. Now as all things are in God, and are conceived through God, we can from this knowledge infer many things, which we may adequately know, and we may form that third kind of knowledge of which we spoke in the note to II. xl., and of the excellence and use of which we shall have occasion to speak in Part V. Men have not so clear a knowledge of God as they have of general notions,

because they are unable to imagine God as they do bodies, and also because they have associated the name God with images of things that they are in the habit of seeing, as indeed they can hardly avoid doing, being, as they are, men, and continually affected by external bodies. Many errors, in truth, can be traced to this head, namely, that *we do not apply names to things rightly*. For instance, when a man says that the lines drawn from the centre of a circle to its circumference are not equal, he then, at all events, assuredly attaches a meaning to the word circle different from that assigned by mathematicians. So again, when men make mistakes in calculation, they have one set of figures in their mind, and another on the paper. If we could see into their minds, they do not make a mistake; they seem to do so, because we think, that they have the same numbers in their mind as they have on the paper. If this were not so, we should not believe them to be in error, any more than I thought that a man was in error, whom I lately heard exclaiming that his entrance hall had flown into a neighbour's hen, for his meaning seemed to me sufficiently clear. Very many controversies have arisen from the fact, that men do not rightly explain their meaning, or do not rightly interpret the meaning of others. For, as a matter of fact, as they flatly contradict themselves, they assume now one side, now another, of the argument, so as to oppose the opinions which they consider mistaken and absurd in their opponents.

Me: I think you are saying that our errors are due to our bad use of names, numbers, and syntax; that our minds do not make mistakes whereas our expressions do. Why would that be? Because certain expressive parts of our body are so “determined”?

PROP. XLVIII. In the mind there is no absolute or *free will*; but the mind is determined to wish this or that by a cause, which has also been determined by another cause, and this last by another cause, and so on to infinity. ...

PROP. XLIX. There is in the mind no *volition* or affirmation and negation, save that which an idea, inasmuch as it is an idea, involves. ...

Corollary: Will and understanding are one and the same.

Proof: Will and understanding are nothing beyond the individual volitions and ideas (II. xlviii. and note). But a particular volition and a particular idea are one and the same (by the foregoing Prop.); therefore, will and understanding are one and the same. Q.E.D. ...

Note: ... Those who think that ideas consist in images which are formed in us by contact with external bodies, persuade themselves that the ideas of those things whereof we can form no mental picture, are not ideas, but only figments, which we invent by the free decree of our will; they thus regard ideas as though they were inanimate pictures on a panel, and, filled with this misconception, do not see that an idea, inasmuch as it is an idea, involves an affirmation or negation. Again, those who confuse words with ideas, or with the affirmation which an idea involves, think that they can wish something contrary to what they feel, affirm, or deny. This misconception will easily be laid aside by one who reflects on the nature of knowledge, and seeing that it in no wise involves the conception of extension, will therefore clearly understand, that an idea (being a mode of thinking) does not consist in the image of anything,

nor in words. *The essence of words and images is put together by bodily motions, which in no wise involve the conception of thought.*

... It remains to point out the advantages of a knowledge of this doctrine as bearing on conduct, and this may be easily gathered from what has been said. The doctrine is good, 1. Inasmuch as it teaches us to act solely according to the decree of God, and to be partakers in the Divine nature, and so much the more, as we perform more perfect actions and more and more understand God. Such a doctrine not only completely tranquilizes our spirit, but also shows us where our highest happiness or blessedness is, namely, solely in the knowledge of God, whereby we are led to act only as love and piety shall bid us. We may thus clearly understand, how far astray from a true estimate of virtue are those who expect to be decorated by God with high rewards for their virtue, and their best actions, as for having endured the direst slavery; as if virtue and *the service of God* were not in itself happiness and perfect freedom. 2. Inasmuch as it teaches us, how we ought to conduct ourselves with respect to the gifts of fortune, or matters which are not in our power, and do not follow from our nature. For it shows us, that we should await and endure fortune's smiles or frowns with an equal mind, seeing that all things follow from the eternal decree of God by the same necessity, as it follows from the essence of a triangle, that the three angles are equal to two right angles. 3. This doctrine raises social life, inasmuch as it teaches us to hate no man, neither to despise, to deride, to envy, or to be angry with any. Further, as it tells us that each should be content with his own, and helpful to his neighbour, not from any womanish pity, favour, or superstition, but solely by the guidance of reason, according as the time and occasion demand, as I will show in Part III. 4. Lastly, this doctrine confers no small advantage on the commonwealth; for it teaches how citizens should be governed and led, not so as to become slaves, but so that they may freely do whatsoever things are best. I have thus fulfilled the promise made at the beginning of this note, and I thus bring the second part of my treatise to a close. I think I have therein explained the nature and properties of the human mind at sufficient length, and, considering the difficulty of the subject, with sufficient clearness. I have laid a foundation, whereon may be raised many excellent conclusions of the highest utility and most necessary to be known, as will, in what follows, be partly made plain."⁴³ [*End of Part II*].

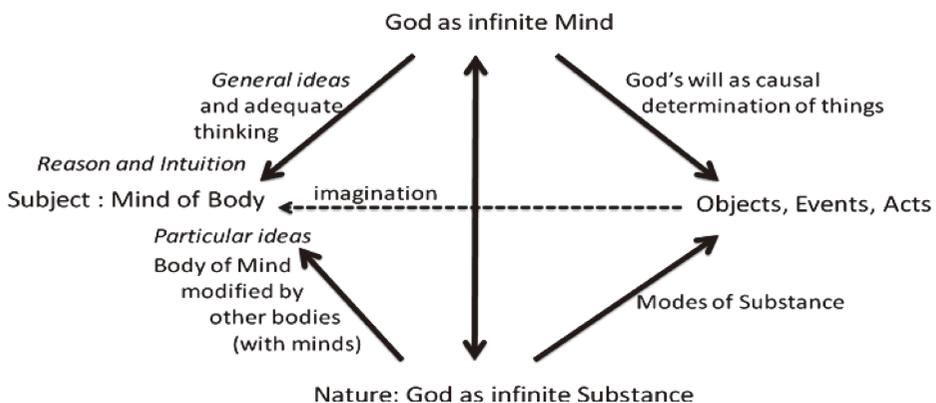
This is Spinoza's epistemic theology in so many propositions and other sentences. For him, the use of reason and the service of God are the same thing. Reason lets us find the truth and thus lets us be part of God. Finding the truth, however, is a very special activity in this philosophy. Our ideas belong to our bodies, and only our bodies think. At the same time, our ideas are God's ideas, when they are "true", or "adequate", because they are based on reason, in the sense of logic, and on "intuitive science"; otherwise, they are imaginations, worthless and meaningless, stemming from experience and communication.

2.4 Concluding: Spinoza's ontology

If we compare Spinoza's ontology as expressed in his *Ethica* with the structure summarizing Cartesian ontology we have proposed above (Fig. 1), we will have to admit that certain

features do not correspond to what characterises the thinking of the *Meditations*. The vertical, constitutive axis now carries the weight of God’s duality as the volitive mind or spirit of the world and as the material substance of the world, universally “determined” by his necessities; that axis has been strengthened maximally, as a relation from an active, volitive God to a God embodied as an all-determined, contingency-free Nature receiving his orders as its causes. By contrast, the horizontal, phenomenological axis is weakened maximally, since the relation between the human subject and the experienceable object (or “mode” of substance) is now reduced to an “inadequate” source of knowledge; imagination, that is, the entire critical phenomenology of perception that Descartes founded on the *cogito*, is dismissed as categorically misleading and irrelevant to the search for truth. Truth as correspondence between idea and object exists only in God’s thought; in human minds, truth is an internal property of ideas: the coherence between them, or adequacy. Duality (of mind and matter) is God’s constitutive property, and the monism of substance distributes this duality to the universe and all there is in it. The absence of free will is due to the logical impossibility of minds, that is, ideas, affecting bodies; if our thoughts could move our bodies, as God’s thoughts can, through his causal determination of things (including bodies) and movements, then the system would collapse. Things in the universe would be moved by the ideas of their own minds; God would be superfluous, and there would be no Subjects, etc. The system still reproduces Descartes’ diamond-shaped configuration, which is its historical origin, but has cut out the *epistemic* subject-object relation. Rationality is in this version located in the double determination of the subject, that is, in the subject’s God-given logical reasoning alone, and not in the experiential dimension of discovery and interpretation. We may venture the formulation that this is an *analytic rationalism* already, in the core sense of the trend that much later will flourish, namely that the internal logical *analysis* of concepts and conceptions overrules the external aspects of thinking such as discovery, hypothesis-based experimentation and theorizing. Science has become philosophy, and philosophy has become theology. Here is the new ontological configuration, as it looks seen from the learnings of our reading (Fig. 2):

Figure 2. An ontological model of Spinoza’s rationalism



This ontological framework may help us understand how Spinoza can say that to conceive something in a certain way is for this something to *be* that way; conceiving, thinking, as a purely mental operation, is an emanation of being itself, because *being is already doing the thinking*, so to speak. Maybe it also helps us understand why the human mind may be eternal, at least in Spinoza's musings; since substance has (the) mind, and substance does not disappear, mind cannot either; furthermore, since it is a part of God's mind, it cannot just disappear, leaving God's mind diminished.

However, the consequence that perhaps most deserves our interest is the general epistemological view it generates. Seen from the station of the Subject in the model, there are three "entries" of the world: from above, from below, and from the objects in front of the Subject. The latter is the rejected source, as we have seen. Phenomenology is ruled out; the meaning of phenomenal meaning is denied—giving rise to basic meaning scepticism. The entry from above relates my mind to God's mind as the source of adequacy through logical coherence; this is the dimension today called *analytic*, giving rise to the "analytic philosophy" dedicated to the critical analysis of concepts in order to find inherent truths and eradicate "metaphysics", forms of inadequate, inconsistent thought believed to stem from imagination, imagery, bad uses of language.⁴⁴ The entry from below is just as important, since it lets the contents of mind be determined by nature as matter, that is, by what happens to the body and its modifications by bodies; empirical data that can be measured and experimentally reproduced will belong to this category of mental inputs, which opens the epistemological gate to natural science and gives rise to the naturalism⁴⁵, in the *synthetic* dimension of analytic philosophy, that will become *empiricism* and logical positivism. The *analytic/synthetic distinction* in philosophy, though it was of course Kant who coined it, stems structurally from Spinoza's ontology. The motto, *Deus sive Natura*, leads to this very distinction and to this constitutive articulation of the complementary sides of Spinoza's mono-substantial universe: analytic, concept-oriented thinking (using the logic of Nature-as-Mind) and synthetic, "empirical" experiencing (assembling data from Nature-as-Matter). The analytic-synthetic philosophy is the scientific epistemology that became Spinoza's main gift to his posterity. For some reason, this line of development is seldom, if ever, mentioned in current accounts of the history of modern philosophy; could this be due to the ironic and potentially embarrassing fact that the modern hunters of metaphysics are themselves building on a highly metaphysical system?

3. Leibniz' *Monadology*: A Multi-Monism

3.1 Biographica

Gottfried Wilhelm Leibniz (1646 – 1716) discovered modern thinking when he was fifteen years old in Leipzig and started reading the modern thinkers, Bacon, Cardan, Campanella, Kepler, Galilei, and Descartes; the latter oriented him towards mathematics. At the University of Leipzig, he studied scholastic philosophy and wrote a treatise

in favor of nominalism. Then he moved to Altdorf, obtained a grade in law school, and became a member of the secret alchemical society of the Rosenkreuzer, where he started doing chemical experiments, whereas in Nuremberg he met the baron J. Chr. von Boineburg, who initiated him in matters of contemporary European politics. He was employed by Boineburg and sent on political missions, in particular to Paris, from 1672 to 1676, where he discussed with the Cartesian philosopher Malebranche and the logician Arnauld, studied mathematics, invented a calculating machine and the infinitesimal-differential calculus, and continued his philosophical work.⁴⁶ He sent a treatise on motion, *Theoria motus abstracti*, to the French Academy of Science and another, *Theoria motus concreti*, to the Royal Society of London. In his *Hypothesis physica nova*, 1671, he explained that physical motion requires the action of a spirit. He was deeply religious, a Protestant, seeking alliance with Catholicism, and found that the Eucharistic miracle of transubstantiation was incompatible with Descartes' notion of material substance, as *res extensa*. Instead, he developed a theory of substance as something halfway between spirit and extended matter.⁴⁷ By this metaphysical notion, he hoped to reunite Catholicism and Protestantism, and even to bridge the gap separating religion and science.⁴⁸

Leibniz left Paris in 1676, because Boineburg had died, and after short trips to London and Amsterdam (where he did meet Spinoza) settled in Hannover, where the Duke of Brunswick-Lüneburg offered him a place as his librarian and consultant. He was based in Hannover during the rest of his busy life dedicated to mathematics, religion, history, and international politics. In 1700, he managed to get a Society of Sciences started in Berlin; it was to become the German Academy of Sciences in 1744.

Descartes had been his most important inspiration both in mathematics and in ontology; the latter aspect, the dualism of substances, remained however an extreme provocation to him. In 1684, a year that Boutroux (op. cit.) considers crucial in his philosophical development, he finally breaks the ties to the Cartesian view and attacks Cartesianism in a short text called *Meditationes de cognitione, veritate et ideis*. Here, he explains that clarity is very different from distinctness, and that we must distinguish *symbolic* knowledge, based on clarity only, which establishes the overall distinction between things, but blindly, and *intuitive* knowledge⁴⁹, which is distinct and registers the details of things. The notion of the infinitely small, which dominates his new mathematical calculus, becomes the “monad”, a term⁵⁰ appearing in Leibniz's writing for the first time in 1697, in a letter; it springs out of his *New System of Nature* (*Système nouveau de la nature et de la communication des substances, aussi bien que de l'union qu'il y a entre l'âme et le corps*, 1695), where, as the title promises, the problem of the substances generates a metaphysical system. Its main principle is the famous doctrine of preestablished harmony—between the “points of substance” and between soul and body. Leibniz' “harmony” admits independence and final causation in things and thus opposes Spinoza's necessitarianism, proposing instead a certain dynamic possibilism, we might say.

