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Mythology as Mathematics, or How to Become a Demiurge

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Abstract: The present text intends, through a Dionysian reading (in J. F. Rosenberg's terms) of the Platonic pagan tradition, to establish the links between poetic-mathematical discourse, the construction of a world, and the transcendental apparatus, to then extract the consequences of such links in a "non-Euclidean" epistemological context. From the Butlerian approach, and beyond, I put forth the outlines of a perspectival system of potentially co-encompassing worlds that would maintain their uniqueness without being subsumed into a single world (a *henadological perspectivism*). Finally, some political and cosmopolitical consequences are also addressed.

Space, World, and Soul

When we think about the cosmology of the ancient Greeks, we often make the mistake of projecting onto them a certain vision of how pre-modern physics should be or work. We are easily led to take the qualitative view of classical elements consecrated by Aristotle as the standard perspective, and we imagine that there would be an unavoidable split between the mathematizing approach of the moderns and the ancient perspective, believing it would turn out to be its *Lebenswelt*. However, not only was the physics of the ancient Greeks far from a unified science, but it was also not oblivious to the intimate and

not merely instrumental relationship between mathematics and cosmology.

Plato, in the *Timaeus*, reduces the elements of nature operated by the Demiurge to five polyhedra, whose indecomposable parts are the flat triangles that constitute their faces, and whose arrangement determines the qualities that are proper to each element, following the order of the principles that can be understood by the one who approaches what is divine[1]. The irreducible is not the "hot", the "cold", the "wet" or the "dry", but the geometric properties that make possible the emergence of such secondary effects. Fire cuts and consumes, not because of its "heat" or "dryness", but because of the angles of its triangles, the proportional variety of its sizes determines its penetrability, mobility, and density, which will generate what we attribute to it qualitatively[2]. The later Platonic tradition was aware that, at least in the explanatory domain of natural elements, quantity should prevail over quality as its most fundamental explanatory constituent[3].

The geometrization of the cosmos conceived by Plato obviously occurred long before the radical geometrization of Descartes, who created a means of mathematizing pure space[4], but it is not absurd to reinterpret the geometrically-oriented activity of the Platonic Demiurge as closely related to the construction of space as a general concept. In addition to the common notion that pre-Cartesian geometry was concerned only with the shape of the bodies that inhabit space and not the shape of the space in which they are located, Plato seems to affirm that objects are not only in space, but that they are modifications of space itself[5]. If we assume the thesis of the constant mutability of the elements one into another[6], we could think that the continuous demiurgical ordering of the plane triangles, present in the elemental polyhedral structures, is also the tireless movement of the construction of the world as the construction of a space; in this sense, to build a space is also to constitute a world.

In late Platonism, the generation of the world coincides with the generation of the soul, both that which pertains to the world itself and

1 Tim. 53d
2 Tim. 56b
3 Simplicius *In de Caelo* 641,1–5
4 An essential element for the later Newtonian revolution.
5 Tim. 48a–53b
6 Tim. 49b7–c7

the individual souls in which different beings inhabit[7]. Something predictable, as Xenocrates already said that the soul is a self-moving number, a thesis that, according to Aristotle, would support the psychic unity between movement and cognition (*De Anima* 404b 27–28), and would also imply the analogy or even identity between the mathematical procedure and the cognitive process as such. This implication seems to be embraced by thinkers like Proclus, who saw soul formation as a process of mathematical ordering:

> Realizing this, Plato constructs the soul out of all the mathematical forms, divides her according to numbers, binds her together with proportions and harmonious ratios, deposits in her the primal principles of figures, the straight line and the circle, and sets the circles in her moving in intelligent fashion.[8]

For Proclus himself, the mathematical procedure would be the highest kind of discursive knowledge, which also means the highest cognitive form, proper to the soul — *dianoia* —, so that the human capacity for extracting intelligibility from the world could be explained through that constitutive fraternity between both souls, speakers of the same language conceived as the language of the Demiurge himself.

