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Deleuze on Spinoza's Geometrism

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Abstract

In his seminars, Deleuze claims that Spinoza is 'an absolute geometrist'. This article contextualizes, explains and substantiates this aspect of Deleuze's interpretation of Spinoza. I position Deleuze's reading within both the long-running scholarly debate on Spinoza's relationship to mathematics and within the evolution of Deleuze's own relation to Spinoza. Deleuze's idea that Spinoza is a geometrist is shown to consist of three elements. First, according to Spinoza, geometry is more fundamental than arithmetic. Second, Spinoza frees geometry from the realm of fiction and abstract and develops, as Deleuze says, a 'mathematics of the real'. Third, Spinoza finds in geometry a language of univocity, by which he can avoid the equivocity and hierarchy of the Aristotelian worldview.

Keywords: Deleuze; Spinoza; geometrical method; mathematization

In one of his seminars on Spinoza, Deleuze says that Spinoza is a 'pure geometrist' ([1], p. 353) (for citation of these seminars I make use of (but sometimes revise) the translations available at https://deleuze.cla.purdue.edu). Throughout different seminars, Deleuze emphasizes different ways in which geometry is of supreme importance for Spinoza: His conception of infinity is fundamentally geometrical and not numerical ([1], pp. 252, 350, 354); geometry offers him a 'univocal language' ([1], p. 289); and geometry is more fundamental than arithmetic and algebra ([1], pp. 252, 347–353). In *Spinoza. Philosophie pratique* from 1981, Deleuze writes that Spinoza frees geometry from its limitation to fictitious and abstract objects in order to develop a 'mathematics of the real or the concrete' ([2], p. 56) or 'a natural geometry' ([2], p. 57).

As is often the case, Deleuze is not entirely clear on what he means by Spinoza's 'geometrism'. Nor does he provide substantial textual evidence for such an interpretation of Spinoza. This article attempts to flesh out and contextualize this perspective on Spinoza. The context will be provided by positioning Deleuze's reading within two histories: first, the long-running debate on Spinoza's relation to mathematics (elsewhere, I give a more complete overview of this debate [3], and Steenbakkers also provides a useful overview ([4], chap. 5)); and second, the evolution of Deleuze's interpretation of Spinoza. Afterwards, I will examine and try to clarify and substantiate Deleuze's view of Spinoza as a geometrist. The focus is thereby on Deleuze as a teacher of Spinoza's philosophy, rather than Deleuze as a Spinoza-inspired philosopher. The question of how Spinoza's geometrism relates to Deleuze's own mathematical understanding of some core features of his metaphysics will not be dealt with here.

1. The Debate on Spinoza's Relation to Mathematics

Although Spinoza's *Ethics* is, as the subtitle says, 'demonstrated in geometrical order' (*ordine geometrico demonstrata*), most readers of Spinoza question, to different degrees, the

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geometrical nature of his philosophy. There is a long tradition of Spinoza readers who argue that this *ordo geometricus* has no internal relation to the content of Spinoza's philosophy. Both historical figures like Schopenhauer, Nietzsche, and Bergson (see [4], pp. 143–145) and prominent Spinoza scholars like Harry Austryn Wolfson ([5], chaps. 1, 2) and Edwin Curley ([6], pp. xi, 51) argue that the geometrical manner of exposition is nothing but a tedious textual form that obscures the true content of his theory. Since the influential work of Martial Gueroult ([7], pp. 25–37; and [8], pp. 470–487), the *ordo geometricus* is now generally viewed as reflecting Spinoza's methodology—laid out in the *Tractatus de Intellectus Emendatione* (TIE)—of synthetic reasoning based on genetic definitions.

But although it is thereby now generally accepted that there is a form of 'geometrism' to be found in Spinoza's philosophy, this geometrism is seen as purely methodological rather than as expressing a deeper philosophical or ontological commitment. Spinoza is thus distanced from the mathematization of nature by figures like Galileo and Descartes. Prominent scholars like David Savan [9], Yithzak Melamed [10], and Eric Schliesser [11] argue that while mathematics constitutes a kind of methodological or epistemological ideal, mathematics itself is not taken by Spinoza as a means to knowledge of nature. By its clarity, precision, and systematic character, mathematics is a model for all forms of knowledge. However, they argue, because mathematics deals with abstractions it cannot lead to real knowledge of nature. This interpretation is primarily based on Spinoza's dismissal of number and measure as abstract and imaginary notions that cannot serve to explain nature (see Letter 12; Letter 50), and his characterization of geometric figures as beings of reason (TIE §§ 72, 95; Letter 50; Letter 81). Spinoza's critique of number, measure and figure is taken to show that neither nature nor our knowledge of nature can be mathematical for Spinoza. Thus understood, Spinoza's philosophy is not part of the 17th-century mathematization of nature.