His last works are all synthetic presentations of the system: the theological treatise for which he invented the term *Theodicy* (1710), the *Principles of nature and grâce* (1714)

and the *Monadology* (1714).⁵¹

3.2 The *Monadology*: The monads

This short treatise, written in excellent French, and subtitled in Latin *Principia philosophiae seu theses in gratiam Principis Eugenii conscripta*, consists of 90 sections or articles following each other without further indications. Roughly, three main parts can be distinguished: Art. 1-36 are on the monads, Art. 37-48 on God, and Art. 49-90 on the world conceived in this perspective. We will read all of them, but slowly.⁵²

1. The Monad [La Monade], of which we shall here speak, is nothing but a simple substance, which enters into compounds. By ‘simple’ is meant ‘without parts.’ (Théodicée 10.)
2. And there must be simple substances, since there are compounds; for a compound is nothing but a collection or aggregatum of simple things.
3. Now where there are no parts, there can be neither extension nor form [French: figure] nor divisibility. These Monads are the real atoms of nature and, in a word, the elements of things.
4. No dissolution of these elements need be feared, and there is no conceivable way in which a simple substance can be destroyed by natural means. (Théod. 89.)
5. For the same reason there is no conceivable way in which a simple substance can come into being by natural means, since it cannot be formed by the combination of parts [Fr.: par composition].
6. Thus it may be said that a Monad can only come into being or come to an end all at once; that is to say, it can come into being only by creation and come to an end only by annihilation, while that which is compound comes into being or comes to an end by parts.
7. Further, there is no way of explaining how a Monad can be altered in quality or internally changed by any other created thing; since it is impossible to change the place of anything in it or to conceive in it any internal motion which could be produced, directed, increased or diminished therein, although all this is possible in the case of compounds, in which there are changes among the parts. *The Monads have no windows*, through which anything could come in or go out. Accidents cannot separate themselves from substances nor go about outside of them, as the ‘sensible species’ of the Scholastics used to do. Thus neither substance nor accident can come into a Monad from outside.
8. Yet the Monads must have some qualities, otherwise they would not even be existing things. And if simple substances did not differ in quality, there would be absolutely no means of perceiving any change in things. For what is in the compound can come only from the simple

elements it contains, and the Monads, if they had no qualities, would be indistinguishable from one another, since they do not differ in quantity. Consequently, space being a plenum, each part of space would always receive, in any motion, exactly the equivalent of what it already had, and no one state of things would be discernible from another.

9. Indeed, each Monad must be different from every other. For in nature there are never two beings which are perfectly alike and in which it is not possible to find an internal difference, or at least a difference founded upon an intrinsic quality [dénomination].

10. I assume also as admitted that every created being, and consequently the created Monad, is subject to change, and further that this change is continuous in each.

11. It follows from what has just been said, that the natural changes of the Monads come from an internal principle, since an external cause can have no influence upon their inner being. (Théod. 396, 400.)

12. But, besides the principle of the change, there must be a particular series of changes [in italics: *un détail de ce qui change*], which constitutes, so to speak, the specific nature and variety of the simple substances.

13. This particular series of changes [Ce détail] should involve a multiplicity in the unit [unité] or in that which is simple. For, as every natural change takes place gradually, something changes and something remains unchanged; and consequently a simple substance must be affected and related in many ways, although it has no parts.

14. The passing condition [L'état passager], which involves and represents a multiplicity in the unit [unité] or in the simple substance, is nothing but what is called Perception, which is to be distinguished from Apperception or Consciousness, as will afterwards appear. In this matter the Cartesian view [les Cartésiens] is extremely defective, for it treats as non-existent those perceptions of which we are not consciously aware. This has also led them [viz. the Cartesians] to believe that minds [esprits] alone are Monads, and that there are no souls of animals nor other Entelechies. Thus, like the crowd, they have failed to distinguish between a prolonged unconsciousness and absolute death, which has made them fall again into the Scholastic prejudice of souls entirely separate [from bodies], and has even confirmed ill-balanced minds in the opinion that souls are mortal.

Let us take a short break here and consider what has been said and what it is that suddenly makes the author so excited and exclamative in the last article. Art. 14 sounds like a modern diatribe against Descartes (“souls... separate from bodies!”). Leibniz of course wants to solve the Cartesian problem of the duality of substance. He uses his mathematical model of integrals and differentials, which leads him to the idea of

infinitely small atoms of substance without extension: the monads. They must still be distinguishable, so they must have distinct properties of some sort, and they must be able to change without being influenced from outside (they have no “windows”). They have an “inside”, and change must originate there—in their “perception”! Instead of declaring straight away that monads therefore have mind, that they are made of plain Cartesian *res cogitans*, we get a polemic outburst. The Cartesians, he says, do not understand that not only human consciousness is mind, but that things have minds too. They have *entelechies* (an Aristotelian term, from the Greek: *en-telos-ekhein*: “having a goal” or *entelo-ekhein*, “having perfection, fulfilment”), some sort of energetic, vital forces that make them move, change or actualize their potential. Stated more directly, monads are pure spiritual entities, *atoms of possibility*, so to speak, whereas their combinations, or compounds, are the extended material things that actualize these possibilities. When monads combine, these minds merge and become the mind of the compound. Problem solved: the duality of substance is *in* the one substance. The solution is almost Spinozan; but instead of being a question of conceptions and attributes, it is just a matter of scale, so to speak. At the infinitesimal end of the scale, we get pure spiritual beings, whereas at the integral end, we get the material universe—equipped with a universal mind, we must suppose.

First, more about the monads and the way in which they are minds. They have “perception”, of course without having sensory organs or nervous systems, since they are simple:

15. The activity of the internal principle which produces change or passage from one perception to another may be called Appetition. It is true that desire [l'appetit] cannot always fully attain to the whole perception at which it aims, but it always obtains some of it and attains to new perceptions.

16. We have in ourselves experience of a multiplicity in simple substance, when we find that the least thought of which we are conscious involves variety in its object. Thus all those who admit that the soul is a simple substance should admit this multiplicity in the Monad; and M. Bayle ought not to have found any difficulty in this, as he has done in his Dictionary, article ‘Rorarius.’⁵³

17. Moreover, it must be confessed that perception and that which depends upon it are inexplicable on mechanical grounds, that is to say, by means of figures and motions. And supposing there were a machine, so constructed as to think, feel, and have perception, it might be conceived as increased in size, while keeping the same proportions, so that one might go into it as into a mill. That being so, we should, on examining its interior, find only parts which work one upon another, and never anything by which to explain a perception. Thus it is in a simple substance, and not in a compound or in a machine, that perception must be sought for. Further, nothing but this (namely, perceptions and their changes) can be found in a simple substance. It is also in this alone that all the internal activities of simple substances can consist.

(Théod. Préf. [E. 474; G. vi. 37].)

18. All simple substances or created Monads might be called Entelechies, for they have in them a certain perfection (echousi to enteles); they have a certain self-sufficiency (autarkeia) which makes them the sources of their internal activities and, so to speak, incorporeal automata. (Théod. 87.)

19. If we are to give the name of Soul to everything which has perceptions and desires [appetits] in the general sense which I have explained, then all simple substances or created Monads might be called souls; but as feeling [le sentiment] is something more than a bare perception, I think it right that the general name of Monads or Entelechies should suffice for simple substances which have perception only, and that the name of Souls should be given only to those in which perception is more distinct, and is accompanied by memory.

20. For we experience in ourselves a condition in which we remember nothing and have no distinguishable perception; as when we fall into a swoon or when we are overcome with a profound dreamless sleep. In this state the soul does not perceptibly differ from a bare Monad; but as this state is not lasting, and the soul comes out of it, the soul is something more than a bare Monad. (Théod. 64.)

21. And it does not follow that in this state the simple substance is without any perception. That, indeed, cannot be, for the reasons already given; for it cannot perish, and it cannot continue to exist without being affected in some way, and this affection is nothing but its perception. But when there is a great multitude of little perceptions, in which there is nothing distinct, one is stunned; as when one turns continuously round in the same way several times in succession, whence comes a giddiness which may make us swoon, and which keeps us from distinguishing anything. Death can for a time put animals into this condition.

22. And as every present state of a simple substance is naturally a consequence of its preceding state, in such a way that its present is big with its future; (Théod. 350.)

23. And as, on waking from stupor, we are conscious of our perceptions, we must have had perceptions immediately before we awoke, although we were not at all conscious of them; for one perception can in a natural way come only from another perception, as a motion can in a natural way come only from a motion. (Théod. 401-403.)

24. It thus appears that if we had in our perceptions nothing marked and, so to speak, striking and highly-flavoured, we should always be in a state of stupor. And this is the state in which the bare Monads are.

25. We see also that nature has given heightened perceptions to animals, from the care she

has taken to provide them with organs, which collect numerous rays of light, or numerous undulations of the air, in order, by uniting them, to make them have greater effect. Something similar to this takes place in smell, in taste and in touch, and perhaps in a number of other senses, which are unknown to us. And I will explain presently how that which takes place in the soul represents what happens in the bodily organs.⁵⁴

26. Memory provides the soul with a kind of consecutiveness, which resembles [imite] reason, but which is to be distinguished from it. Thus we see that when animals have a perception of something which strikes them and of which they have formerly had a similar perception, they are led, by means of representation in their memory, to expect what was combined with the thing in this previous perception, and they come to have feelings similar to those they had on the former occasion. For instance, when a stick is shown to dogs, they remember the pain it has caused them, and howl and run away. (Théod. Discours de la Conformité, &c., ss. 65.)

27. And the strength of the mental image which impresses and moves them comes either from the magnitude or the number of the preceding perceptions. For often a strong impression produces all at once the same effect as a long-formed habit, or as many and oft-repeated ordinary perceptions.

28. In so far as the concatenation of their perceptions is due to the principle of memory alone, men act like the lower animals, resembling the *empirical* physicians, whose methods are those of *mere practice without theory*. Indeed, in three-fourths of our actions we are nothing but empirics. For instance, when we expect that there will be daylight to-morrow, we do so empirically, because it has always so happened until now. It is only the astronomer who thinks it on rational grounds.

29. But it is the knowledge of necessary and eternal truths that distinguishes us from the mere animals and gives us Reason and the sciences, raising us to the knowledge of ourselves and of God. And it is this in us that is called the rational soul or mind [esprit].

30. It is also through the knowledge of necessary truths, and through their abstract expression, that we rise to acts of reflexion, which make us think of what is called I, and observe that this or that is within us: and thus, thinking of ourselves, we think of being, of substance, of the simple and the compound, of the immaterial, and of God Himself, conceiving that what is limited in us is in Him without limits. And these acts of reflexion furnish the chief objects of our reasonings. (Théod. Préf. [E. 469; G. vi. 27].)

31. Our reasonings are grounded upon two great principles, that of *contradiction*, in virtue of which we judge false that which involves a contradiction, and true that which is opposed or contradictory to the false; (Théod. 44, 169.)

32. And that of *sufficient reason*, in virtue of which we hold that there can be no fact real or existing, no statement true, unless there be a sufficient reason, why it should be so and not otherwise, although these reasons usually cannot be known by us. (Théod. 44, 196.)

33. There are also two kinds of truths, those of reasoning and those of fact. Truths of reasoning are *necessary* and their opposite is *impossible*: truths of fact are *contingent* and their opposite is *possible*. When a truth is necessary, its reason can be found by analysis, resolving it into more simple ideas and truths, until we come to those which are primary. (Théod. 170, 174, 189, 280-282, 367. Abrégé, Object. 3.)⁵⁵

34. It is thus that in Mathematics speculative Theorems and practical Canons are reduced by analysis to Definitions, Axioms and Postulates.

35. In short, there are simple ideas, of which no definition can be given; there are also axioms and postulates, in a word, primary principles, which cannot be proved, and indeed have no need of proof; and these are identical propositions, whose opposite involves an express contradiction. (Théod. 36, 37, 44, 45, 49, 52, 121-122, 337, 340-344.)

36. But there must also be a sufficient reason for contingent truths or truths of fact, that is to say, for the sequence or connexion of the things which are dispersed throughout the universe of created beings, in which the analyzing into particular reasons might go on into endless detail, because of the immense variety of things in nature and the infinite division of bodies. There is an infinity of present and past forms and motions which go to make up the efficient cause of my present writing; and there is an infinity of minute tendencies and dispositions of my soul, which go to make its final cause.

So far, we see again that monads are equipped with a sort of striving, a rudimentary teleology; and that these small minds can combine and become clear consciousnesses. Their combination depends on the combination of bodies—in fact we get an early version of “complexity theory”. The duality of substance is seen as a gradual transition from simplex to complex and thereby from a minimum to the maximum of mind which we call consciousness.⁵⁶

3.3 The *Monadology*: God

Truth is either “analytical”—truth of reasoning, and necessary; or it is “empirical”, truth of fact, and contingent. But all contingencies, as all universals, are dependent on the one necessary substance, God:

37. And as all this detail again involves other prior or more detailed contingent things, each of which still needs a similar analysis to yield its reason, we are no further forward: and the sufficient or final reason must be outside of the sequence or series of particular contingent

things, however infinite this series may be.

38. Thus the final reason of things must be in a necessary substance, in which the variety of particular changes exists only eminently, as in its source; and this substance we call God. (Théod. 7.)

39. Now as this substance is a sufficient reason of all this variety of particulars, which are also connected together throughout; there is only one God and this God is sufficient.