As much as late Platonism assumes the existence of forms of cognition that are above the dianoetic realm (such as the contemplation of forms in the Intellect), they are inappropriate from the point of view of the soul, and cannot be adequately transposed to the discursive level. This makes Proclus' choice reasonable when writing his systematic treatise on metaphysics using the Euclidean axiomatic method: the *Elements of Theology* deal with objects much superior to the ontological register of numbers, but their super-discursive character would find, in the axiomatic form, the most adequate way of all inappropriate modes of discursive expression. Mathematics is not identical to ontology for the ancient Platonists, but the expressibility of the latter would have the former as a model.[9]

7 Which can be seen in Plotinus' Ennead IV 3.

8 Proclus, In Euclid, 16.16–22

9 It is possible to say that philosophical dialectic (exemplified by the second part of Parmenides) would be a dianoia superior to mathematics. However, this does not hinder the modelling character of mathematics relative to philosophy itself.

Active Imagination

How does the soul become capable of discursively expressing demiurgic language? For this, it is necessary to understand what Proclus called the imaginative faculty, which could have a "reproductive" or "productive" function. The passive or reproductive imagination is constituted through our perception of the sensible world, while the active or productive imagination manages to give perceptible form to elements that would, before that, be devoid of form. In his commentary on Euclid's *Elements*, active imagination has as its object a class of intermediary entities between the sensible and the supersensible domain: geometric objects. Such a faculty would be able to "project" the higher principles, in themselves indivisible and devoid of any spatial determination, as divisible and provided with spatial characteristics[10]. However, not as a weak or simulacrum-like reproduction of these objects, but as an effective "materialization" — similarly to the sensitive manifestation, that is, a shaping of the supersensible in the domain of the sensible. The relationship between higher realities and imagination becomes clear when Proclus makes the correspondence between the principle of unity and the point: the latter is distinguished from the former by virtue of having a "place" or "position" provided by its materialization[11].

The way in which this "projection" or "embodiment" occurs is linked to the specific type of matter that serves as a receptacle: so-called intelligible matter, which allows a principle to present itself in the most distinct ways without losing its exemplary character relative to the principle. All triangles that the creative imagination can produce differ from each other, as they have distinct spatial characteristics. However, all are perfect representatives of the principle they express, without obviously exhausting it, since such a principle in itself is above all the determinations present in the figures projected by the imagination. The embodiment of geometric shapes in imagination is vital to the work of the geometer, for, through it, it becomes possible to apply divisions and measurements under (to) such figures.

Proclus emphasizes the fact that the imaginative realm cannot be taken by the geometer as the end point of his investigation, since this realm is effectively a "path", and, as such, must, at some point, be set aside

10 In Euclid. 141, 4–7
11 In Euclid. 96

for the sake of the destination towards which it points. The possibility of going beyond images, and conceiving the principle that founds them, is seen as a gift from the God Hermes, who makes the geometer go beyond the domain of images, just as Odysseus freed himself from the arms of Calypso[12].

This movement of "cognitive" (also spiritual) ascension carried out by the geometer is contextualized in the understanding of geometry as a sacred art, whose purposes are not exhausted in the mere study of abstract mathematical structures: it is articulated to a soteriological purpose, which allows the purification of the soul — effectively guided and enlightened throughout this journey by the patron God of this art:

> It arouses our innate knowledge, awakens our intellect, purges our understandings, brings to light the concepts that essentially belong to us, takes away the forgetfulness and ignorance that we have from birth, set us free from the bounds of unreason; and all this by the favor of the god who is truly the patron of this science, who brings our intellectual endowments to light, fills everything with divine reason, moves our souls towards Nous, awakens us as I were from our heavy slumber, through our searching turn us back upon ourselves, through the discovery of pure Nous leads us to the blessed life.[13]

With this in mind, it is not difficult to understand that the creative imagination, even in its strictly geometric use, already has a powerful and profound spiritual (not to say religious[14]) sense. The process by which the geometric images are generated may not allow them to be characterized as a theophany in a strict sense. However, they could certainly be considered hierophanies, given the nature of what they express and the spiritual purposes of the art that uses them as instruments.

