

Post Script

to

*“Does Plato Outline a Mathematical-Reductionist Model of the Natural World?
The Creation of the World in the Timaeus and Aristotle’s Criticism in De Anima”*

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Reading the reviews of my article *“Does Plato Outline a Mathematical-Reductionist Model of the Natural World?”* (*Biocosmology-Neo-Aristotelism* 5[1]), I would like to express my sincere thanks to the eminent reviewers for their time and constructive feed back. I would like to thank Milan Tasic for taking my conclusions to a more general level and sharing with us his insightful notes on programming languages. I would also like to thank Georges Chapouthier for his penetrating remarks. Last, but not least, I would like to thank Konstantin Khroutski for his extensive and erudite article. On the invitation of K. Khroutski again, to whom I express my deepest gratitude for his energetic encouragement, I once more open my laptop in order to clarify some points of theory or method.

First, I would like to draw the attention of the reader to the topic, which is none other than the views of Aristotle and Plato themselves. Current studies tend to recast classic theories in the mould of our conceptual schemes. More often than not, Aristotle is drawn out of the closet in order to corroborate some modern theory in the field of philosophy of science or of virtue ethics, etc. Well, orientalism, strongly criticized today, believed at its time and with equal enthusiasm that recasting Asian intellectual traditions into familiar conceptual schemes rendered them accessible to European readers. It certainly rendered such service, but it also missed the challenge to discover a different mental universe and the chance to turn a critical eye on home assumptions. I deliberately choose another course. I go back to the source in order to find out what our forefathers thought and wrote down so as to gain new insights into philosophical issues. Both scholasticism and contemporary contextualization tend to impose their view-point on classic philosophers. Perhaps we may discover novelty and find inspiration in going back to the sources without preconceptions or pressing demand for answers to our current issues.

My purpose has been to find out whether Plato had expressed in the *Timaeus* the positions attributed to him by Aristotle. The answer cannot be a simple yes or no and I write this Post Script in order to elucidate my position on the point. Reading carefully the relevant texts, I came to the conclusion that Aristotle had manipulated the *Timaeus* theory. He had made it compatible with the Naturalists’ view of a material soul. I have explained the reasons in the main article, but I sum them up here. First, Aristotle starts from the Platonic axiom that “the similar knows the similar.” In a hypothetical Aristotelian syllogism, it follows that the soul cannot be immaterial; otherwise it cannot get to know visible objects. Therefore, and this is

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expressly written down, the soul is material. In the *Timaeus*, Plato explains the conditions of knowledge by the soul's constitution. The soul, made out of eternal and perishable essences, may know physical bodies by its perishable part and rational ones by its eternal essence. Aristotle chooses not to discuss this issue in *De Anima*. It may well be, that metaphysical questions have previously been discussed in *Metaphysics*, whilst his present topic is psychology. He is careful not to refute Plato by his own conceptual assumptions, such as the four cause theory, the three kinds of soul or even the *dynamis-enetelecheia* process. He develops logical arguments and stirs clear of ideological confrontations.

Aristotle further refutes the Platonic theory of the union of body and soul. Plato, he argues, has failed to explain the modalities of natural bodies and has thus been led to a common sense absurd position. Indeed, Aristotle continues, the soul seems to randomly unite to any physical body, regardless of its (the body's) condition, be it plant, animal or human. Aristotle has developed the theory of three types of soul, namely vegetative, sensitive and rational, in order to explain differentiation among living beings. The three types of soul determine different kinds of living beings. In the *Timaeus*, Plato explains differentiation of humans by the combination of the creation and the reincarnation theories (*Timaeus I 41D-42E*). Bio diversity comes from the divine act of creation. Souls start their incarnated life with equal chances at first birth. They choose their first bodies without apparent constraint and spend their incarnated lives in justice or in evil. Plato does not explain the circumstances which lead souls in their first incarnation to live rightly or wrongly. Beings get more and more diversified with successive reincarnations determined by previous proclivities. Flora does not seem to participate in the cycle of transmigration, whilst fauna plays an active part as the realm of inferior destinations. A comparative study of reincarnation with the Aristotelian three soul theory is a challenging topic but exceeds by far the limits of the present Post Script.