40. We may also hold that this supreme substance, which is unique, universal and necessary, nothing outside of it being independent of it,—this substance, which is a pure sequence of possible being, must be illimitable and must contain as much reality as is possible.

41. Whence it follows that God is absolutely perfect; for perfection is nothing but amount of positive reality, in the strict sense, leaving out of account the limits or bounds in things which are limited. And where there are no bounds, that is to say in God, perfection is absolutely infinite. (Théod. 22, Préf. [E. 469 a; G. vi. 27].)

42. It follows also that created beings derive their perfections from the influence of God, but that their imperfections come from their own nature, which is incapable of being without limits. For it is in this that they differ from God. An instance of this original imperfection of created beings may be seen in the natural inertia of bodies. (Théod. 20, 27-30, 153, 167, 377 sqq.)

43. It is farther true that in God there is not only the source of existences but also that of essences, in so far as they are real, that is to say, the source of what is real in the possible. For the understanding of God is the region of eternal truths or of the ideas on which they depend, and without Him there would be nothing real in the possibilities of things, and not only would there be nothing in existence, but nothing would even be possible. (Théod. 20.)

44. For if there is a reality in *essences or possibilities*, or rather in eternal truths, this reality must needs be founded in something existing and actual, and consequently in the existence of the necessary Being, in whom essence involves existence, or in whom to be possible is to be actual. (Théod. 184-189, 335.)

45. Thus God alone (or the necessary Being) has this prerogative that He must necessarily exist, if He is possible. And as nothing can interfere with the possibility of that which involves no limits, no negation and consequently no contradiction, this [His possibility] is sufficient of itself to make known the existence of God a priori. We have thus proved it, through the reality of eternal truths. But a little while ago we proved it also a posteriori, since there exist contingent beings, which can have their final or sufficient reason only in the necessary Being, which has the reason of its existence in itself.

46. We must not, however, imagine, as some do, that eternal truths, being dependent on God are arbitrary and depend on His will, as Descartes, and afterwards M. Poiret, appear to have held. That is true only of contingent truths, of which the principle is fitness [convenance] or choice of the best, whereas necessary truths depend solely on His understanding and are its inner object. (Théod. 180-184, 185, 335, 351, 380.)

47. Thus God alone is the primary unity or original simple substance, of which all created or derivative Monads are products and have their birth, so to speak, through *continual fulgurations of the Divinity from moment to moment*, limited by the receptivity of the created being, of whose essence it is to have limits. (Théod. 382-391, 398, 395.)

48. In God there is Power, which is the source of all, also Knowledge, whose content is the variety of the ideas, and finally Will, which makes changes or products according to the principle of the best. (Théod. 7, 149, 150.) These characteristics correspond to what in the created Monads forms the ground or basis, to the faculty of Perception and to the faculty of Appetition. But in God these attributes are absolutely infinite or perfect; and in the created Monads or the Entelechies (or perfectihabiae, as Hermolaüs Barbarus⁵⁷ translated the word) there are only imitations of these attributes, according to the degree of perfection of the Monad. (Théod. 87.)

God has understanding, power and will; God causes monads to exist and informs them by his “fulgurations”; monads therefore, as imperfect versions of their perfect creator, have perception and appetite, something like understanding or knowledge and volition. God himself understands the eternal necessary truths, and he rules by his power the possible and contingent world by his continuous instant “fulgurational” instructions, a differential form of permanent creation. His will allows him to decide to let be or happen what he finds best.

Note that essence and possibility are treated as one. Essence, as in Spinoza, is also concept; but to conceive of something not necessary is to think of it as possible, and for Leibniz, possibility is a level of reality. So there are no impossibles in the world, only in logic, where impossibility—like falsehood—just corresponds to contradiction. God must apparently create reality twice, first as a huge amount of possibles, and secondly as contingent existant facts chosen from the possibles.

3.4 The *Monadology*: The world

The rest of the *Monadology* concerns the world thus constituted. In article 51, we again read that all interaction between things occurs by the mediation of God. Events do not directly affect each other, instead it is God who creates the effect of one event on another. Every monad is connected to the entire universe by perceiving and expressing it, more or less clearly. Those particular monad clusters that we call souls and bodies are each unconnected, except through God, who assures their perfect harmony in every moment

of time. Still, humans should strive for progress through time toward *the city of God* (Art. 85 and onwards), a sort of “end of history”⁵⁸ state of human affairs in the world, and a version of “the meaning of life”.

So here is the remaining part of the *Monadology* (italics are still mine):

49. A created thing is said to act outwardly in so far as it has perfection, and to suffer [or be passive, *pâtir*] in relation to another, in so far as it is imperfect. Thus *activité* [action] is attributed to a Monad, in so far as it has distinct perceptions, and passivity [passion] in so far as its perceptions are confused. (Théod. 32, 66, 386.)

50. And one created thing is more perfect than another, in this, that there is found in the more perfect that which serves to explain a priori what takes place in the less perfect, and it is on this account that the former is said to act upon the latter.

51. But in simple substances the influence of one Monad upon another is only ideal, and it can have its effect only through the mediation of God, in so far as in the ideas of God any Monad rightly claims that God, in regulating the others from the beginning of things, should have regard to it. For since one created Monad cannot have any physical influence upon the inner being of another, it is only by this means that the one can be dependent upon the other. (Théod. 9, 54, 65, 66, 201. *Abrégé*, Object. 3.)

52. Accordingly, among created things, activities and passivities are mutual. For God, comparing two simple substances, finds in each reasons which oblige Him to adapt the other to it, and consequently what is active in certain respects is passive from another point of view; active in so far as what we distinctly know in it serves to explain [*rendre raison de*] what takes place in another, and passive in so far as the explanation [*raison*] of what takes place in it is to be found in that which is distinctly known in another. (Théod. 66.)

53. Now, as in the Ideas of God there is an infinite number of possible universes, and as only one of them can be actual, there must be a sufficient reason for the choice of God, which leads Him to decide upon one rather than another. (Théod. 8, 10, 44, 173, 196 sqq., 225, 414-416.)

54. And this reason can be found only in the fitness [*convenance*], or in the degrees of perfection, that these worlds possess, since each possible thing has the right to aspire to existence in proportion to the amount of perfection it contains in germ. (Théod. 74, 167, 350, 201, 130, 352, 345 sqq., 354.)

55. Thus the actual existence of the best that wisdom makes known to God is due to this, that His goodness makes Him choose it, and His power makes Him produce it. (Théod. 8, 78, 80, 84, 119, 204, 206, 208. *Abrégé*, Object. 1 and 8.)

56. Now this *connexion or adaptation of all created things to each and of each to all*, means that each simple substance has relations which express all the others, and, consequently, that it is a perpetual living mirror of the universe. (Théod. 130, 360.)

57. And as the same town, looked at from various sides, appears quite different and becomes as it were numerous in aspects [perspectivement]; even so, as a result of the infinite number of simple substances, it is as if there were so many different universes, which, nevertheless are nothing but aspects [perspectives] of a single universe, according to the special point of view of each Monad. (Théod. 147.)

58. And by this means there is obtained as great variety as possible, along with the greatest possible order; that is to say, it is the way to get as much perfection as possible. (Théod. 120, 124, 241 sqq., 214, 243, 275.)

59. Besides, no hypothesis but this (which I venture to call proved) fittingly exalts the greatness of God; and this Monsieur Bayle recognized when, in his Dictionary (article Rorarius), he raised objections to it, in which indeed he was inclined to think that I was attributing too much to God—more than it is possible to attribute. But he was unable to give any reason which could show the impossibility of this universal harmony, according to which *every substance exactly expresses all others through the relations it has with them*.

60. Further, in what I have just said there may be seen the reasons a priori why things could not be otherwise than they are. For God in regulating the whole has had regard to each part, and in particular to each Monad, whose nature being to represent, nothing can confine it to the representing of only one part of things; though it is true that this representation is merely confused as regards the variety of particular things [le détail] in the whole universe, and can be distinct only as regards a small part of things, namely, those which are either nearest or greatest in relation to each of the Monads; otherwise each Monad would be a deity. It is not as regards their object, but as regards the different ways in which they have knowledge of their object, that the Monads are limited. In a confused way they all strive after [vont à] the infinite, the whole; but they are limited and differentiated through the degrees of their distinct perceptions.

61. And compounds are in this respect analogous with [symbolisent avec] simple substances. For all is a plenum (and thus all matter is connected together) and in the plenum every motion has an effect upon distant bodies in proportion to their distance, so that each body not only is affected by those which are in contact with it and in some way feels the effect of everything that happens to them, but also is mediately affected by bodies adjoining those with which it itself is in immediate contact. Wherefore it follows that this inter-communication of things extends to any distance, however great. And consequently *every body feels the effect of all that takes place in the universe*, so that *he who sees all might read in each* what is happening everywhere, and even what has happened or shall happen, observing in the present that which

is far off as well in time as in place: *symponia panta*, as Hippocrates said. But a soul can read in itself only that which is there represented distinctly; it cannot all at once unroll everything that is enfolded in it, for its complexity is infinite.

62. Thus, although each created Monad represents the whole universe, it represents more distinctly the body which specially pertains to it, and of which it is the entelechy, and as this body expresses the whole universe through the connexion of all matter in the plenum, the soul also represents the whole universe in representing this body, which belongs to it in a special way. (Théod. 400.)

63. The body belonging to a Monad (which is its entelechy or its soul) constitutes along with the entelechy what may be called a living being, and along with the soul what is called an animal. Now this body of a living being or of an animal is always organic; for, as every Monad is, in its own way, a mirror of the universe, and as the universe is ruled according to a perfect order, there must also be order in that which represents it, i.e. in the perceptions of the soul, and consequently there must be order in *the body, through which the universe is represented in the soul*. (Théod. 403.)

64. Thus the organic body of each living being is a kind of divine machine or natural automaton, which infinitely surpasses all artificial automata. For a machine made by the skill of man is not a machine in each of its parts. For instance, the tooth of a brass wheel has parts or fragments which for us are not artificial products, and which do not have the special characteristics of the machine, for they give no indication of the use for which the wheel was intended. But the machines of nature, namely, living bodies, are still machines in their smallest parts ad infinitum. It is this that constitutes the difference between nature and art, that is to say, between the divine art and ours. (Théod. 134, 146, 194, 403.)

65. And the Author of nature has been able to employ this divine and infinitely wonderful power of art, because each portion of matter is not only infinitely divisible, as the ancients observed, but is also actually subdivided without end, each part into further parts, of which each has some motion of its own; otherwise it would be impossible for each portion of matter to express the whole universe. (Théod. Prélim., Disc. de la Conform. 70, and 195.)

66. Whence it appears that in the smallest particle of matter there is a world of creatures, living beings, animals, entelechies, souls.

67. Each portion of matter may be conceived as like a garden full of plants and like a pond full of fishes. But each branch of every plant, each member of every animal, each drop of its liquid parts is also some such garden or pond.

68. And though the earth and the air which are between the plants of the garden, or the water

which is between the fish of the pond, be neither plant nor fish; yet they also contain plants and fishes, but mostly so minute as to be imperceptible to us.

69. Thus there is nothing fallow, nothing sterile, nothing dead in the universe, no chaos, no confusion save in appearance, somewhat as it might appear to be in a pond at a distance, in which one would see a confused movement and, as it were, a swarming of fish in the pond, without separately distinguishing the fish themselves. (Théod. Préf. [E. 475 b; 477 b; G. vi. 40, 44].)

70. Hence it appears that each living body has a dominant entelechy, which in an animal is the soul; but the members of this living body are full of other living beings, plants, animals, each of which has also its dominant entelechy or soul.

71. But it must not be imagined, as has been done by some who have misunderstood my thought, that each soul has a quantity or portion of matter belonging exclusively to itself or attached to it for ever, and that it consequently owns other inferior living beings, which are devoted for ever to its service. For all bodies are in a perpetual flux like rivers, and parts are entering into them and passing out of them continually.

72. Thus the soul changes its body only by degrees, little by little, so that it is never all at once deprived of all its organs; and there is often metamorphosis in animals, but never metempsychosis or transmigration of souls; nor are there souls entirely separate [from bodies] nor unembodied spirits [génies sans corps]. *God alone is completely without body.* (Théod. 90, 124.)

73. It also follows from this that there never is absolute birth [génération] nor complete death, in the strict sense, consisting in the separation of the soul from the body. What we call births [génération] are developments and growths, while what we call deaths are envelopments and diminutions.

74. Philosophers have been much perplexed about the origin of forms, entelechies, or souls; but nowadays it has become known, through careful studies of plants, insects, and animals, that the organic bodies of nature are never products of chaos or putrefaction, but always come from seeds, in which there was undoubtedly some preformation; and it is held that not only the organic body was already there before conception, but also a soul in this body, and, in short, the animal itself; and that by means of conception this animal has merely been prepared for the great transformation involved in its becoming an animal of another kind. Something like this is indeed seen apart from birth [génération], as when worms become flies and caterpillars become butterflies. (Théod. 86, 89. Préf. [E. 475 b; G. vi. 40 sqq.]; 90, 187, 188, 403, 86, 397.)

75. The animals, of which some are raised by means of conception to the rank of larger animals, may be called spermatoc, but those among them which are not so raised but remain in their own kind (that is, the majority) are born, multiply, and are destroyed like the large

animals, and it is only a few chosen ones [élus] that pass to a greater theatre.

76. But this is only half of the truth, and accordingly I hold that if an animal never comes into being by natural means [naturellement], no more does it come to an end by natural means; and that not only will there be no birth [génération], but also no complete destruction or death in the strict sense. And these reasonings, made a posteriori and drawn from experience are in perfect agreement with my principles deduced a priori, as above. (Théod. 90.)

77. Thus it may be said that not only the soul (mirror of an indestructible universe) is indestructible, but also the animal itself, though its mechanism [machine] may often perish in part and take off or put on an organic slough [des dépouilles organiques].