Proclus' creative imagination could also materialize, even if improperly, some things that would be far beyond the domain of mathematical objects. In his commentary on Plato's *Republic*, in which it is stated that the Gods are above specific forms, the author conceives of a process

12 In. Euclid 55, 21

13 In. Euclid 46–47

14 Similar to the role of the science of grammar for authors such as Bhartrihari, in both cases the study of a "universal language" (Sanskrit for the Hindus, and mathematics for the Hellenes) would be a gateway to spiritual realization.

in which the immortals constitute a form in which they can become intelligible to humans[15]. Theophany and geometric thinking share the quality of being processes in which the invisible becomes visible to the discursive domain, enabling a movement of cognitive and spiritual ascension[16]. Iamblichus, another late Platonist, characterizes this ability to form images of disembodied entities as a divinely-oriented activity that brings us closer to the truth present in intelligible realities:

> If the soul weaves together its intellectual and its divine part with higher powers, then its own visions (*phantasmata*) will be purer, whether of the gods, or of essentially incorporeal beings, or… of whatever contributes to the truth about intelligible things.[17]

This intimate relationship between divine revelation and geometric construction (as ways of producing a discursive intelligibility in relation to what previously could not be intelligible discursively) brings mathematical discourse closer to mythical discourse, the theophanic discourse par excellence. But proximity does not end at this point, the mytheme, like the matheme, is also the revelation of a way of building a world or, better, it is the revelation of the activities by which the Gods engender the world, so that Sallust will find it possible to claim that the world itself can be seen as a myth[18].

However, the dianoetic transposition of divine realities seems to be relatively more complex than that which occurs in the domain of mathematical objects. There is not only a unified axiomatic system determining the conditions for the appearance of a world, but each myth seems to reveal a world of its own, so that we would have multiple theogonies (such as the Orphic and the Hesiodic), divine genealogies, and sacred narratives apparently contradictory to each other, this not even considering the lively character of myth in oral cultures, which would reveal to us a universe of even wider variations and micro-variations. This forced hermeneutics of myth, such as Sallust's, to develop ways to dissolve such apparent dissonances by

15 In Rem Publish 2.39.28–40

16 The theophanic aspect of the creative imagination of the Platonists would later be interpreted in the Islamic context by philosophers such as Sohravardi as corresponding to the prophetic vision itself (*haqiqat mohammadiya*), and constituting an entire ontological domain of its own: "the land of nowhere" (*nâ-kojâ-abâd*), which was also called "mundus imaginalis" by Henry Corbin.

17 De Mysteriis 107.7–11

18 On the Gods and the Cosmos, III.3

distinguishing about the specific ontological register of each sacred narrative. A traditional-leaning perspective of the Platonic hermeneutics of myths would think of such a strategy as implied in the attempt to harmonize such disagreements under the aegis of a single great metaphysical infrastructure that, in the end, would subsume the multiplicity of mythical worlds in a unified totality.

Revolutionary Demands

But what would change after the non-Euclidean revolution brought about by characters like Gauss and Riemann? The Platonists of classical antiquity not only lived in one world, but in the only conceivable world, comfortably based on apodictic principles whose solidity had hitherto seemed unshakable. The possibility of thinking of other ways of building a space is, today, for us, something natural, but it was perceived, at the beginning, as a great scandal, even serving as a leavening for anti-Semitic conspiracies that accused the new geometries of being part of a plan whose aim was to destroy European scientific objectivity[19]. The reactionary hatred against the new geometries is not explained only by their apparent counter-intuitive character, but by their ability to impose themselves as valid and consistent without having to subsume them under the old Euclidean geometry. Even if it is possible to accept only the common axioms between Euclidean geometry and non-Euclidean geometries as inhabitants of the eidetic sky and make their dissent later[20], such a strategy is by no means able to configure a unified view capable of recovering its former image as a unique model under which it is possible to build space, and, as we know, a world. Furthermore, the new geometries and their application in contemporary physics demonstrate the need to make part of our transcendental structure flexible and revisable, enabling us to think beyond what would supposedly be derived from our purest intuitions. In this way, the non-Euclidean revolution meant not only a revolution in the domain of geometry, but also of its demiurgic counterparts, giving a new sense of dynamism to the movement of the number we call soul.