More recently, however, Spinoza scholarship has begun to argue that there is a metaphysical meaning to Spinoza's geometrism. As Spinoza explains in TIE (§§ 42, 61), true method entails that the soul reproduces objectively the causal order found formally in nature. Given that the proper philosophical method described in the TIE aligns with the *ordo geometricus* used in the *Ethics*, the latter must be taken to mirror in thought the causal order existing in nature. In other words, the order of causes in nature is geometrical and corresponds to the order of causes followed in the synthetic demonstration of the *ordo geometricus*. As Spinoza repeatedly emphasizes, the geometrical necessity by which the properties of a triangle follow from its essence, is one and the same necessity by which modes follow from God (E1p17s; E2p49s) (Spinoza's *Ethics* is referenced through the standard system). Or more broadly, as Valtteri Viljanen puts it, Spinoza's metaphysics is a 'geometry of power' in which 'each and every genuine thing is an entity of power endowed with an internal structure akin to that of a geometrical object' ([12], p. 2). Therefore, as Ursula Goldenbaum argues, instead of being a mere form of exposition or a method of demonstration, the *ordo geometricus* constitutes the very foundation of Spinoza's entire *metaphysics* ([13], p. 275). In a recent study, Matthew Homan argued that while the objects of mathematics are abstract for Spinoza, the objects of nature are still mathematical in the sense that they approximate geometrical figures ([14], pp. 81–82). Bodies, for Spinoza, are then infinitely complex mathematical figures which we know by approximation through our limited geometrical knowledge. In other words, according to Homan's reading, the difference between the objects of mathematics and real physical things is not one of nature but one of degree of complexity. In fact, this is a position that is also held by Galileo, which allows him to defend the mathematical character of the universe while acknowledging the abstract nature of human mathematics.

This short historical overview shows that Spinoza scholarship has gradually, and in increasingly stronger terms, come to see Spinoza as a kind of geometrist. Therefore, we could say that Deleuze was thus ahead of his time with his interpretation. Nevertheless, the details of his interpretation are still very original today.

2. The Influence of Gueroult

Before we turn to the details of Deleuze's geometrist reading, I would like to examine the history of this view within Deleuze's life-long relation with Spinoza. Surprisingly, this idea of geometrism, or the more general importance of geometry for Spinoza, is virtually absent from Deleuze's most extensive text on this philosopher, namely, *Spinoza et le problème de l'expression* [15] from 1968. This book includes a short discussion of why 'philosophy is amenable to mathematical treatment' ([15], pp. 20–22). However, at this point, this mathematical treatment of philosophy does not mean, for Deleuze, that the contents of Spinoza's theory, and the reality that it describes, are themselves mathematical (e.g., [15], pp. 192, 278, 281). In the first edition from 1970 of his second book on Spinoza—originally just titled *Spinoza*—there is a scattered discussion of the *ordo geometricus* as a method of invention and a 'natural geometry' ([16], p. 20). The revised and augmented edition from 1981—now entitled *Spinoza. Philosophie pratique*—further develops this idea of a natural geometry in the newly added fifth chapter 'Spinoza's Evolution' [2]. Then, as I have said, the seminars from 1980–1981 discuss Spinoza's geometrism in very strong terms and take this idea into new directions [1]. Finally, in 'Spinoza et les trois éthiques' published in *Critique et Clinique* from 1992, Deleuze both pushes his interpretation to its limit and takes a step back ([17], pp. 138–151): He understands Spinoza's geometrism in the strongest metaphysical terms; but he also argues that there are actually three texts (and three theories) to be found in Spinoza's *Ethics*, only one of which is truly geometrical.