78. These principles have given me a way of explaining naturally the union or rather the mutual agreement [conformité] of the soul and the organic body. The soul follows its own laws, and the body likewise follows its own laws; and they agree with each other in virtue of the pre-established harmony between all substances, since they are all representations of one and the same universe. (Préf. [E. 475 a; G. vi. 39]; Théod. 340, 352, 353, 358.)

79. Souls act according to the laws of final causes through appetitions, ends, and means. Bodies act according to the laws of efficient causes or motions. And the two realms, that of efficient causes and that of final causes, are in harmony with one another.

80. Descartes⁵⁹ recognized that souls cannot impart any force to bodies, because there is always the same quantity of force in matter. Nevertheless he was of opinion that the soul could change the direction of bodies. But that is because in his time it was not known that there is a law of nature which affirms also the conservation of the same total direction in matter. Had Descartes noticed this, he would have come upon my system of pre-established harmony. (Préf. [E. 477 a; G. vi. 44]; Théod. 22, 59, 60, 61, 63, 66, 345, 346 sqq., 354, 355.)

81. According to this system, bodies act *as if* (to suppose the impossible) there were no souls, and souls act *as if* there were no bodies, and both act *as if* each influenced the other.

82. As regards minds [esprits] or rational souls, though I find that what I have just been saying is true of all living beings and animals (namely that animals and souls come into being when the world begins and no more come to an end than the world does), yet there is this peculiarity in rational animals, that their spermatric animalcules, so long as they are only spermatric, have merely ordinary or sensuous [sensitive] souls; but when those which are chosen [élus], so to speak, attain to human nature through an actual conception, their sensuous souls are raised to the rank of reason and to the prerogative of minds [Esprits]. (Théod. 91, 397.)

83. Among other differences which exist between ordinary souls and minds [Esprits], some

of which differences I have already noted, there is also this: that souls in general are living mirrors or images of the universe of created things, but that minds are also images of the Deity or Author of nature Himself, capable of knowing the system of the universe, and to some extent of imitating it through architectonic ensamples [échantillons], each mind being like a small divinity in its own sphere. (Théod. 147.)

84. It is this that enables spirits [or minds—Esprits] to enter into a kind of fellowship with God, and brings it about that in relation to them He is not only what an inventor is to his machine (which is the relation of God to other created things), but also what a prince is to his subjects, and, indeed, what a father is to his children.

85. Whence it is easy to conclude that the totality [assemblage] of all spirits [Esprits] must compose the City of God, that is to say, the most perfect State that is possible, under the most perfect of Monarchs. (Théod. 146; Abrégé, Object. 2.)

86. This City of God, this truly universal monarchy, is a moral world in the natural world, and is the most exalted and most divine among the works of God; and it is in it that the glory of God really consists, for He would have no glory were not His greatness and His goodness known and admired by the spirits [esprits]. It is also in relation to this divine City that God specially has goodness, while His wisdom and His power are manifested everywhere. (Théod. 146; Abrégé, Object. 2.)

87. As we have shown above that there is a perfect harmony between the two realms in nature, one of efficient, and the other of final causes, we should here notice also another harmony between the physical realm of nature and the moral realm of grace, that is to say, between God, considered as Architect of the mechanism [machine] of the universe, and God considered as Monarch of the divine City of the spirits [Esprits]. (Théod. 62, 74, 118, 248, 112, 130, 247.)

88. A result of this harmony is that things lead to grace by the very ways of nature, and that this globe, for instance, must be destroyed and renewed by natural means at the very time when the government of spirits requires it, for the punishment of some and the reward of others. (Théod. 18 sqq., 110, 244, 245, 340.)

89. It may also be said that God as Architect satisfies in all respects God as Lawgiver, and thus that sins must bear their penalty with them, through the order of nature, and even in virtue of the mechanical structure of things; and similarly that noble actions will attain their rewards by ways which, on the bodily side, are mechanical, although this cannot and ought not always to happen immediately.

90. Finally, under this perfect government no good action would be unrewarded and no bad one unpunished, and all should issue in the well-being of the good, that is to say, of those who

are not malcontents in this great state, but who trust in Providence, after having done their duty, and who love and imitate, as is meet, the Author of all good, finding pleasure in the contemplation of His perfections, as is the way of genuine ‘pure love,’ which takes pleasure in the happiness of the beloved. This it is which leads wise and virtuous people to devote their energies to everything which appears in harmony with the presumptive or antecedent will of God, and yet makes them content with what God actually brings to pass by His secret, consequent and positive [décisive] will, recognizing that *if we could sufficiently understand the order of the universe, we should find* that it exceeds all the desires of the wisest men, and that it is impossible to make it better than it is, not only as a whole and in general but also for ourselves in particular, if we are attached, as we ought to be, to the Author of all, not only as to the architect and efficient cause of our being, but as to our master and to the final cause, which ought to be the whole aim of our will, and which can alone make our happiness. (Théod. 134, 278. Préf. [E. 469; G. vi. 27, 28].)

This is in Leibniz’ own nutshell his metaphysical view of the world, and his response to the Cartesian challenge: the duality of matter. In a sense, he additionally reacts to Spinoza’s enigmatic reference to mind and extended matter as depending on “conceptions” and “attributes”; instead of being just ways of “conceiving”, these distinctions are ontologically anchored in the things of the universe themselves: the monadic world really does contain both mind and matter everywhere, and most notably it contains souls and bodies that exist and act in parallel strata of the uniform substance of the world. Souls are unconnected to bodies, but both act as if there were connections, since God lets bodies be moved by physical causation when he lets souls be moved by final causation. Considered as a “philosophy of mind” of his day, Leibniz’ monadology would no doubt be as qualified as any speculative proposal made in contemporary debates. Still, its two basic moves—the installation of mind in the infinitesimal atoms of matter, and the installation of a divinity outside of matter with direct access to every such cell of the universe, from where the states and events of the world are established once and for all by directives communicated to each isolated cell—are hopelessly fantastic, compared to Descartes’ sober suggestion of a substantial duality and a principle of infinite knowledge as a regulatory idea (as Kant may have called it).

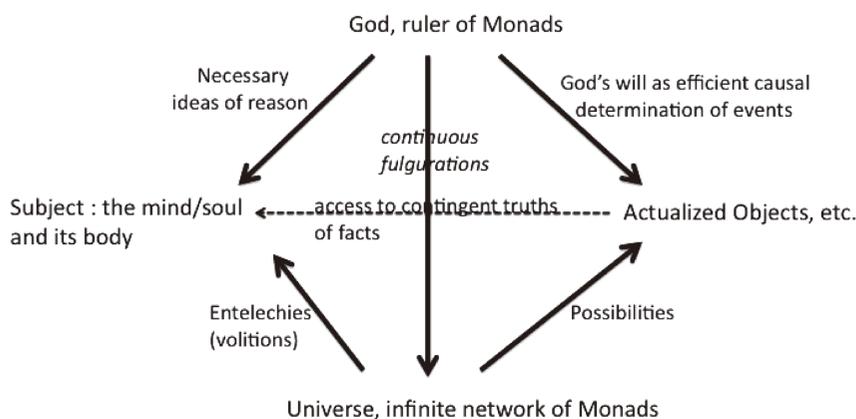
3.5 Concluding: Leibniz’ ontology

Two motives are remarkably absent in Leibniz’ thinking if regarded as developments of Descartes’ and Spinoza’s rationalisms: critique of religious beliefs, and critique of experience. Here, the *constitutive axis* of the metaphysical model refers every monad to God in every moment; it leaves ample space for the religious interpretation of the divinity and seems close to the idea of permanent creation in certain nominalist ontologies. The subjective, conscious entity is a soul (French: une âme) and a mind (French: un esprit); the soul will be punished for its sins and awarded for its good deeds. The mind will take part in God’s reason and will strive toward the divine city (*la Cité divine*).⁶⁰ Curiously, Leibniz is not interested in meaninglessness and falsity, errors of judgement, or the origin

of mistakes and false beliefs. His monadic universe does not host a phenomenology⁶¹ of doubtful and questionable experience; the mind perceives contingent facts, treats them to the necessary ideas of reason, and rather devotedly accepts the limitations and volitions due to “its” bodily and earthly condition. The *epistemic axis* is almost inactive; perception in the ordinary sense mirrors contingent facts, but does not problematize them. As in a mirror, all we see is “truly” there. All factual representations are true, somehow.⁶² Some representations are just clearer than others, depending on distance.

The ontological model summarizing this version of rationalism would be the following graph (Fig. 3):

Figure 3. An ontological model of Leibniz’ rationalism



The balance between the axes is tipped to the advantage of the constitutive axis, and the epistemic axis is reduced to passivity. Compared with Descartes’ version, where the epistemic axis is predominant, and with Spinoza’s, where both axes are important, this almost an-epistemic variant leaves the reader with a philosophy essentially embedded in religion, and offering a world view oriented by a corresponding teleological perspective.

4. Rationalism and Meaning

4.1 Three ontologies

Descartes’ foundational ontological model presents rationalism as a quest for truth in science and philosophy based on a critical phenomenology: thinking must be as clear and distinct as possible and has to filter experience in order to rid it of dogmatic or otherwise untenable beliefs. Rational philosophy is for him a “method” helping the endeavor of knowledge to become scientific. His dualism of substance, which was to become the major challenge to modern thinking, was the price he paid for making this proposal. The realm of thinking, *res cogitans*, had to be separated from the realm of phenophysical things, or “life world”, as Husserl was to call it, *res extensa*, for there to be an epistemic distance allowing a relation of possible correspondence. Reason itself is an unextended

thing; it rules our thought when we let it do so, and in that case it gives us a chance to explore and gradually get to understand as much of the extended world as is accessible to our finite intellect—how much that is, we cannot say, but we know that there will always be more to find and grasp, and we should not accept to stop trying. Mathematics gives us a model of science as an epistemic process.

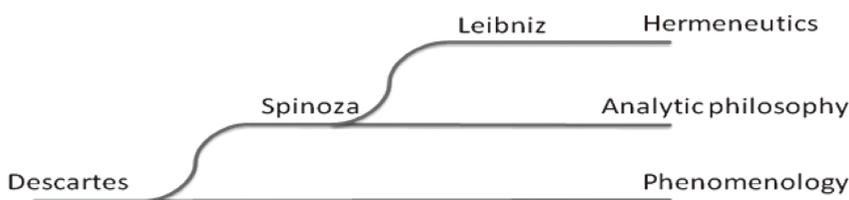
Descartes' follower Spinoza prefers logic to mathematics (however believing that they are one) and restricts knowledge to establishing axiomatic coherence between the propositions that are compatible with the principles of reason and the empirical measurements that the embodied mind can obtain. That mind can also perceive and imagine, but is led astray by making hypotheses and fantasizing about more or less unknown things, instead of clinging to the necessary truths that constitute the content of “adequate” thinking and axiomatic formalization. Epistemics is thus held back by constitutive doctrine. Spinoza's substantial monism is consistent with the privilege he gives to coherence and order (over correspondence and heuristics) in the economy of thinking. Since for him, mind and matter are nothing but complementary aspects of all substance, mental content in no relevant way *represents* matter—it rather *is* matter. Matter is therefore necessarily divine, and logical. A channel to Jewish mysticism is opened, and will remain open far into modernity, where the logical empiricism of the Vienna Circle and the entire subsequent spectrum of analytic philosophy demonstrate the historical importance of this curiously anti-metaphysical metaphysics.⁶³

This shift in epistemic focus from Descartes to Spinoza within what we may still call classical rationalism is historically decisive. In the first place it allows Leibniz to take another step in the direction of reconciling religion and philosophy, again paying a price, namely the inherently absurd monadic fantasy⁶⁴ and the idea of the preestablished harmony between the world's mental and material life. Since false ideas would disturb the harmony, Leibniz avoids dealing with them as anything else than insufficiently clear representations; they must be understood in their context, he would say, ecumenically. Therefore, his system eliminates—even more radically than Spinoza's—the relevance of experiential access to reality on the epistemic axis: the critique of perception that leads to phenomenology.

The Leibnizean and the Spinozan monisms both reinstall the challenging but inevitable Cartesian duality within the one and only substance, the former via an idea of complexity—from infinitesimal to cosmic—and the latter mystically; both recur to a notion of divinity equipped with much stronger features of agency than Descartes' scandalously minimalistic version. Only Descartes stays on the ground of a *res cogitans* as *consciousness* bound to the animal body by *nervous systems*. How the nerves create consciousness is an open question. If, by contrast, mind existed before nature evolved nerves in living beings, and if it exists independently of nervous systems, then the causal relation between body and mind simply becomes uninteresting and can even be disposed of, as it fundamentally happens in Spinoza and Leibniz. Descartes' version is therefore the one that modern bio- or neuro-cognitive studies should—and sometimes does⁶⁵—consider as the most relevant.

From the point of view of ontology, the history of rationalist thinking can be seen as forming a double bifurcation, thus describing a double split that defines most of the contemporary philosophical landscape. Descartes' version (I) bifurcates through Spinoza's criticism (II), and Spinoza's version again bifurcates through Leibniz' version (III). Version I eventually becomes modern formal Husserlian *phenomenology*, incl. Merleau-Ponty; version II gives rise to modern *analytic* philosophy, in the line of Wittgenstein and Russell; and version III becomes modern *hermeneutics*, from the philosophy of history of Hegel and Marx to Heidegger, Gadamer, Cassirer, Ricoeur, Foucault and Serres. The treatment of *meaning*, the sort of mental reality that semantics is about, is characteristically different in the three versions, because it depends on the underlying ontological way of thinking. In version I, there is a categorical distinction between meaning as signified and meaning referred to (the 'referent'); this distinction invites a study of the human imaginary as a cognitive framework of semantic construals of meaning. In version II, that same imaginary is dismissed as instable, unregulated, and not really being a possible object of study, since there is nothing substantial to understand in it (this position is meaning skepticism); empirically manifested behavior is deemed far better than experienced meaning as an access to the mind. In version III, by contrast, meaning is everywhere, and social and cultural life is even better than individual mental life as a window to meaning; so here, individual thinking is best understood as framed by society and history. We get a bifurcation in ontological thinking, and a differentiation in the conceptions of meaning varying from critical (I) to irrelevant (II) to omnipresent (III), (meaning curiously moving from being something to being nothing and then even being everything!):

Figure 4



Where would an all-influential philosopher like Immanuel Kant be in such a picture? I would venture to let him be an ontological Cartesian, and to let his transcendental subjectivity be a descendent of the *cogito*.⁶⁶ However, most modern philosophies seem to want to have Kant in their genealogy⁶⁷, so the point is disputable, and I will not elaborate on it in this context.

