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## BIBLICAL AND PHILOSOPHICAL FOUNDATIONS OF THE BYZANTINE COSMOLOGY

**Abstract:** *This article belongs to both the systematic and historical branches of Theology. On the one hand, it deals with certain issues of the discipline of Cosmology and, on the other hand, it refers to with the way in which they are developed by two leading personalities of Eastern Christianity, Philoponus and Photius. Both (with the latter commenting on a text by the former) approach the subjects of their reference in an extremely thorough manner, which can be described as not only theological –on the basis of the biblical view– but also scientific and philosophical. They take as their starting point the ontological monistic paradigm of Christianity and, according to its content, suggest that God is the Creator of the entire world. Thus, they do not adopt the dualistic paradigm of Ancient Greek philosophy, which they criticize in part.*

**Key-words:** *Cosmology, Ctiology, Byzantium, Philoponus, Photius, God, matter*

### Introduction

The question of Cosmology is one of the most popular topics of analysis in both ancient Greek and Byzantine thought, in almost all the references, but at the same time it is also an occasion for interpretative proposals concerning the natural beings which are subject to perception. Apart from the rest, it also constituted a perpetually renewed starting point, considering the inspirations it caused, in order for man to expand the levels of his communication with the supreme Principle of the cosmic universe and to give further meaning to his existence. By means of all these he believed that he would be freed from the one-meaning intracosmic activities and that he would broaden his horizons into areas not directly accessible, with the relevant uncertainties fascinating and stimulating for the unknown. Of course, between these two systems of worldviews –which could easily be described as Schools– there are clear differences, which are mainly due to the conception of God’s domain and whether matter is self-reliant or not that each has formed.

So, in the context of the Christian tradition, the term “Cosmology” is used to describe that branch of science which theoretically studies the creative movement and the archetypal range of the divine energies and their product, that is to say the entire sensible and supersensible –that is, the spiritual powers or angels– world, as substance, as structure and as function. In other words, the term refers to the process of God’s creative manifestation, which is the starting point of the “procession” or growth –and, as far as the sensible is concerned, of the evolution in time and space– of the created world from non-existence to existence, from non-being to being. Furthermore, this field deals with the purpose for which the natural world has been created and through what processes it will be brought to the realization of its ontological completeness. In other words, it investigates becoming in terms of its teleological perspective, which as such does

not end semantically with its scientific analysis, but also requires –actually extensively– hermeneutical or even axiological approaches. It is therefore closely related with what we would generally define as “Metaphysics”.

At the same time, it should be noted that in Christianity Cosmology is one of the necessary epistemological requirements of Epistemology. Every epistemological statement –as well as verbal expression– presupposes the principles which are defined by the undeniable fact that outside the human mind what exists, independently and prior to any conceptual definition and categorical formation, is the essence and energies of the triune God and the world of produced beings, an inexhaustible variety of causality. For the theoretical atmosphere of Christianity, however, more successful is the term “Ctisiology”, by which it is emphasized, to a further degree of hetero-definitions of the natural world, that God not only orders beings, but also produces them from an ontological state that does not pre-exist, that is, he constructs them with a specific temporal starting point, by being the creator of time itself, which subsequently becomes congenial with them.

From the point of view of the History of Philosophy, we would point out that the term “Cosmology” is mainly related to the tradition formed by the Platonic dialogue *Timaeus*, where the Demiurge appears –in the context of a dualistic ontological model– only as the one who puts in order pre-existing matter with the specialized delimitations of the archetypal “Ideas”, which actually have a numerical and geometric content which is actually spread in an infinitesimal way.<sup>1</sup> It should also be stressed that the introduction of historical categories into the production of the world as created frees it from the possibility of an inclusion in mechanistic processes of formal repetitiveness, as well as from a meaningless cyclicity of phenomena which would be subject to the same causality or necessity. At the same time it is quite significant that Christian thought places the relationship of the world with its divine source on a personal basis. God creates sensible –and certainly supersensible– beings impelled by his will, by his love to communicate –without ontological or any other reciprocity– with a completely new reality which he has brought into being. It is a highly intentional mode of his presence, which accurately reflects the deeper ontological texture of God, namely that he is absolutely good and does good.