It thereby appears that Deleuze's interpretation of Spinoza, like the broader field of Spinoza studies, evolved towards this 'geometrist' interpretation. Or rather, this view is a 'newer' element of Deleuze's interpretation that is only developed, step by step, after 1968. Of course, Deleuze's first Spinoza book was his complementary thesis; and Francois Dosse argues that it was 'practically finished in the late 1950's' ([18], p. 118). Therefore, Deleuze's first account of Spinoza might be a bit older than its publication date. But there is a good reason to believe that Deleuze only started to think of Spinoza as a geometrist after 1968; for this was also the year that Gueroult's first volume on Spinoza's *Ethics* was published. As I have said, one of the important claims of Gueroult is that Spinoza's *ordo geometricus* is not a mere textual form but a true philosophical method that is a fundamental aspect of Spinoza's philosophy ([7], pp. 25–37). As Gueroult's study was published in the same year as Deleuze's first book on Spinoza, his influence on Deleuze's understanding of Spinoza is posterior to this first Spinoza book. One year after the publication of Gueroult's book, Deleuze wrote an article, 'Spinoza et la méthode générale de M. Gueroult' from which it is evident that he was deeply impressed by Gueroult's analysis of Spinoza ([19], pp. 146–155). As is already evident from the title, the main element that Deleuze applauds is Gueroult's structural method which analyses a philosophical text according to the 'order of reasons'. As Deleuze argues, Gueroult thereby shows how the structure of Spinoza's philosophy emerges from its 'generative elements' ([19], pp. 146–147). Gueroult thereby shows, Deleuze writes, how the *ordo geometricus* is an essential structural aspect of Spinoza's theory. Gueroult himself also briefly suggests that Spinoza identifies geometry with a metaphysical theory of real things ([7], p. 28). As Deleuze writes in his commentary of Gueroult, Spinoza 'frees the geometric construction from the limits that affect it as long as it is applied to figures (being of reason or imagination)' ([19], p. 148). Finally, Gueroult also shortly notes that for Spinoza there is chasm between geometry and arithmetic. As we will

see in Sections 3 and 4, these elements are developed further by Deleuze in his Spinoza seminars and *Spinoza. Philosophy pratique*. In sum, although Deleuze's reading far exceeds the suggestions of Gueroult, I believe it is clear who put Deleuze onto the path of reading Spinoza as a geometrist. However, as we will see, Deleuze took this interpretation into new directions.

3. The Priority of Geometry over Arithmetic

Having established this historical context, let us turn to the theoretical dimensions. Deleuze says: '[Spinoza] prefers geometry rather than algebra; he does not believe in the future of algebra. But he strongly believes in geometry' ([1], p. 252). Deleuze is here positioning Spinoza in the 17th-century debate on whether geometry or arithmetic (or algebra as generalized arithmetic) is the more fundamental branch of mathematics. This debate was fueled by the development of algebra by people like Viète and Descartes. Algebra made it possible to solve geometrical problems through arithmetical operations. In that sense, it made a kind of reduction of geometry to arithmetic. This triggered the question: what kind of mathematical object is most fundamental, number or geometric magnitude? In Deleuze's words, this question divides the history of mathematics into geometrism and arithmetism: 'There are two branches of mathematics, magnitude is greater [*supérieures*] than number, and on the contrary [. . .] number being deeper than magnitude' ([1], p. 366).

Deleuze refers to Pythagoras, Plato and the 'Hindu-Arab tradition' as examples of arithmetism ([1], pp. 350, 352, 366). But there is a prominent example much closer to Spinoza: Leibniz argues that 'geometry itself, or the science of extension, is, [. . .] subordinated to arithmetic, since, as I said above, there is repetition or multitude in extension' ([20], pp. 251–252). Geometric magnitude, if it has any reality as material extension, must be a repetition of unities (i.e., monads). Therefore, number is for Leibniz the most fundamental form of quantity. Leibniz's position is of course based on his particular metaphysical theory: the reduction of matter to a multiplicity of monads. But his argument reflects the general idea behind the view that number is prior to geometric magnitude: Geometric magnitudes only become determinate mathematical objects when they are measured, i.e., cut up into units of measurement which are then counted. As Deleuze says, this idea is 'the birth certificate of algebra' ([1], p. 352) which lies at the foundation of our present-day conception of geometry as dealing with measured quantities. Such an idea is also deeply Cartesian. Descartes' *La Géometrie* proposes a procedure to solve geometric problems by translating them to algebraic equations. This approach hinges on the idea that geometric quantity is inherently measurable, and thus numerical.