4.2 Rationalist ontologies and modern theories of meaning

Would this ontological differentiation be relevant to the understanding of the differences in semiotic or semantic theorizing in the last century? A theory of *meaning* is, or presupposes, a metaphysical model, an ontological setting, as its philosophical grounding. For *meaning* is necessarily a version of, or a content of, what Descartes called *res cogitans*. Meaning is

what we “mean”, that is, think or express, or think that others express.

In terms of an ontology of signification, we will let a person be an expressive agent (S2: signifying X) addressing the first person subject (S1: interpreting X* as being signified). In order to “signify”, S1’s other, S2, has to intend his agency as expressive and understand the expression as a possible means of signifying X. On the other hand, S1 has to attend to S2’s act and understand it as expressive. S1 must therefore believe that there is a source of this possibility, and that S2 thinks of this source as shared with S1. The source may be a shared language, or it may be some behavioral code, such as a cultural code of gestural politeness or of motorized traffic. Between the *signifier* (from French: le signifiant, *sa* of X) and the intended *signified* (le signifié, *sé*, X), there has to exist a functional relation, a *semiotic function*, $f(sa, sé)$, creating the possibility of the intentional and expressive situation of S1, S2, X, and X*. In particular, the status of X* as a communicated version of X, that is, as a representation of X, presupposes the shared belief in the existence of a semiotic function $f(sa, sé)$ belonging to an instance of such functions previously established and in principle available to the subjects in question. This instance—let’s call it the *symbolic instance*—must be part of S1’s thinking in order for him to experience the situation as a scene of communication. S1’s experience of S2’s act contains the supposition that the symbolic instance is as present to S2 as it is to himself, even if the semiotic function in question is not shared.

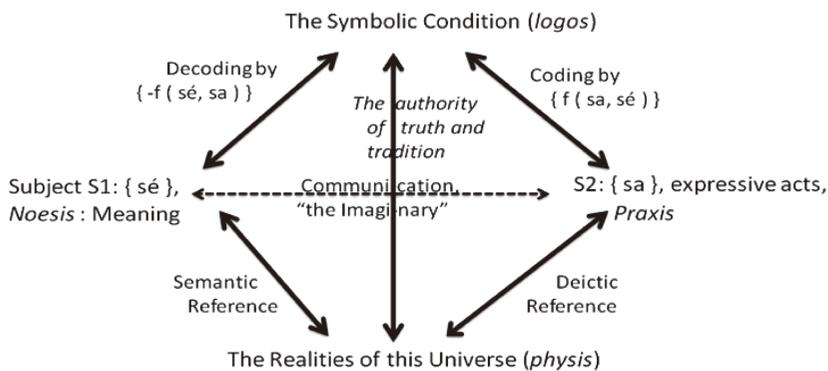
Furthermore, this symbolic instance, which we must postulate as a universal condition for the existence of communicative subjectivity, has to be endowed with *authority*: it will allow any other (S2) of any subject (S1) to communicate with sincerity about reality, because it offers concepts potentially containing *truth* in certain ways. Otherwise we would not be inclined to rely on it. The symbolic instance, that is, the principle of there being some semiotic function, known or unknown, or an open possibility of there having been or there some time in the future emerging a semiotic function hypothetically allowing me to understand what S2 is now trying to tell me (S1), that instance—when identified—is most often instantiated as a named and revered entity, such as a language, an ethnic communitary cultural routine, a national habit, a religious code, or some other entity that can motivate emotional and “identitary” affinity in the subjects. Emotions—we must remember—are truth sensitive; when positive, they tend to treat their targets, however abstract, as holding values or particularly valuable insights about reality; and when negative, they tend to treat them as enemies of those values or insights. Symbolicity, in this sense, is thus a universal transcendent *logos*—comparable to the philosophical gods of the rationalists. So between symbolicity and reality, there exists in the scope of our communicative minds a constitutive axis. For example, people love the native language they are speaking. They feel that it embodies their essence and values and makes these values important to their relation to reality. The notions revered by canonical discourse and literature in their language are somehow placed in a privileged relation to the world: as keys to the meaning of life in this universe. This might sound absurd and look insane from the outside—as when we are confronted with the absolute

beliefs of a culture foreign to us—but is easy to recognize in our own feelings toward the *logos* we are living in ourselves (cf. stereotypes like the following: French intellectuals believing that French is a rational language, because of its “clear” grammar; Anglosaxons believing that their globalized jargons somehow contain lessons for the world; Israelis believing that their ethnic identity conveys superior intelligence, etc.). We may not like to acknowledge this strange semiotic effect, close to nonsense, but unfortunately, it is constitutive to the experience of intersubjectivity. I am not defending it here, just letting it be part of the metaphysical structure of the mind’s relation to the world.⁶⁸ As Descartes mentioned, we do not need to prove the same truths over and over again, once established; we just deposit them in our memory, that is, in a corner of *logos*, the treasury of “what can be known” and “what truly deserves to be remembered”. It helps to write them down, since writing is an eminent means of transcendently signifying transcendent truths—letting ideas transcend individual lives and situations, *in casu* the rationalist fathers using a “transcendent” language such as Latin. Writing could be mathematical, computational, linguistic, musical, or other—it will always be felt as being part of “the symbolic” (French: *le symbolique*).⁶⁹ Literary writing, scientific, mathematical writing, and religious or philosophical writing are our principal forms of intellectual creation. The concept of *écriture* (writing) has therefore been generalized and now covers artful film making (Truffaut’s “*écriture*”), dance, fashion, and even political practice (the “*écriture*” of this or that politician, sometimes heard in contemporary feminism). This concept appears to be purely formal, conventional, arbitrary, and utterly empty; but *formality is in fact already symbolicity*⁷⁰, and only works—serves communication—if inherently endowed with the epistemic force that characterizes *logos*: the authority of truth.

4.3 The metaphysics of meaning

In this sense, the ontology of meaning can be inscribed in the model we have proposed in order to grasp the fundamentals of rationalism. The result may look like the following graph:

Figure 5. A quasi-rationalist model of the metaphysics of communicative meaning

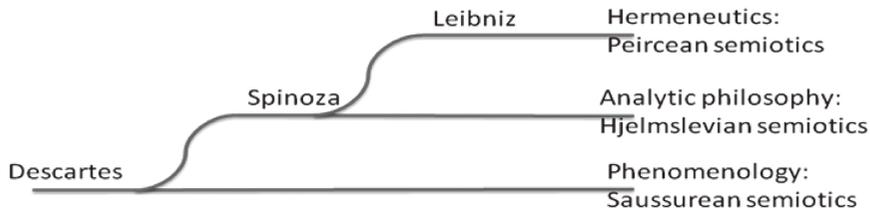


The constitutive axis, known from the former models, still connects an “absolute” version of *res cogitans*, the symbolic instance or condition, and an infinite version of *res extensa*, the realities that subjects will refer to, deictically in the course of their expressive acts, and semantically in the course of their interpretative semantic acts. The epistemic axis is the communicative dimension that connects subjects on each side of the semiotic functions (f and –f) implied in the interaction, that is, in the shared act of sense-making that entitles us to identify signified contents as occurrences of *meaning*.

It is now possible to ask a question of interest to modern semiotics: could the actual varieties of models of meaning and signification be related or even determined by their metaphysical presuppositions?

If actual academic theories worked according to clear-cut lines and categories, we could end up with something like the following historical distribution (Fig. 6). The *analytic* line would include explicit logical positivists such as the glossematician Louis Hjelmslev and the French structural semiotics he inspired, around the semantic theorist A.-J. Greimas (semiotics is seen as a logical “metalanguage”).⁷¹ The *hermeneutic* line would rather correspond to E. Cassirer’s and the American “pragmaticist” C. S. Peirce’s style of thinking⁷² (which is genetic and based on the idea that everything in the world makes sense, we just need a lot of sign types to realize it). Finally, the *phenomenological* semiotics (or “semiology”) of the linguist F. de Saussure and his followers, maybe including both M. Merleau-Ponty and N. Chomsky (to whom the semiotic, or rather the linguistic function is a specific proto-social, conceptual condition built into human biology):

Figure 6



Contemporary cognitive linguistics seems to cover the entire range of conceptual styles. Language, typically, is either treated as just one of many evolving semiotic systems in nature and culture (the hermeneutic view), as a system that offers a possibly distorting “window into the mind” and nothing much else, unless supplemented by gestural-behavioral studies (the analytic view), or as a system that structurally and substantially supports human shared thinking and experiencing, schematizing and categorizing (the phenomenological view).

Meaning is, however, the result of an open process in the intersubjective imaginary dimension, and is based on actual experience, bodily perceptual conditions, and general intellectual dispositions in human minds. This is my view and what I take to be the Cartesian view. Meaning is then understood as a flow of contents of human consciousness, thus based on the dualistic idea that consciousness 1) exists, 2) is the product of nervous

systems in our and other species, 3) has contents that are representations of possible or impossible things and states in physical, social, mental or historical reality, so that 4) meaning is a necessary condition for knowledge of the world to exist, because 5) some meaningful representations can be true of some things or states in the world; 6) in particular, formal models can be true of either other immaterial representations (such as cultural facts) or of material facts (such as natural laws). Cartesian dualism, of course, does *not* explain *why* there is consciousness, in this sense, nor *how* it comes into being; it just acknowledges its existence from the start. It does not exclude but rather encourage scientific research on the origins and mechanisms of consciousness. While welcoming such research, empirical and theoretical, it does consider prefabricated speculative explanations of the monistic kind that cancel the open question of the factual constitution of consciousness by *a priori* attributing consciousness or proto-consciousness to the universe in general, including particles, atoms, molecules, tables and chairs, mountains, oceans, planets, stars, solar systems, galaxies, etc. Spinoza's and Leibniz' metaphysical systems are prominent examples of such monistic explanations.⁷³ If these systems were on the right track, there would be no need at all to look for neuroscientific knowledge about consciousness. We would already know, as Spinoza and Leibniz thought we did. I think it is better to simply recognize that we do not know, and that we would like to know. We would think that there is something there that can be known, but that it requires much more time, and maybe technology, to clarify what it is.

Meaning, consciousness, and truth: it may be difficult to accept that meaning, understood as the content of consciousness, which is a *local* phenomenon (grounded in nervous systems), should be the “substance” where *global* truths about the world (such as mathematical and physical laws) can be found. It would be easier to think of meaning as a purely psychological phenomenon. But while meaning can indeed locally be treated as a matter of psychology and psychiatry, it transcends this local status by the phenomenological fact that it is *about* things different from itself. *Aboutness* is of course also, in its turn, a difficult notion; however, the transitivity of meaning that the notion refers to is an elementary property of consciousness.⁷⁴ Consciousness is inherently transitive. It “wants” to know things. It is constitutively interrogative. As Descartes writes, it often “wants” this so much that it wants to believe that it already knows. This seems to be happening in metaphysics: we want to understand the relation holding between mind and matter, and may then find it attractive to convince ourselves that we already understand it. But we still don't. I claim that this is the sound dualistic stance to take.

Why is mathematics possible, and why is it useful in the description of many (or maybe all) forms of reality? This was the point of departure of our rationalists, and these questions are still very much on the philosophical agenda today, as particularly precise versions of the general problem of understanding the status of meaning. Mathematical meaning is an eminent example of aboutness; there is a mathematical world that makes some mathematical theorems meaningful and possibly true. Is that mathematical world just the field of a psychology? If not—since such a solution would be too obviously

absurd—then is the mathematical world identical with the field of physics? This would leave out the fields of philosophy, music, literature, religion, unless we subscribe to eliminativist monism.⁷⁵ Thinking as such has a physio-psychological aspect, but its transitivity transcends it; it also transcends the physical field of knowledge, in so far as meaningful statements can be false about the physical world.⁷⁶ The mathematical world is not the physical world.⁷⁷ The world according to thinking is different from, that is, not coincident with, this universe. The world of meaning, including the mathematical world, is thus absolutely *sui generis*, however strange this statement may sound.

However, meaning has to be signified, symbolized. It does not pop up as free-floating bubbles in the air of our physical universe. And as mentioned, the symbolic condition of meaning implies, for us as consciousnesses seeing the world from within, the truth function. Not meaning as such but its semiotic build-up—actual “meaning production”—is what makes it true about the world or some world part: the symbolic status of its signifiers turns them into “world-makers” almost in Nelson Goodman’s sense.⁷⁸

Art: The domain of expressive activities known in many human cultures as *art* may be seen as a field of semiotic practices pursuing an experimental approach to metaphysics. In art, the coding systems underpinning the single expressive acts are unstable, underdetermined, sometimes even mainly absent before the act, which then will have to give clues and invite hypotheses for decoding as part of the act or the object called the “work of art”. In a sense, when this aspect is predominant, as it often is in modern art, artistic performances deliberately trigger perplexity and feelings that may characterise a *metaphysical crisis* in the situation of their realization.⁷⁹

Whether classical or modern, or even ancient or maybe prehistorical, art is a semiotic practice based on signifiers of certain types and used in certain contexts that I would like to shortly and finally discuss here.