Here we consciously go against Heidegger, for whom the matheme is the sign of a curse for Being, a means by which what would be the

19 A sad example is Duhring, who even said that Gauss would have a "deformed brain".
20 Something similar to Bertrand Russell's strategy (during his idealist phase) in his critical appreciation of Kant's transcendental aesthetic.

fundamental philosophical question is suffocated[21]. The matheme is that which is not only one of the highest ways of articulating our discourse on Being, but it is also that whose movement allows us to understand the conditions of this very articulation, so that the matheme is not only the expression of a historical position in relation to Being grounded in something more "profound", but itself constitutes this depth and this historicity in its movement as thought. If we are faithful to the Platonic maxim of the mathematical convergence between world, space, and soul, we will have to accept that the non-Euclidean revolution not only introduced a novelty in geometric thinking, but also revealed a new way of conceiving the world, and the soul.

The old strategy used to subsume the plurality of the mythemes here would also be inapplicable, not only because of the non-Euclidean revolution, but also because of the Cantorian revolution. It is no longer possible to think of a grand, single totality. Furthermore, the rigidity of our transcendental structure has not only been challenged by geometers, but by the multiplication of possibilities in many other formal domains, so that we not only explore other worlds, but also grow able to understand deeper how to produce the conditions of this investigation.

Returning to Proclus

How to think through the consequences of such changes? Before that, let's return to Sallust, this time from the perspective of contemporary Platonist, Edward Butler:

> The total body of myths belonging to a culture forms a comprehensive paradigm of the cosmos as expressed within that cultural sphere. But since the cosmos can itself be considered a myth, there is no reason to distinguish between the cosmos and its particular cultural expressions. It is the ideas, images and narratives of particular cultures which impart the order and meaning to the world which is inherent in the concept of a "cosmos", that is, a beautifully ordered system.[22]

We know that the mytheme and the matheme constitute a "beautifully

21 Gesamtausgabe, II. 2001: 46
22 The Theological Interpretation of Myth, Essays on a Polytheistic Philosophy of Religion, p. 11

ordered system", that is, a cosmos. Both are expressions of a certain arrangement of divine activities, a revelation of a peculiar way of meeting the constitutive elements of the world. We can conceive that different formal systems or mythical structures acquire their traction by being adequate means of expressing such arrangements, becoming vehicles of such activities. The Butlerian reading of Sallust does not dissolve the mythical bodies in a gigantic general mythology, but considers each one of them as a kind of paradigm of the world, in which the distinction between the ontological registers of the narratives aims more at exploring their singularities than at making them uniform, which obviously does not mean the exclusion of a perspective transversal to the various mythical bodies. This care to preserve the uniqueness, and to enable communication between different mythical worlds is linked to a practical demand for a contemporary, therefore global, polytheistic perspective:

> Above all else, the distinctness of Gods and of pantheons must be respected. Pagans have always compared the Gods of different nations with regard to their functions, their activities; but the comparison of functions need not imply the identity of persons. Discrete Pagan religions require a vehicle for understanding the similar structures in their pantheons without succumbing to the notion that they are worshiping the same Gods in different guises. No one can be expected to struggle in order to preserve or revive a guise.[23]

We may ask ourselves how each mythical world could preserve its uniqueness, and simultaneously sustain a universality capable of rendering the translatability of its structures possible. To this end, we should have a kind of metaphysics in which the uniqueness of these different worlds is supported by something that guarantees the mutual universality of their perspectives without their dissolving into a single great totality. This metaphysics was called *polycentric polytheism* by Edward Butler, and derives from an ingenious and creative reading of Proclus' philosophy, no longer conceiving the One as *an* apophatic Whole, but deflating it to the point of making it the minimum property of every singularity. The same Gods that engender the myths are Proclus' henads, existences that are simultaneously maximally singular and maximally encompassing.

23 The Theological Interpretation of Myth, Essays on a Polytheistic Philosophy of Religion, p. 05

> A henad is both more united to the other henads than a being is to other beings, but also more distinct from the other henads than a being is from other beings.[24]

The relationships between the activities of the henads form the fabric of the Intellect, and, later, of the Soul (in the Platonic metaphysical hierarchy), which means that its singularity is prior to the notion of Totality (which would be proper to the Intellect), therefore it could not be considered an "accident" of the Universal, a "particular" as opposed to a "whole", but it is a way in which the Whole is engendered, hence the henads "… are all in all or all in each[25]". The difference and similarity relations, or friendship and conflict between the worlds are later to these singularities, therefore they should not be reified. We could see such properties similarly in the "antakolouthia"-like structure of the virtues:

> Here, every virtue has a peculiar or unique "perspective", an *idios kephalaios*, which is a perspective on objects in general, but also on the other virtues themselves, in terms of their value for the goal the virtue embodies. Temperance thus 'sees' courage in the light of what courage can contribute to temperance. It takes a certain courage to resist excessive indulgence, for example. But there is more to it than this. Stobaeus speaks of the manner in which each virtue understands the others, which brings in a cognitive dimension beyond simple instrumentality.[26]

To think the multiplicity of formal or mythological systems under the prism of the deflated One allows us to preserve a super-discursive singularity that, in addition to not opposing the communicability of perspectives, presupposes that such communicability will enable an increase in intelligibility regarding particular perspectives. If the singular principle that founds a world is all-encompassing regarding all other singular principles of all other worlds, its structure would reflect (even in its relations of opposition and enmity with the other worlds) a potential perspectivist understanding of co-encompassing.

Obviously, such worlds are not as fully and readily transparent to one another as the Gods who engender them are. There is an intricate ontological topography filled with overlaps and tensions between the

24 Essays on the Metaphysics of Polytheism in Proclus, p. 10
25 Essays on the Metaphysics of Polytheism in Proclus, p. 09
26 Essays on a Polytheistic Philosophy of Religion, p. 82

Gods and their intelligible manifestations, which can come up in varying degrees of opacity between the worlds. A mythical world is not the result of the simple interaction between humans and Gods, but comprises a whole universe of relationships with other beings, visible and invisible. Certain social structures that include such multiple beings may facilitate or hinder the task of establishing modes of co-inhabiting and recognizing the mutual universality of perspectives. Thus, universal communicability between the worlds may face difficulties of actualizing itself, despite being potentially available to all of them.

Criticisms of a unidirectional notion of the world or "Geist", where convergence necessarily means subsumption, are fair. However, by changing the identity-difference register from the monadological mode to the henadological mode[27], we can conceive of a form of convergence without subsumption. The individuation of a world does not occur due to the fact that it is not another world, that is, instead of a negative individuation that presupposes divergence, we have a positive individuation where the relations between identity-difference between the worlds are accidental in relation to their singularity, which remains as a trait that modulates its current architecture, but which is not limited to it. Two worlds can be mutually intelligible or even have the same functional structure without losing their irreducible singularities in the same way that two people can be pastry chefs, and yet exercise this attribute in a completely different and singular way, because the singularity is what modulates the "paradigm" from the pastry chef. Singularity does not establish a radical incommensurability between the worlds, but it is precisely what makes it possible to overcome the different degrees of relative incommensurability, insofar as the recognition of difference requires the ability to think where such difference is traced, allowing the other world to be able to be seen by its own eyes. If there are radical incommensurabilities in the sense that they are insurmountable, they would not even be knowable, so that this attempt to compartmentalize the worlds would fall into what was initially avoided, the subsumption of all worlds into a single one. Universal communicability between worlds, as a universal potential, does not seek to eliminate singularity, but occurs through it.

The hermeneutic work of the ancient polytheistic philosophers, which

27 Or, in Proclian terms, from a perspective of unity that emerges from a process of unification of attributes (*ta henomena*) to oe that places singularity as a principle prior to attributes.

crossed these worlds transversally, can be understood as an effort to update this potential, building bridges between the different perspectives, and stimulating the increase of intelligibility between these perspectives, and of these perspectives with themselves. We can think that when Hephaestus assisted us in the construction of sonars, he not only allowed us to locate submarines, but also brought our experiential tooling closer to the world of bats. Taking some liberty: we could say that such an approach of relative incommensurabilities is the one that would make *ethology* a possible science.

To be aware of this seems to reveal a certain ethics involved in the demiurgic action, which is not only to build an inhabitable world, but to do so with the ability to co-inhabit other worlds. But whom would such ethics target? Is it restricted to the Gods whose demiurgic activity generates stars in nebulae, inspires the words of poets, and promotes mathematical insights? As human action is incorporated in the shaping of a world, therefore modulating the uniqueness that inspires it, what is its responsibility?