Euclid's geometry, however, shows how geometry can go a long way without using numbers. Euclid introduces number only very late in the *Elementa*. He first and foremost defines and discusses geometric objects in qualitative terms. A point is defined simply as 'that which has no part' (book I, definition 1) and a line is 'breadthless length' (book I, definition 2) (citations of Euclid are from the translation by Heath [21]). Nevertheless, quantity does play a role in Euclid's geometry. But Euclid understands quantity in terms of relations and proportion. A right angle, for example is defined by the equality of adjacent angles, not by a 90-degree measure (book I, definition 10). The relation of *equality* itself is defined in terms of the intuitive quality of coincidence (i.e., complete overlap when put on top of each other): 'things which coincide with one another are equal to one another' (book I, definition 4). Then, after having defined *ratio* as the comparison of two magnitudes (such as lengths or areas) of the same type (book V, definition 3), Euclid defines what the *equality of ratios* is:

> Magnitudes are said to be in the same ratio, the first to the second and the third to the fourth, when, if any equimultiples whatever be taken of the first and third, and any equimultiples whatever of the second and fourth, the former equimultiples alike exceed, are alike equal to, or alike fall short of the latter equimultiples respectively taken in corresponding order. (book V, definition 5)

Finally, this equality of ratios is then used to define the notion of *proportionality*: 'Let magnitudes which have the same ratio be called proportional' (book V, definition 6). This strategy for defining proportion is adopted from Eudoxus, one of the precursors of Euclid. It is exceptional because it achieves to define proportionality without recourse to numbers. The definition establishes that two ratios a:b and c:d are proportional if, for any multiples of a and c (say ma and mc) and any multiples of b and d (say nb and nd), the relationships between these multiples remain consistent (i.e., if $ma > nb$, $mc > nd$; if $ma = nb$, $mc = nd$; and if $ma < nb$, $mc < nd$). This approach determines quantity and quantitative relations without using numbers. Euclid then later defines number based on these relations of proportionality and equality. He thereby shows how non-numerical geometric quantity is prior to number. In Deleuze's words, 'It's not number that determines magnitude; it is magnitude that determines number' ([1], p. 348).

Deleuze refers to this theory of ratio and proportion when he briefly discusses Euclid as an example of geometrism:

> what all Greek mathematicians have nonetheless considered to be Euclid's high point namely the theory of ratios (relations) and proportions. And it's at the level of a geometric theory of proportions and ratios that this subordination of number is asserted. ([1], p. 351)

Deleuze immediately adds here that 'this would be a completely Spinozist point'. He says that Spinoza is 'deeply Euclidean' ([1], p. 351). And Deleuze is perfectly right. Spinoza's conception of mathematics is Euclidean rather than Cartesian. As I have said, this is true in terms of his ideas on method: Spinoza prefers Euclid's synthetic method rather than Cartesian analysis. But what few people have grasped is that Spinoza is also opposed to Descartes in terms of his conception of the object of mathematics. According to Descartes, 'the exclusive concern of mathematics is with questions of [. . .] measure' ([22], p. 19) (in the full citations, Descartes also includes questions of 'order'; however, for Descartes, order does not really pertain to the object of mathematics, but rather to its method). Spinoza, however, sees mathematics as 'concerned only with essences and properties of figures' (E1app, ([22], p. 441), which is a fitting description of Euclidean geometry.

4. Spinoza's 'Natural Geometry'

The view that geometric quantity is more fundamental than number might not be enough to call a philosopher a 'pure' or 'absolute' geometrist. As long as one views mathematics as only dealing with abstractions or conceptual fictions, as most philosophers do, one's geometrism is not absolute but limited to mathematics as an abstract science. Deleuze, however, argues that Spinoza 'rids the geometric method of the fictions and abstractions that limited its exercise' ([2], p. 57). This idea can already be found in his first Spinoza book ([2], p. 21–22). Deleuze explains how the theory of genetic definitions, explaining the production of a thing rather than its properties, reshapes the geometric method so that 'philosophy becomes amenable to mathematical treatment' ([2], p. 22). Nevertheless, while Spinoza's geometrism is thus freed from geometry as the science of the abstract, it is, in this first book, still limited to the *method* of philosophy and excluded from its content. Deleuze here still argues that neither the essences of singular things that populate nature nor the common notions—the real commonalities between things through