What is an expressive activity? The question may be treated by considering two prominent forms of expressive activity, writing and art. *Writing*—for example in mathematics, logic, music, literature—consists in depositing discrete signs of certain types on a bounded, framed surface, thus obtaining a “text”: a linear series of mental instructions addressing a *reader* and giving rise to a process of reading that results in an intersubjective transfer of knowledge (in a large sense)—or simply supporting the writer’s own memory and thinking. Any reading of something written requires a mental actualisation of the conventions creating the semiotic function implied. The normativity of this actualisation is part of the communicative contract; respecting the norms in question is experienced as strengthening the chances of success of the act, including the probability of finding new ideas or knowledge through the act: we do not communicate just to share but also to think, change, develop, construct or discover.⁸⁰ This effect—say, the “creativity of writing”—is again due to the constitutive relation holding between the symbolic instance and reality. It is a genuinely metaphysical phenomenon.

Compared to writing as such, *art* as activity—pictorial, graphic, sculptural, architectural, theatrical, musical, choreographic, literary (poetic, narrative), etc.—likewise consists in

producing certain signs within the framed space or time of a supporting scenario, obtaining a “text”, a spatial work of art or a temporal performance. This product also invites a process of “reading”, a receptive experience including, as in the reading-of-writing, a series of mental instructions or clues. But in this case, the symbolic condition of a stable communication of content is less clear, and normativity, if established, is most often controversial. In art, the fixation of stable codes seems to be counter-productive and to lower the value, or beauty, or importance, attributed to the expressive work. If this is true, it may explain the historical drive that animates art history, favoring changes of styles over normative stability across our centuries of deliberate aesthetics, and no doubt, earlier, across our millenia. Every “new” way, style or method of painting probably has been driven by a feeling of some sort of new truth behind the new beauty.

So there is a frame and some expressive activity happening within it, for example, certain graphic traits or brush strokes on a white canvas or a sheet of paper. Outside the framed *expressive space* there is of course a context of communication, and notably a *meaning space*. This meaning space is a mental space which will ideally be shared by S1 and S2⁸¹, if the semiosis is completely successful. Let us imagine a point (x, y) somewhere in an expressive 2D space, and let us allow it to vary minimally, by (dx, dy) , in some direction. If this variation creates a qualitative change, a boundary crossing, in the meaning space, we will call the expressive variation *critical*. It is now possible to assess the variable *criticality* of the sign’s semiotic function by delta-scanning the expressive space in this way and noticing the effects in the meaning space of the sign. If only one letter, e.g. A, is written on a white page, the criticality of this sign is minimal, since all delta-variations in the white areas of the expressive space are uncritical, whereas only those variations that cross the graphic lines of the letter are critical, since they mean that something significant is going on in the meaning space where A-ness is constructed based on boundaries between graphemes. By contrast, an everywhere sharp photo will be maximally critical, because all variations through the scan will be significant: maximal criticality, or *density*, Nelson Goodman’s term, is characteristic of such signs, which are called *iconic*.⁸² Images are iconic, or icons, in this sense. Minimally critical signs like letters, by contrast, are called “arbitrary” or *symbolic*⁸³; they possess certain very interesting features. Instead of or besides carrying a certain, limited, normally small load of individual meaning, they combine to form new and much stronger units of meaning; so they entertain important mutual and constrained syntactic relations within expressive units that are also signs. They form paradigms of relatively few members, sort of “closed classes” or “morphological” inventars. Since they have syntax and morphology in this sense, they can be considered to have “grammars”.

Icons, maximally critical signs, do not have such grammars. They do not imply an inter-iconic syntax nor an inter-iconic morphology, but signify through their very criticality: an image means what it shows. Instead of a strongly coded, “conventional”, grammatical, symbolic anchoring, images have a perceptual, visually based cognitive principle of sense-making, including schemas such as 3D space, figure–ground,

depth perspective, gravitational verticality, chromatic continuity, brightness, shadows and shading, object bounding, object and configuration constancy, etc. Just as the “conventional” code of the symbols of writing, this iconic cognitive anchoring functions as a principle of symbolic stability; and its symbolicity implies the same truth function. This is why we feel that showing what we see is somehow manifesting the truth or even essence of what is there—as naïve empiricism has it—and what is “evident”.⁸⁴

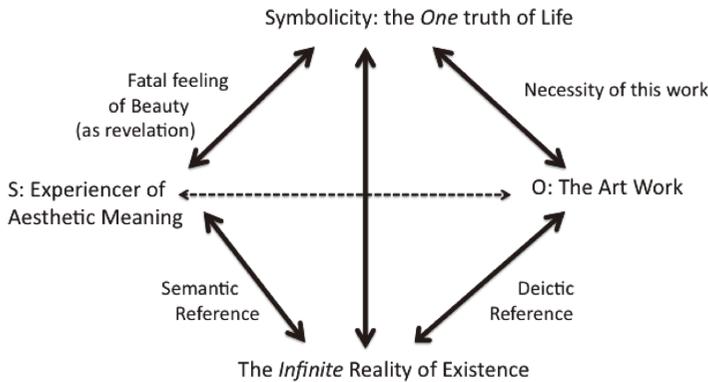
Since both “symbols” (“arbitrary” signs) and iconic signs are symbolically stable, they are both crucially active in social communication, and no society would exist without their massive use. Texts and images carry the entire weight of human civilizations equipped with calendars (roughly, the latest 8.000 years). Thanks to these semiotic functions truth becomes doxa and beauty becomes decorum in social life.

But there are two domains of social activity where truth is *not* doxa, and beauty is *not* decorum, namely science and art. Those are the domains in which signification loses its stable level of criticality. Symbols become somewhat iconic, and icons become somewhat symbolic, as in diagrams and graffiti, scribbling, doodling, inventive writing, and creative imaging. The criticality within one and the same work and work frame becomes heterogeneous, uneven, which means that the communication becomes uncertain, but that at the same time the appeal to the symbolic instance becomes strong. It is trivial now to say that art offers an access to truth or the Truth of Being (as in Heidegger), especially since modern artists (Kandinsky, Mondrian, Rothko...) abound in making such ontological, most often spiritualistic statements. What really happens in artistic semiosis is slightly different: the unstable criticality—which drives art history toward “newness”, hence instability, as soon as a style becomes a stable norm—actualizes the fundamental metaphysical diamond structure, which we know from our readings in rationalism, but maybe now can start to see as springing from a much deeper structure responsible for human semiotics altogether. Art activates this formation in human minds and, when it excels, which it does by achieving a potent tension between the expressive (frame, composition, signifying elements) and the unexpressive (critically unstable, potentially chaotic) parts of the opus, activates a significant emotional orientation of our minds toward the symbolic instance *as such*, that is, as an instance that grounds the very *existence of truths* about our reality. The feeling of the existence of truths about our reality is a fundamental condition for continuing to live. What the truths in question may be is less important than this intimate conviction that they exist. In this sense, the metaphysical “message” or rather effect of art is vital.

Since the internal composition of the work of art has to be heterogeneous—in order to establish the unstable criticality of its semiosis—the global expression is always felt as being *unique*. The uniqueness, or singularity, or “oneness”, of a painting, a musical or theatrical performance, or a literary text, etc., is arguably a basic feature of the aesthetic object as such, and contributes to the essentially metaphysical meaning of the aesthetic experience, which I am finally calling attention to, by producing a curious “Spinozan” effect: the art work “must” be as it is, by an intuitively felt necessity that artists often refer

to, and that experiencers tend to implicitly presuppose. The opus *must* be as it is—even if we do not understand why this is so, and what the constraints are that made it necessarily be so. This “mystical” aesthetic necessitarianism inscribes the object in a structure corresponding to the one shown in Figure 5 above, in the position of S2. The “oneness” of the work and the “infiniteness” of its referential sense unfold on the constitutional axis. The forceful experience of the truth-in-the-beauty of “strong” art is part of the reception, as is the semantic openness, which can make the experiencer feel that a piece of art means the infinity of the world. What we are touching upon here is often avoided in academic criticism but is evident in the artist’s perspective of living with metaphysics in front of oneself, so to speak. The structure here described is thus the following (Fig. 7):

Figure 7. A model of the metaphysics of art



It does not follow from this analysis, of course, that rationalism as expressed in the philosophies of post-renaissance giants such as Descartes, Spinoza, and Leibniz, has shaped the universal metaphysical semiotics of aesthetic phenomenology, but instead that these versions of what we now call rationalism, and their consequences through the modern history of ideas, are—or may be—versions of an underlying aesthetic organisation of meaning that simply unfolds what it is like for a human being, across cultures and ages, to feel, live, and think the world as seen from within.

Notes

- 1 Delattre, 1953, p. 913.
- 2 Rodis-Lewis, 1995.
- 3 See Descartes, 1996.
- 4 René Descartes, *Meditations on First Philosophy, With Selections from the Objections and Replies*. A Latin-English Edition, edited and translated by John Cottingham, Cambridge: Cambridge University Press, 2013. In the following, I refer to this source as JC.—Descartes’ Latin text was translated to the French by the Duke of Luynes 1641, and a second version corrected by Descartes himself was published in 1647 under the title: *Méditations métaphysiques touchant la première philosophie dans lesquelles l’existence de Dieu et la*

- distinction réelle entre l'âme et le corps de l'homme sont démontrées.* This text is the ordinary reference in French philosophy.
- 5 Dreams are the first problem discussed in the text, and also the last question treated in the concluding part of the last Meditation.
 - 6 The thematisation of extension as such, as the distinctive attribute of a substance, versus the attributes of other substances, is entirely new in philosophy.
 - 7 “*Philosophy [i.e. physics] is written in this grand book—I mean the universe—which stands continually open to our gaze, but it cannot be understood unless one first learns to comprehend the language and interpret the characters in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word of it; without these, one is wandering around in a dark labyrinth.*” Galileo Galilei, *The Assayer*, as translated by Stillman Drake (1957), in *Discoveries and Opinions of Galileo*, pp. 237-238.
 - 8 “... by a body I understand whatever has a determinable shape and a definable location and can occupy a space in such a way as to exclude any other body; it can be perceived by touch, sight, hearing, taste or smell...” (JC 35)
 - 9 JC prefers the title: *The existence of God*.
 - 10 “Eminently”, a term referring to the idea that things can cause other things if they are on a higher level of perfection, reality and power than what they create. They are then *eminent* in relation to these other things.
 - 11 Of course Descartes was inspired by the Benedictine Anselm of Canterbury’s ontological argument for the existence of God (in Anselm’s 1077 treatise *Proslogion*). The idea of God contains perfection, and perfection must include existence. We can think of God as more than perfect by adding non-existence to his concept, but that would entail a contradiction. Therefore God exists. In modern times, G. Frege protests by explaining that existence is a “first-order predicate”, to be used about individual things, whereas God as a concept would need a “second-order predicate”. Anselm is an analytic philosopher *avant la lettre*.
 - 12 In their treatise on mathematical cognition, G. Lakoff and R. Núñez (2000) defend the hypothesis of math being derived from spatial cognition and metaphor. They also dismiss the idea that mathematics is a natural science. “There is no way to know whether theorems proved by human mathematicians have any objective truth, external to human beings or any other beings.” (p. 2) “... Or is there, as Platonists have suggested, a disembodied mathematics transcending all bodies and minds and structuring the universe—this universe and every possible universe?” Such “platonism” is categorically rejected.—It occurs to me that there may be a confusion here, in that human symbolization and imagery used for conceptualization of mathematical matters are identified with those matters themselves. My other objection is that mathematical cognition, an interesting issue as such, is more likely to originate in human symbolizations and conceptualizations of time (for music, dance, and calendar calculations); see Brandt, 2012.
 - 13 *De rerum materialium existentia, et reali mentis a corpore distinctione*. The French translation has “...entre l’âme et le corps de l’homme”, so the English version presented in (ed.) Weissman (1996), which was translated from the French in 1911, says “...between the Soul

- and Body of Man”.
- 14 Note by JC on the specific meaning of this term here: the supposed faculty which integrates the data from the five specialized senses.
- 15 The Cottingham edition (2013) presents an ample selection of these replies, pp. 126-239. They are often very instructive, so we could have continued our exploration, which the reader is encouraged to do.
- 16 Descartes’ last work, published in 1649, was his *Traité des passions*, where he explains that there are six basic “passions”—admiration, love, hatred, desire, joy and sadness—that emanate from the body, and which the mind can govern. Mind and body are indeed “intermingled”.
- 17 If we compare this ontology to the one I proposed in Fig. 1 in the second essay, *supra*, we may map the phenomenological axis to the phenomenological cycle involving levels II and III and the constitutive vertical axis to the levels I and IV. Which may show that I am intuitively almost a metaphysical Cartesian: “God” is now “logos”.
- 18 The concept of God in Descartes’ writings was far enough from what the Catholic Church could accept to make life in France difficult for him and his followers.
- 19 W. N. A. Klever, professor of philosophy at the Erasmus University of Rotterdam, co-founder and chief editor of *Studia Spinozana*, offers an interestingly new account of Spinoza’s “life and works” in (ed.) Don Garrett, 1996. I will follow his presentation here.
- 20 The contemporary repugnance to Descartes (Zeki, Damasio, Changeux) and adoration of Spinoza seems curiously and ironically to reproduce the attitude of the orthodox community toward the young Cartesian Spinoza.—Klever (op. Cit. 22) mentions a report by the Spanish Inquisition in which a monk in 1659 refers to a stay in Amsterdam where he met with two excommunicated Jewish men, Dr. Juan de Prado and “a fellow named De Espinosa”; they said that they rejected the Law as false, and claimed “that the soul died with the bodies and that there is no God other than philosophically (*ni havia Dios sino filosofalmente*).”
- 21 Klever, 1996, p. 23.
- 22 Klever, 1996, p. 26: “The works of Van den Enden contain a political theory which is in fact the same as the one worked out by Spinoza in his *Theological-Political Treatise* and *Political Treatise*.”
- 23 Thus, in his *Theological-Political Treatise*, Spinoza defends the idea of applying the Cartesian natural light to the reading of the Scriptures and not believe in anything not clearly demonstrated, such as the existence of miracles. Better knowledge of nature is the only way to better knowledge of God. It would be “atheism” to believe in miracles, as he ironically notes.
- 24 Klever, 1996, op. cit. pp. 29-32. Meyer seems to be the author of the formula of “arts and sciences”, including grammar and physics, that defines faculties in modern American universities.
- 25 Klever, 1996, pp. 34-35.
- 26 Klever 1996, (p. 47) comments: “... Tschirnhaus credits Spinoza—and this is completely new in comparison with other sources [except Leibniz, as we just saw]—with a kind of Pythagoreanism, implying that souls in a certain sense transmigrate from one form of matter to another. This idea is not entirely alien to the theory of the mind’s eternity, based on the