In the article, I employed a comparativist method. Instead of the tripartite thesis-antithesis-synthesis, I have followed an ascending spiral: Aristotle's criticism, verification of its eventual validity by comparison with the relevant passages of the *Timaeus*, back to Aristotle to assess his arguments and an opening forward to Descartes for a brief survey of a mechanistic model of the physical world. Reading conjointly Plato and Aristotle helps us locate the Aristotelian manipulation of the Platonic theory of the soul. Surveying the Enlightenment theory as illustrated by Descartes provides a third view-point which may work as a standard in order to understand the Platonic model of the physical world.

So, back to the question: Does Plato outline a mathematical-reductionist model of the physical world? In the *Timaeus*, Plato explains creation by successive geometric operations based on triangles. This is the clearest evidence of a geometrical model. In order to understand whether the Platonic model is both geometric/mathematical and abstract/reductionist I have recourse to the Enlightenment world view and specifically to one of its most influential representatives, namely Descartes. The French philosopher has developed a mechanistic model of natural beings which can safely be qualified as reductionist.

Physical beings are reduced to length, breadth and volume, and mechanically work in the manner of clocks. This is the prototype of a pure mathematical-reductionist model. Its pervasive influence stretches to practically all fields of scientific research until today.

It may well be that Plato has been the first philosopher to formulate a coherent mathematical model of the world. However, it is hard to characterize his model as reductionist. We need to make the distinction between ultimate and proximate causes. Our current model comes in direct line from the Enlightenment world view. This is the proximate cause. The Enlightenment thinkers took up ideas and conceptual forms from Plato in order to conceptualize their representation of reality. They thus thought to escape from scholastic obscurantism, a distorted medieval form of Aristotelism. Therefore, Plato is the ultimate cause of our current mathematical-reductionist model.

My last point concerns purpose and finality. Aristotle's major contribution to physics is without doubt the pervasive influence of the final cause as natural principle. For the first time, finality and purpose are expressly stated as the primary driving forces of living beings. Recognizing such major intellectual advance, does not mean that finality was absent from the mental universe of ancient Greeks or, by that matter, of other ancient traditions. Plato does not really depart from the common lore of a world ruled by order and moving in perfect harmony. The world is perfect, entirely good and fair. Its essence is reason and reason means choice, decision, intention and purpose. Rational beings are incarnated in order to learn, perfect themselves in knowledge and virtue and finally succeed to go back to the beatific realm of eternal ideas. To such a lofty and transcendent destiny, Aristotle speaks of the finality of natural beings as individual organisms. Purpose is immanent within the constitution of every living being. It takes the form of potentiality (*dynamis*) which may be fully activated (*entelecheia*) if the living being finds no obstacle to its exercise.

Plato may have a second reason for not inquiring about concrete living beings. He may well think that this is the business of the physicist. In the *Timaeus* (I 54B), he gets impatient with mathematical proofs and invites anyone wishing to check them to take up the task. He clearly thinks that the philosopher's task consists in formulating principles and not in bothering with mere calculations. It may well be that he envisages the modalities of natural beings in a similar manner. To describe, define, classify, etc. are plainly tasks for a physicist.

In conclusion, Plato and Aristotle cannot consistently be treated as antithetical philosophers. This Manichean opinion was first expressed and conveniently consolidated in Italian Renaissance when Platonic manuscripts started circulating among the intellectual elite. At this point, I subscribe to the penetrating remarks of M. Tasic (*On the Margins of M. Benetatou's Paper. Several Notes in Biocosmology-Neo-Aristotelism* 5[1], p. 24). Going back to the original texts, we get a more nuanced impression. They appear as two divergent versions of the same mental universe. A world ordained by logos, intelligible and harmonious, accessible to human rational faculties. Aristotle certainly went further than his teacher. He devoted his most creative years at the Lyceum to study the world of change and of physical beings. He

considered them an object of philosophy as worthy as the lofty principles of *prima philosophia*.