which reason can know nature—are mathematical ([15], pp. 192, 278, 281). In other words, only the *method* of Spinoza's theory is geometrical, not the *content*. This changes somewhat in *Spinoza. Philosophie pratique*. Here, he argues that common notions are 'analogous to geometric being, but with no fiction involved' ([2], p. 84). He says that there is a 'deep affinity of the common notions with the geometric beings themselves'. Nevertheless, he still argues here that, 'in reality, the common notions are physico-chemical or biological Ideas rather than geometric ones' ([2], p. 115) and that they are '*more* biological than mathematical' ([2], p. 57). In other words, when Deleuze here writes that Spinoza's theory forms a 'natural, real geometry' ([2], p. 115) this is meant in an analogous way. Spinoza's geometrism is thereby still far from 'absolute'. Even in Deleuze's Spinoza seminars, where he argues that Spinoza's geometrism is 'absolute' and 'pure', he says that 'mathematics is the formal theory of the second kind of knowledge [knowledge of common notions] and not the second kind of knowledge' ([1], p. 448). It is only in 'Spinoza et les trois éthiques' that he drops this reservation. There, he argues that the second kind of knowledge, the knowledge of common notions, 'is the true apprehension of the structures of the body' ([17], p. 142). He then adds that 'this structure is geometrical'. Spinoza's geometrism here takes on its full metaphysical meaning: 'modes are geometric but fluid structures' ([17], p. 142). This means that Spinoza's metaphysics really is a 'mathematics of the real or the concrete', and not merely in an analogous sense ([2], p. 56).

Of course, this does not mean that Deleuze had an increasingly more abstract interpretation of what things are in Spinoza's metaphysics; instead, it means that he had an increasingly concrete conception of what mathematics is for Spinoza. Throughout all his writings and seminars, Deleuze has a deeply relational conception of Spinoza's modes. This is of course based on the conception of the body and its individuality, in the so-called 'Physical Digression' in the *Ethics* (between E2P13 and E2P14), in terms of a union of bodies that retains a certain 'proportion' and 'ratio of motion and rest'. Deleuze's conception of these relations and how they constitute the true nature of modes did not really change. But I suspect that his conception of geometry, or rather, geometry according to Spinoza, *did* change. By realizing that geometry can be seen as the science of relations, without being restricted to abstract numerical relations, Deleuze comes to accept that Spinoza's metaphysics really *is* geometrical.

There is at least one important passage, which can be found at two locations in Spinoza's writings, which substantiates Deleuze's view:

> we conceive quantity in two ways: either abstractly, or superficially, as we have it in the imagination with the aid of the senses; or as substance, which is done by the intellect alone. So if we attend to quantity as it is in the imagination, which is what we do most often and most easily, we find it to be divisible, finite, composed of parts, and one of many. But if we attend to it as it is in the intellect, and perceive the thing as it is in itself, which is very difficult, then we find it to be infinite, indivisible and unique. (Letter 12, [23], pp. 202–203; also E1p15s, [23], pp. 423–424)

Spinoza gives number and measure as examples of the abstract conception of quantity; and he fiercely criticizes 'Those who have striven to understand the course of Nature by such notions' ([23], p. 203). In other words, Spinoza rejects the quantification of nature by people like Descartes and Galileo. However, he does not reject their idea that nature is properly quantitative and mathematical. Instead, he rejects the idea of quantity through which they understand nature and proposes an alternative notion of quantity, which is not abstract but real (quantity as 'the thing as it is in itself'). We cannot here fully explore this notion of quantity (see [24], chap. 7). However, the mere fact that Spinoza defends a real, non-abstract form of quantity which he opposes to number and measure shows two things:

First, Spinoza does take nature to be quantitative (and mathematical). Second, his idea that there is a form of quantity that is more fundamental than number and measure, of which number and measure are an abstraction, shows his affinity to Euclidean geometrism in which geometric quantity is prior to number and measure. Together, these two facts suggest that Deleuze was right to call Spinoza 'deeply Euclidean' and 'a pure geometrist'. The passage, however, does not sit well with Deleuze's interpretation of Spinoza's metaphysics in terms of two forms of real quantity: intensive magnitude and extensive magnitude ([17], chaps. 17, 18). First of all, Spinoza only distinguishes one real form of quantity. And secondly, what Deleuze calls extensive magnitude, seems to correspond to what Spinoza calls abstract quantity due to its divisibility. This might be the reason why Deleuze fails to comment on this important passage.