- adequate ideas of the ‘fixed and eternal things’ of extension. It is likely that the comparison with Pythagoras’s transmigration theory originates from Spinoza himself, who probably had recognized the similarity in his reading of Ovid’s *Metamorphoses* (Book XV), one of his classical sources.” In fact, mental migration may even be a crucial part of Spinoza’s epistemology: for us to understand something is to receive the mind of that something in our mind. No representation is neither needed nor wanted in cognition, according to this view.
- 27 Curiously, he did not make any scientific discoveries; his only text on a scientific problem is a study of rainbows. See M. J. Petry, 1985. Biographers doubt the authenticity of this anonymous work.
 - 28 See J. J. Katz, 1990.
 - 29 Spinoza’s *Opera Posthuma*, published in 1677, was officially banned in 1678 in the States of Holland and West-Friesland from trading, selling, printing, and translating, deemed to be a “profane, atheistic, and blasphemous book”. The religious tone of the scientific doctrine may have worsened the Christian reactions.
 - 30 Empiricism, logical positivism, logical empiricism, analytical philosophy, philosophy of language, philosophy of mind, cognitive philosophy of the embodied mind—all are inheritants of Spinoza’s naturalism.
 - 31 This point is essential, even if—just like philosophy and science—logic and mathematics were not theoretically distinguished as they became during and after the Enlightenment. In modern Vienna Circle Spinozism, rooted in Russell & Whitehead’s *Principia Mathematica*, they are again believed to be one, even if the unification never worked out. They “must” be one, because logic “must” be a property of the physical world seen as “divine nature”.
 - 32 This is also what the earlier manuscript, *Tractatus de intellectus emendatione*, promises. Here, the presentation is by contrast readable as an ongoing argumentation. Its translation by R. H. M. Elwes can be found here: <http://www.yesselman.com/teielwes.htm>
 - 33 I am using R. H. M. Elwes’ translation of *Ethica Ordine Geometrico Demonstrata*, from 1883, republished by the Gutenberg Project as Etext in 2003.
 - 34 The Latin text says *essence*, not “reality”: ...quod autem absolute infinitum est, ad ejus essentiam pertinet, quicquid *essentiam* exprimit, & negationem nullam involvit.” (Pautrat, 1999, p. 16).
 - 35 Definition VIII is self-referential. It defines eternity by that which is eternal.
 - 36 Therefore only God is free. This is an old Scholastic discussion about the causes of all causes (cf. Thomas Aquinas, *Summa Theologica*). In this sense, “determination” can also just mean causation. The ambiguity can be found in the use of the term in a modern Spinozan philosopher: C. S. Peirce.
 - 37 I am checking with the Latin text in the French version. Pautrat, 1999.
 - 38 Proof: A true idea must agree with its object (Ax. vi.) ; in other words (obviously), that which is contained in the intellect in representation must necessarily be granted in nature. [...].
 - 39 See also Brandt, 2004, Chap. 3 on modality in four domains: “root”, deontic, epistemic and “speech act”.
 - 40 “Man” is the generic category name, and “a man” is a singular exemplar. “Man” would still be

a category, if there were no men.

- 41 All italics in the following abridged version of Part II are mine. I abbreviate by leaving out most proofs and some notes—those that do not tell the reader much about the thinking of the author. All quoted proofs are in italics, to ease the reading. —I will allow myself to intervene by throwing in comments here and there, introduced by: Me: . . . Reading is always dialogue anyway.
- 42 Third Meditation: “For example, there are two different ideas of the sun which I find in me. One of them, which is acquired as it were from the senses and which is a prime example of an idea which I reckon to come from an external source, makes the sun appear very small. The other idea is based on astronomical reasoning, that is, it is derived from certain notions which are innate in me (or else it is constructed by me in some other way), and this idea shows the sun to be several times larger than the earth. Obviously both these ideas cannot resemble the sun which exists outside me; and reason persuades me that the idea which seems to have emanated most directly from the sun itself has in fact no resemblance to it at all. / All these considerations are enough to establish that it is not reliable judgement but merely some blind impulse that has made me believe up till now that there exist things distinct from myself which transmit to me ideas or images of themselves through the sense organs or in some other way.” (JC 55-57) The last sentence could have been Descartes’ answer to Spinoza on this point.
- 43 Edwin Curley’s translation of the *Ethica* (1996) offers a text that stays very close to the one I am using (R. H. M. Elwes, Gutenberg Etext). His edition has a useful introduction by Stuart Hampshire.
- 44 The great modern Spinozan philosopher Ludwig Wittgenstein, who was the main inspiration, with B. Russell and G. E. Moore, of the Vienna Circle of analytic philosophy is presented, in the Cambridge Dictionary of Philosophy (1995) by John Heil, who writes: “Analysis, as practiced by Russell and Moore, concerned not language per se, but concepts and propositions. In their eyes, while it did not exhaust the domain of philosophy, *analysis* provided a vital tool for laying bare the logical form of reality. Wittgenstein, in the *Tractatus Logico-Philosophicus* (1921), contended, though obliquely, that the structure of language reveals the structure of the world; every meaningful sentence is analyzable into atomic constituents that designate the fine-grained constituents of reality.”
- 45 The Chomskyan linguist and Cartesian philosopher Jerrold J. Katz writes, in the introduction to his *Metaphysics of Meaning* (1990): “Wittgenstein’s critique of theories of meaning has been and still is a significant force behind the revival of naturalism in Anglo-American philosophy during this century. America, of course, had its own naturalist philosophers. Although they contributed importantly to the tradition of naturalism in American philosophy, they did so more by way of entrenching and articulating the naturalist position than by way of providing major arguments that, like many of Wittgenstein’s, significantly strengthen the contemporary naturalist’s arsenal. Thus the arguments of American naturalists today, e.g., those of Quine, Goodman, and Putnam, are, in general, of a linguistic cast and, even in some matters of detail, are more like Wittgenstein’s arguments than like those of Santayana, Woodbridge, Dewey, and Ernest Nagel. This, I think, is no accident. We can trace a line of development from Wittgenstein to philosophers like Schlick and Carnap and from them to

philosophers like Quine and from them and Quine to philosophers like Goodman and Putnam. / As we have seen, the *Tractatus* took the naturalistic view that what can be said can be said in the propositions of natural science. Logical Positivists like Schlick were deeply influenced by both the naturalistic outlook and the logico-linguistic form of Wittgenstein's early thought. They opposed the claims of philosophers that there are things outside the causal nexus which are, as a consequence, beyond the reach of the empirical methods of natural science. Such Logical Positivists made use of Wittgenstein's ideas to argue against the claims of philosophers like Husserl that our logical, mathematical, and metaphysical knowledge is about non-natural objects and rests on a faculty of intuition. The aim of Logical Positivism can, in large part, be seen as a use of Frege's, Russell's, and Wittgenstein's contributions to logic and the philosophy of logic to modernize Hume's naturalism and empiricism. Hume's vague remarks about relations of ideas were to be explicated on the basis of such logical and philosophical contributions. His equally vague characterization of matters of fact was to be explicated on the basis of the criterion of empirical significance which the Positivists set themselves the task of framing with the new technical apparatus from logic." (p. 10). Katz then tries to invalidate Wittgenstein's arguments against meaning. The linguist needs a Cartesian meaning theory in order to make sense of doing *semantic* analysis, as in Katz, 1972. Linguistic semantics, the study of "semantic competence", Katz's Chomskyan term, must distinguish signified meaning from referential meaning. So must cognitive semantics.

- 46 As we know, he had hoped to meet Spinoza there. The latter, however, did not trust him politically, and the times were harsh on rationalism.
- 47 The analysis of continua in the physical world, Leibniz thought, would be matched by an analysis of micro-perceptions in the spiritual world, the two being analogous and parallel in substance.
- 48 I am using Émile Boutroux's annotated edition of the *Monadology* and his very informative introductory "Exposition du système de Leibnitz" from 1880. See Leibnitz, 1987. (Leibnitz is Boutroux's spelling).
- 49 This category of course recalls the notion of intuition in Spinoza's epistemology.
- 50 In Greek, *monás* means unit. The term appears in Giordano Bruno's philosophy with the sense of minimal unit of substance, or atom.
- 51 *La monadologie* was written in Vienna for Prince Eugene of Savoy, who kept his copy strictly for himself. Later in the century, a German and a Latin translation appeared; the French original was not published until 1840. The Scottish philosopher Robert Latta (1865 – 1932) translated it very competently (with annotations) in 1898. This is the version I will be quoting here, besides Boutroux's French edition when needed. Jonathan Bennett also has translated the text (2004, 2007, see: <http://www.earlymoderntexts.com/>)—or rather, he rewrote it so freely that it cannot be called a translation.
- 52 Again: all italics are mine.
- 53 In his *Historical and Critical Dictionary* (1697/1702), Pierre Bayle had in fact criticized Leibniz' idea of diversified operations in the simple soul as result of the activity received from its Creator; he saw that idea as a contradiction.

- 54 There is no explanation to be found in the text. But the promise sounds like a sudden outburst of Spinozan theory.
- 55 Leibniz' concept of modality as expressed here gave rise to a modern semantic formalization in Greimas and Courtés, 1979: article "Alethiological modalities (modalités aléthiques)".
- 56 David Chalmers, in *The Character of Consciousness* (2010), interestingly proposes a similar view of panpsychism in matter. See Tallis, 2011.
- 57 Ermolao Barbaro (1454 – 1493), Italian Renaissance scholar, specialist on Aristotle.
- 58 Hegel was strongly inspired by Leibniz. Through him, we may see the thinking of Karl Marx outlining the idea of a communist society as another City of God serving as a dynamic principle of a human History whose progress and meaningfulness would be the universal striving for such a goal.
- 59 As Boutroux recalls in a note (op. cit. p. 185) to this paragraph, Descartes thinks that the mind and the body affect each other in many ways, but that the mind cannot produce bodily movement; what it does is *directing* the movement occurring (Descartes, 1649).
- 60 Leibniz of course takes this concept from Augustine's *De civitate Dei*, On the City of God. But since Leibniz does not distinguish between the "city of man" and the "city of God", he might think of a slightly more worldly version, a state of human civilisation dominated by the Christian faith.
- 61 The Leibnizian phenomenology would be the history of the spirit from monad to the city of God. Hegel's *Phenomenology of Spirit* (1807) uses the term phenomenology in the sense of a history of appearance.
- 62 Spinoza would prefer to say that all such representations are false.
- 63 The importance of Berkeley, Hume, Locke, and the British idealists of the 19th century must of course be acknowledged if we want a real unfolding of the philosophical landscape. My guess is that the ontological model proposed in this short essay could be submitted to further variations describing these unfoldings. The British philosophers of the Enlightenment would be found on the line starting in Spinoza's version of rationalism.
- 64 The French philosopher Michel Serres (see Serres, 1968) whose work on communication networks—the volumes of *Hermès*—is directly inspired by Leibniz, considers the German thinker as the greatest and most creative spirit of the Western world. He amusingly explains (in a short interview from 2013: <http://www.profencampagne.com/article-internet-c-est-vraiment-du-leibniz-sans-dieu-michel-serres-120876632.html>) that the monadology corresponds to the internet or that the internet is a monadology without God. The monads are the users, and the internet itself is God. This is the best of all possible worlds in a mathematical sense, because it is mathematically "better", i.e. simpler, to connect all points in a network of more than three nodes to one supernode, instead of interconnecting them. With four nodes we would get six connections, with five nodes ten connections, and with more nodes, the network would rapidly explode.
- 65 This is the notable case of J. Fodor and J. Katz, whose thinking stays closer to Noam Chomsky's "Cartesian linguistics" (Chomsky, 1966/2003) than the Californian schools of cognitive Spinozan "embodiment" and philosophy "in the flesh" (Lakoff & Johnson, 1999, reviewed by Sowa, 1999).