Third Navigation

Plato tells us about two major voyages undertaken by philosophy, the first concerns the investigation of how things are in their immanence, while the second is concerned with knowing what are the conditions for things to be as they are[28]. From the prism of these two voyages, we may have an interesting overview of what we have talked about so far. From the point of view of a first navigation between the different worlds revealed by the mytheme and the matheme, we would have an indefinite plurality of worlds, apparently isolated from each other, and legitimately hostile to an attempt of subsumption. From the point of view of a second navigation, we could recognize the relativity of the incommensurability between these worlds, we may perceive the gradients of mutual intelligibility that unite and separate them, and, even more, we may understand the possibility of communicability between these worlds through singularities that cut across their relations of identity and difference. However, this picture is still insufficient, we need a third navigation, which was glimpsed by another Platonic philosopher: "The philosophers have only interpreted the world in various ways; the point, however, is to change it."[29]

28 Phaedo 99b–d
29 Karl Marx, Theses on Feuerbach, 11

When we gain the ability to remodel our own transcendental structure, that is, when we manage to redraw the movement route of the number that is the soul, we also reveal a new relationship between our actions and the world. We can say that the poet not only transmits the word of the muses, but becomes aware of the conditions of transmission, modulating the world that is formed through his words. The entire world inspired by the Gods is a co-creation, a complex circuit of divine, daemonic, and human actions that express in a certain way the singularity manifested there, so that every world could also be another world. The creative imagination of the mathematician and the poet is not the passive transcription of superior realities, but a struggle waged within the limits of the linguistic expressibility of a given situation. Otherwise, we will have as a panorama a fixed universe of reified worlds, alien to the historical conditions involved in their structuring.

The matheme and the mytheme operate by revealing new ways in which these worlds can be intelligible and potentially mutually intelligible. However, if, for the ancient Platonists, the intelligible as such can never be sensibly or discursively exhausted (being an inexhaustible vector of discursive knowledge, and of the world in which this knowledge unfolds), for us, the extraction of intelligibility is an equally infinite movement, in which the creative imagination can design and redesign the schemata by which worlds are made discursively available. Against eidetic rigidity, we not only assume the inexhaustibility of ideas in their process of manifestation, but also the reversibility of what has already been manifested, that is, the idea (intelligibility vector) that expresses a singularity in a world is the principle of revision of its own frames of reference. This reinterpretation of the Neoplatonic *epistrophe* (reversion) eliminates the tendency to think of it only as a contemplative return to its origin, but as the principle of a *recursive noetic circuit*, where discursive structures serve an infinite movement of construction and reconstruction of multi-scale parameters of intelligibility. As already stated, such a movement does not need to be expressed only in the increase of the internal intelligibility of a world, but contains the potential for co-incrementation.

If, in *Cadernos do cárcere* [the *Prison Notebooks*], Antonio Gramsci suggests that universality is not given, but is the result of a collective achievement historically situated, and dependent on the ways in which this collectivity rearranges its internal contradictions, in our terms (in

which *Aletheia* is the daughter of Zeus, associated by Plato with Life itself in its incessant creativity[30]) we could say that Truth can only reveal itself transversally to all worlds through a vitally creative activity. We have presented so far, in a truly preliminary way, the contours of a henadological perspectivism that assumes the ontological possibility (and ethical demand) of building forms of co-inhabitation of worlds. Mythology and mathematics are some possible ways in which a world grows able to fold in on itself, to know itself, and to creatively reconfigure what has become an object of cognition in an infinite movement, which includes the construction of nexus with other worlds. From this perspective, such abilities are potentially present in all worlds, but the degrees of updating of such abilities can vary significantly, or even be prevented from fully updating due to their current configuration. The Zapatista demand for "a world where many worlds fit" seems to coincide with the demiurgic ethics in which the "common" does not arise from the subsumption of many worlds, but from the construction of a cohabitation, which retroactively makes possible the alteration of these particular worlds. If the third navigation is a call to co-demiurgy, the poet and the mathematician are those whose procedures prepare us for such a call. The unity between mytheme and matheme is constituted not only in the projection of what was not visible before, but in the understanding of present worlds, and in the active construction of the conditions for the emergence of new worlds.

30 Crat. 396