5. Geometry as Spinoza's Univocal Language

One could ask what the real point is of such a 'natural geometry' if the idea of geometry is seemingly emptied of all of its usual contents? If geometry becomes 'concrete', what is still geometrical about it? There remain several ways in which Spinoza's world is geometrical. First and foremost, the geometrical world is far away from the human world: It has no goals, no values, no free will, no higher purpose, no judgement, no guilt, etc. In that sense, Spinoza's world is deeply geometric.

It is important to grasp the deeper philosophical meaning of the general 17th century quantification of nature. This mathematization is a manner to get rid of the Aristotelian worldview. The Aristotelian world is a kind of classification table in which things are qualitatively distinguished. But this 'qualitativism' entails teleology. It's a world where each thing has a role to play. It's a normative world; a world of judgement and hierarchy. Moreover, it's a world view where the world is *described* and *classified* but not truly *explained*. The classic example: the fact that bodies fall to the ground is described in terms of a quality *gravitas*; without giving us a proper understanding of the phenomenon. Finally, it's the worldview that Spinoza fiercely attacks in the appendix of *Ethics* I for being an *anthropomorphic* perspective of nature.

The mathematization of physical nature by Galileo and Descartes was an attempt to find a true explanation of things not through normative goals but through laws and efficient causes. These laws relate things to each other. The fragmented Aristotelian world of classification is unified under shared laws and principles. The hierarchical ontology is thus flattened: one realm for all bodies. But just as the foundation of the Aristotelian world view lies in its understanding of the world through *qualitative* differences; the foundation for the mechanical world view lies in the *quantitative* understanding of things. Quantification is a unification and uniformization of nature.

Of course, Galileo and Descartes limited this mathematization to *physical* nature and thus left humans (or at least their minds and souls) in their own realm of goals, values, and judgement. But not Spinoza. He radicalized the flattening of nature to include *all* things. Everything is natural and nature is all (see E3pref). Even God is naturalized.

This flattening of reality is of course a major theme in Deleuze's reading of Spinoza. As is well known, in *Spinoza et le problème de l'expression* ([17], chap. 2) he grasps this in terms of the *univocity* of being. The stratified and qualitatively fragmented Aristotelian world is a world of *equivocity*. All things exist in their own way; they all *exist*, but 'being' means something different in each of them. According to Deleuze, Spinoza follows Duns Scotus and makes being univocal. All things exist in the same sense. More in general, Spinoza's metaphysics is one univocity where principles like necessity, causality, freedom, intellection, love have the same meaning for God and all his creatures.

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In his first writings on Spinoza, Deleuze does not relate this theme of univocity to geometrism. In the seminars, however, he says that Spinoza's geometrical method is a 'poetry of pure univocity' ([1], p. 289). Deleuze here focuses on geometrism in a linguistic sense rather than a metaphysical one. Spinoza finds in geometry a means to escape natural language:

> What does he expect from geometry? What does he expect from this process? It is not just superficial [*plaqué*], this process. But then what? What does he want to tell us? It is obvious that for him, even if we limit ourselves to this—in fact, it is even more complicated than that—but even if we limit ourselves to this, the language of geometry is an essentially univocal language as opposed to everyday language and contemporary language. The language of this science is a univocal language. Henceforth, he will succeed in making a metaphysics exposed geometrically. He is horrified by all equivocal expressions. ([1], p. 289)