- 66 “The *I think* must be able to accompany all my representations: for otherwise something would be represented in me that could not be thought at all, which is as much as to say that the representation would either be impossible or else at least would be nothing to me.” (§16 of the *Transcendental Deduction of the Categories*, in the second edition of the *Critique of Pure Reason*, B131-32.)
- 67 Analytic philosophy at least inherited the analytic/synthetic distinction from Kant.
- 68 The feeling that what we fill into the symbolic instance is a “system” predestined to anchor us in some sort of truth about the real world may be the elementary motive behind theories of predetermination such as the one Leibniz developed. The modern Leibnizean Ernst Cassirer based his “philosophy of the *symbolic forms*” (1923, 1925, 1929) on a similar idea, namely that the mythical, representative or significative forms of symbolicity emerge successively, genetically, as historical approximations to truth.
- 69 The notion of *le symbolique*—in the sense I am exploiting here—was without any doubt the most important contribution to philosophical and semiotic thinking that Jacques Lacan’s well-known but often otherwise obscure version of psychoanalytic theory ever made.
- 70 Symbolicity as a formal instance is related to *rituality*, formal behavior as such. When I first learned differential calculus, in high school, I did not immediately find the writing intuitively satisfying or even intelligible, but our teacher advised us: “Just write it like this, following the rules, and everything will be all right”. Mathematic writing, as any other writing, can be seen as a form of ritual. Inversely, rituality easily takes on the authority of logos.
- 71 See Brandt, 2015. The semantics of analytic philosophy is normally truth-conditional or use-conditional: the meaning of a proposition is the collection of conditions of its being true. The meaning of an expression is the collection of conditions of its being used. The Paris school version is slightly different: the meaning of an expression is its being the object of semiotic metalanguage, i.e. fitting into the “immanent” system of the semiotic metalanguage.
- 72 Peirce was notoriously inspired by Leibniz’ continuism. See Illaregui and Nubiola, 1994. He published what was called a “new monadology” in his *Leibniz rewritten* in 1899.
- 73 Gluck (2007) surprisingly proposes the view that while Spinoza’s “neutral monism” is good metaphysics for the natural sciences, Descartes’ dualism is good for the social sciences. Sciences in general should therefore, in this view, be related to different metaphysical forms of thinking, according to their different fields of study. I would question the utility of Gluck’s differentiation, on the grounds that it introduces a strange pragmatization of metaphysics—a sort of metaphysics *à la carte*.
- 74 By the “transitivity of meaning” I mean the fact that it projects in front of itself a referent that it is about, like a direct object of a transitive verb in the grammar of languages.
- 75 The “neuro-philosophers” Patricia and Paul Churchland may be strongly inclined to endorse this solution.
- 76 Example: the idea that illnesses are due to the sins of the patient is highly meaningful in some religions but false in medicine as a physical discipline. Fantastic narratives such as O. Wilde’s *The Picture of Dorian Gray* may illustrate a corresponding idea.
- 77 The specific speed of light in this universe is not a mathematical necessity. Conversely, prime

numbers are not physical necessities.—Leibniz would probably say that since our world is one of all possible worlds, our *physical* world is among the *mathematically* possible worlds. Today, he might have added that the latter are among the *semiotically* possible worlds. Personally, I would vote for the idea that the mathematical world is larger than and includes the physical world. The semiotic world may then be something in between.

- 78 Henry Nelson Goodman, Chomsky’s professor, who despite his analytic philosophy was sensitive to metaphysical issues, may have intuited something like the “veri-functional” effect of symbolicity I am discussing here. He explains in *Ways of Worldmaking* (1978) that since symbolizing is referring, in a large sense, what is referred to constitutes a world, so symbolizing is always world-making. Truth is then just the fact of referring to the actual world, not to any other world. I suspect that Nelson Goodman’s philosophy has admitted some inspiration from Leibniz on this point, which importantly determines his aesthetics. My view of the symbolic truth function is more compulsively performative; we feel that symbolic systems simply *must* somehow be referentially linked to this world, our world, as if they were magical or rather had secret access to its principles.
- 79 Georges Bataille (1955) describes and discusses the violent reactions to Edouard Manet’s paintings, especially his *Olympia* and *Déjeuner sur l’herbe*, in terms that may correspond to such a metaphysical crisis, involving challenges to sacredness and authority.
- 80 This is particularly evident in mathematical writing, as testified by the history of mathematics.
- 81 S1 and S2 in the sense of Fig. 5 above.
- 82 In fact, the maximally dense sign would be your image in the mirror, if 1) you could focus on all parts of the surface at once, and 2) it were a sign, and not a non-intentional, hence non-expressive, optical device. Nelson Goodman does not offer a mathematical version of criticality as a grounding of his notion of density, but it is *grosso modo* the same idea.
- 83 Not a very useful terminology, though, since “symbols” must be sharply distinguished from symbolicity and the symbolic condition.
- 84 The folk and religious feeling or belief that an icon of a person—a picture or a statue—somehow *is* the person it represents, is a dramatic form of this symbolic effect. The symbolic truth function causes the feeling that the referent not only exists but is present in its signifier. The general semiotic view is, as in Peirce’s classification, that icons are signs of what is just *possible*; but if that were true, icons would have no effect in advertising, for example. We would not be able to “tell lies” by showing images.

References (of the three essays)

- Aubin, D. (2004). Forms of explanations in the catastrophe theory of René Thom: Topology, morphogenesis, and structuralism. In M. N. Wise (Ed.), *Growing explanations: Historical perspective on the sciences of complexity* (pp. 95-130). Durham: Duke University Press.
- Audi, R. (Ed.). (1995). *The Cambridge dictionary of philosophy*. Cambridge: Cambridge University Press.
- Bataille, G. (1955). *Manet*. Paris: Ed. Skira.
- Brandt, L. (2013). *The communicative mind. A linguistic exploration of conceptual integration and*

- meaning construction*. Cambridge: Cambridge Scholars.
- Brandt, L., & Brandt, P. A. (2005). Making sense of a blend. A cognitive-semiotic approach to metaphor. *Annual Review of Cognitive Linguistics*, 3, 216-249.
- Brandt, P. A. (2004). *Spaces, domains, and meaning* (European Semiotics Series, No. 4). Berne: Peter Lang Verlag.
- Brandt, P. A. (2012). Numbers are things in time. Seven reflections on the cognitive foundations of “math”. In M. Bockova, M. Danesi, & R. Núñez (Eds.), *Semiotic and cognitive science essays on the nature of mathematics*. Munich: Lincom.
- Brandt, P. A. (in press). From linguistics to semiotics. Or: Hjelmslev’s fortunate error. In *The music of meaning*.
- Buchler, J. (1955). *Philosophical writings of Peirce*. New York: Dover Publications.
- Chang, H. (2012). *Is water H₂O? Evidence, pluralism and realism* (Boston Studies in the Philosophy of Science). Dordrecht: Springer.
- Changeux, J.-P., & Ricoeur, P. (1998). *Ce qui nous fait penser. La nature et la règle*. Paris: Ed. Odile Jacob.
- Chomsky, N. (2009). *Cartesian linguistics. A chapter in the history of rationalist thought* (3rd ed.). Cambridge: Cambridge University Press. (Original work published 1966)
- Clark, A. (2001). *Mindware: An introduction to the philosophy of cognitive science*. Oxford: Oxford University Press.
- Delattre, P. (1953). *Les Établissements des jésuites en France depuis quatre siècles*. Enghien: Inst. Sup. De theologie.
- Deleuze, G., & Félix, G. (1972). *L’anti-Oedipe. Capitalisme et schizophrénie*. Paris: De Minuit.
- Descartes, R. (1649/1996). *Le traité des passions*. Paris: Ed. Du Rocher.
- Descartes, R. (1996). *Discourse on method and meditations on First Philosophy* (D. Weissman, Ed.). New Haven & London: Yale University Press.
- Descartes, R. (2013). *Meditations on First Philosophy, with selections from the objections and replies* (J. Cottingham, Ed. & Trans.). Cambridge: Cambridge University Press.
- Donald, M. (2001). *A mind so rare. The evolution of human consciousness*. New York: Norton.
- Drake, S. (1957). *Discoveries and opinions of Galileo*. New York: Doubleday.
- Fauconnier, G. (1997). *Mappings in thought and language*. Cambridge: Cambridge University Press.
- Fauconnier, G., & Turner, M. (2002). *The way we think. Conceptual blending and the mind’s hidden complexities*. New York: Basic Books.
- Fodor, J. A. (1981 sq.). *Representations. Philosophical essays on the foundations of cognitive science*. Cambridge, Mass.: The MIT Press.
- Fodor, J. A. (2008). *LOT 2. The language of thought revisited*. Oxford: Clarendon Press.
- Garrett, D. (Ed.). (1996). *The Cambridge companion to Spinoza*. Cambridge: Cambridge University Press.
- Gluck, A. L. (2007). *Damasio’s error and Descartes’ truth. An inquiry into epistemology, metaphysics, and consciousness*. Chicago: University of Scranton Press.
- Greimas, A.-J., & Courtés, J. (1979). *Sémiotique. Dictionnaire raisonné de la théorie du langage*.

Paris: Hachette Université.

- Harnad, S. (1990). The symbol grounding problem. *Physica D*, 42, 335-346.
- Hofstadter, D. (2007). *I am a strange loop*. New York: Basic Books.
- Husserl, E. (1929/1960). *Cartesian meditations*. Dordrecht: Kluwer.
- Hvidtfelt Nielsen, K. (2003). *Interpreting Spinoza's arguments: Toward a formal theory of consistent language scepticism: Imitating Ethica*. Lewinston: The Edwin Mellen Press.
- Illaregui, B., & Nubiola, J. (1994). The continuity of continuity: A theme in Leibniz, Peirce and Quine. In *Leibniz und Europa, VI Internationaler Leibniz-Kongress* (pp. 361-371). Hannover: Gottfried-Wilhelm-Leibniz-Gesellschaft e. V.
- James, W. (1890). *The principles of psychology*. New York: Henry Holt .
- Katz, J. J. (1972). *Semantic theory*. New York: Harper & Row Publishers.
- Katz, J. J. (1990). *The metaphysics of meaning*. Cambridge, Mass.: The MIT Press.
- Kirkeboen, G. (2000). Descartes's *Regulae*, mathematics, and modern psychology: "The noblest example of all" in light of Turing's (1936) *On Computable Numbers*. *History of Psychology*, 3(4), 299-325.
- Kirkeboen, G. (2001). Descartes' embodied psychology: Descartes' or Damasio's error? *Journal of the History of the Neurosciences*, 10(2), 173-191.
- Klever, W. N. A. (1996). Spinoza's life and works. In D. Garrett (Ed.), *The Cambridge companion to Spinoza* (pp. 13-60). Cambridge: Cambridge University Press.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to Western thought*. New York: Basic Books.
- Lakoff, G., & Núñez, R. E. (2000). *Where mathematics comes from. How the embodied mind brings mathematics into being*. New York: Basic Books.
- Leibnitz, G. W. (1714/1880/1987). *La Monadologie, Edition annotée, et précédée d'une Exposition du système de Leibnitz. Note terminale sur les principes de la Mécanique dans Descartes et dans Leibnitz par Henri Poincaré* (É. Boutroux, Ed.). Paris: Librairie Delagrave.
- Newell, A., & Simon, H. (1972). *Human problem solving*. Englewood Cliffs, NJ: Prentice Hall.
- Newell, A., & Simon, H. (1976). Computer science as empirical inquiry: Symbols and search. *Communications of the Association for Computing Machinery*, 19(3), 113-126.
- Petry, M. J. (Ed.). (1985). *Spinoza's algebraic calculation of the rainbow & calculation of chances* (International Archives of the History of Ideas, Vol. 108). Leiden: Martinus Nijhoff Publishers.
- Rodis-Lewis, G. (1995). *Descartes, biographie*. Paris: Calman-Lévy.
- Rosenbaum, B., & Sonne, H. (1986). *The language of psychosis*. New York & London: New York University Press.
- Saussure, F. de. (1916/1972). *Cours de linguistique générale* (T. de Mauro, Ed.). Paris: Payot.
- Saussure, F. de. (1962). *Cours de linguistique générale* (C. Bally, A. Sechehayé, & A. Riedlinger, Eds.). Paris: Payot.
- Searle, J. R. (1989). *Minds, brains and science. The 1984 Reith Lectures*. London: Penguin.
- Serres, M. (1968/1982/1990). *Le Système de Leibniz et ses modèles mathématiques*. Paris: Presses Universitaires de France.

- Smith, B. (1995). Formal ontology, common sense and cognitive Science. *International Journal of Human-Computer Studies*, 43, 641-667.
- Smith, B. (1998). The basic tools of formal ontology. In N. Guarino, (Ed.), *Formal ontology in information systems* (pp. 19-28). Amsterdam: IOS Press.
- Sowa, J. F. (1999). Review of Philosophy in the flesh. *Computational Linguistics*, 25(4), 631-634.
- Spinoza, B. (1988/1999). *Ethique démontrée selon l'Ordre Géométrique / Ethica Ordine Geometrico demonstrata* (B. Pautrat, Ed. & Trans.). Paris: Editions du Seuil.
- Spinoza, B. (1996). *Ethics* (E. Curley, Ed. & Trans.). London: Penguin.
- Steels, L. (2007). The symbol grounding problem is solved, so what's next? In M. De Vega, G. Glennberg, & G. Graesser (Eds.), *Symbols, embodiment and meaning* (pp. 223-244). New Haven: Academic Press.
- Sweetser, E. (1990). *From etymology to pragmatics. Metaphorical and cultural aspects of semantic structure*. Cambridge: Cambridge University Press.
- Tallis, R. (2011). What consciousness is not. *The New Atlantis*, 33, 66-91.
- Talmy, L. (2000). *Toward a cognitive semantics* (Vol. 2). Cambridge, Mass.: MIT Press.
- Thom, R. (1990). *Apologie du logos*. Paris: Hachette.
- Øhrstrøm, P., & Hasle, P. (1995). *Temporal logic—From ancient ideas to artificial intelligence* (Studies in Linguistics and Philosophy, Vol. 57). Dordrecht, Boston & London: Kluwer Academic Publishers.

About the author

Per Aage Brandt (pab18@mac.com) is Adjunct Professor at the Department of Cognitive Science of Case Western Reserve University, USA. He studied with Greimas in Paris (Sorbonne Thesis 1987) and was the founder of the Center for Semiotics (1993) at the University of Aarhus, Denmark, and of the Journal *Cognitive Semiotics* (2007). He was a Fellow of the Centre for Advanced Study of the Behavioral Sciences at Stanford, CA. And he is also a poet and a musician.