As Deleuze notes, 'our language is naturally equivocal' ([1], p. 289). To understand this, we must make a short excursion into Spinoza's theory of language. For Spinoza, 'words are part of the imagination' (TIE §88, [23], p. 38). In its simplest form, imagination is sensory perception: when an external body interacts with our own, it leaves a physical imprint. Because the mind perceives these bodily affections (E2p12, E2p16), it effectively 'imagines' or knows the external body through this trace. Since this imprint remains even after the interaction, the mind can perceive the external body when it is no longer present (E2p17). Furthermore, if the body is affected by two external bodies simultaneously, their imprints become associated; perceiving one triggers the recollection of the other (E2p18). This associative mechanism forms the very basis of language (E2p18s). Spinoza's famous example is that of a Roman who repeatedly hears the acoustic sound '*pomum*' while seeing an apple. The imprints of the acoustic body and the physical fruit become linked. Through the doctrine of parallelism (E2p7), this physical association is mirrored in thought: 'from the thought of the word *pomum* a Roman will immediately pass to the thought of the fruit' (E2p18s, [23], p. 466). Thus, the thought of a sound allows us to conceive of an external body. However, because this process relies on contingent, experiential associations, natural language is inherently 'equivocal.' The same sign speaks differently depending on a person's history—just as a soldier associates horse tracks in the sand with war, while a farmer associates those same tracks with a plow and a field (E2p18s).

In natural language, words carry a history of associations that shift their meanings depending on the context. Mathematics, by contrast, flattens language: its words, numbers, and symbols hold one exact, context-independent meaning. While Spinoza does not write his Ethics using mathematical symbols, his approach remains strictly geometrical. After all, Euclid's own use of mathematical formalism was also highly limited. What makes a text geometrical is not the visual presence of numbers, but how the meaning of its words is determined. As Deleuze argues, Spinoza constructs a philosophical language in which every word is explicitly defined to have a single, universal application. Drawing on the universality and 'child-like' nature of Euclid's language ([25], p. 185), Spinoza ensures his terminology is independent of any cultural or historical context. As Mogens Lærke observes, 'adopting the geometrical method [for Spinoza] was a way to uproot language from its history' ([26], p. 538). Ultimately, Spinoza's language is geometric precisely because it frees words from the contingent, experiential associations of everyday speech.

In Deleuze's words, Euclid's geometry is a 'poetry of light;' and Spinoza attempts to find such a language of light in philosophy:

> I can now summarize Spinoza's very project from the point of view of a possible language: to manage to extract our everyday language from its fundamental

> equivocity and to manage to form univocal expressions. And once again, this involves poetry, creation; this will be a poetry of light. This will be a creation of univocity. ([1], p. 292)

Deleuze gives some examples of the univocality of Spinoza's philosophical language. An evident example is the word 'substance'. For Aristotle and Descartes there are different kinds of substances. Both God and men are substances, but in a very different sense. Spinoza, on the contrary, defines substance in a very precise way and demonstrates that there is only one substance: God. An even better example is the word 'intellect' (see [1], pp. 291–292). In E2p17s, Spinoza rejects the idea that intellect and will pertain to the essence of God by arguing that if this would be the case 'they would differ entirely from our intellect and will, and could not agree with them in anything except the name', for if intellect would pertain to God's essence, it would be prior to the objects that it knows in contrast to our intellect. To protect the univocal meaning of the term 'intellect', Spinoza argues that God's infinite intellect is one of his modes, that is, a product of God simultaneous, and not prior, to the objects (the other modes) that it knows (E1p31). In fact, Spinoza's attempt to understand 'intellect' univocally illustrates the role of the quantification of nature: he does not make a qualitative distinction between God's intellect and the human intellect, but a quantitative one. The infinite intellect is an infinite mereological whole, of which our intellect is a part (E2p11c; E5p40s).

6. Conclusions

Deleuze's assertion that Spinoza is a 'pure geometrist' is far more than a rhetorical flourish; it represents a profound but largely overlooked interpretation of Spinoza's entire philosophical project. As we have seen, Deleuze's reading, initially sparked by Gueroult's structural approach, gradually moved beyond seeing the *ordo geometricus* as a mere textual or methodological tool. Instead, Deleuze came to recognize Spinoza's geometrism as a deep metaphysical commitment comprising three essential elements.

First, Spinoza's geometrism is fundamentally Euclidean in prioritizing non-numerical geometric quantity over the numerical measurements of Cartesian mathematics. Second, by anchoring quantity in reality rather than abstraction, Spinoza constructs a 'mathematics of the real' where geometry describes the concrete, relational structures of physical modes. Finally, the *Ethics* is geometric in the sense that it is written in a univocal language. Language is 'flattened' to better accommodate Spinoza's non-hierarchic naturalism. Ultimately, Deleuze was remarkably ahead of his time in identifying the depth of Spinoza's commitment to geometry.

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