We shall attempt to identify certain aspects of this question in a treatise by John Philoponus (490-570), which is entitled *Τῶν εἰς τὴν Μουσέως κοσμογονίαν ἐξηγητικῶν* (ed. G. Reinhardt, Leipzig 1897). This treatise is included –in the form of a summarized adaption, with a selection of essential points– in the corpus of the Library of Photius [Volume V, in a critical edition and translation by B. Henry, “Les Belles Lettres”, Paris 1967]. This summary is part of the evident intention of the Byzantine thinker-university teacher-Patriarch to bring the ethnic (or secular) education into a broader –comparative, quotative or synthetic, depending on the theoretical elaboration– relation with Christian theology. We will present to some extent the text as it unfolds conceptually from paragraph to paragraph –under the form of a quasi-generative method– and our general aim will be to highlight the theoretical model it proposes for both the scientific approach and the interpretation of the sensible world. It goes without saying that a philosophical and scientific figure such as Philoponus will utilize the previous relevant tradition, at least the great research and hermeneutical texts of Basil the Great and Gregory of Nyssa on the biblical *Hexameron*.

### **The historical-philological sources of the text**

In the first paragraph, the occasion for the analysis of the text is presented by pointing out the historical-philological –or, else, literary– characteristic that covers it. The sources from

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<sup>1</sup> On the Christian Cosmology, cf. for instance, Duhem 1914, 393-501. Lossky 1944, 65-108.

which the text comes, which will form the point of reference for the theoretical approach that is to be taken, are mentioned. These sources, in addition to their literary interest, may also reflect the general focus of Photius' attention on specific subject areas and scientific personalities. Besides, Philoponus was not a negligible writer in the development of the Byzantine thought, but, apart from his other studies, he was one of the most profound commentators on Aristotle.<sup>2</sup>

In the second paragraph, the same literary element is brought out in more extended terms and the conditions for the writing of the text under consideration are emphasized, in the sense of the general intellectual spirit that produced it. That is, the text is not presented as an autonomous literary genre or as a project of a researcher in the laboratory, but is placed in a context with inspirers and recipients. This excludes what we would call idealism of the authorial product or writing solely for the sake of writing. Next, an attempt is made to show the connection that exists between description and reality within the research context that the author of the text has shaped. Thus, it follows, implicitly but explicitly, that the scientist or thinker in question does not remain at a distance as a research and theoretical entity over the ontological situation to which he refers. At the same time, this shows that he does not predominantly impose a subjective approach to his intellectual world nor to his theoretical directions on the details of reality, that is, on what objectively exists. Therefore, from the outset, not only authorial but also epistemological idealism is carefully marginalized or brought under control and ontological realism is given clear priority. So, on this basis, Philoponus presents, through his commentaries, the authorial course of Moses and thus introduces, at least implicitly, normative proposals for the ways of structuring an authorial attempt of cosmological order.<sup>3</sup>

In terms of terminology, it should be stressed the world that is used is "cosmos" (world) and not to "ctisis" (created world), although it is not certain that the author emphasizes only the aesthetic dimension of creation, according to the general principles of which the creator intervenes as the one who adds order, without being clear whether he also works as a productive cause. It is worth pointing out that created world presupposes creation out of nothing (mechanistic paradigm), whereas the world, according mainly to the Platonic model, presupposes a posteriori intervention on a pre-existing matter (dualistic paradigm). Of course, the possibility here that the concept "world" is used here by expressive economy and includes, by implication, that of "created world" should not be excluded. However, since the theoretical spirit of the text is Christian, the multidimensional monistic paradigm is, in any case, without even the slightest skepticism, the exclusive basis of the analyses, synthetic and hermeneutics judgements of both Philoponus and Photius.<sup>4</sup>

### **Form the knowledge of things to the knowledge of God**

It is then pointed out that in a theocentric context, such as that described by Moses, any theoretical schematization is placed in a broader perspective than phenomena, which only grant representations and feed investigation only with external experiences. According to this distinction, reductionism is presented as necessary by virtue of the fact that in biblical and patristic teaching the world is a theophany. Thus, it is contended that Moses in his analyses put forward as a normative principle of inquiry that astronomy and natural science as autonomous scientific fields should be transcended and seen in terms of their deeper purpose, which is none other than to contribute to the knowledge of God. Thus, these sciences take meaning by their

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<sup>2</sup> On Philoponus' work, cf. Sorasbji 2010.

<sup>3</sup> On the clear realistic tendency of Christianity, cf. for instance, Lossky 1930, 279-309. Gilson 1989, 85-109.

<sup>4</sup> On the cosmology of the Ancient Greek Philosophy, cf. for instance, Furley 1987.

projection into a theoretical domain that transcends them and which reflects absolutely ontological characteristics and obviously highly superior to empirical or the simple sensoriality. That is, from a Christian perspective, knowledge takes on its full meaning in the case where science is completed or interpreted or signified by theology.<sup>5</sup>

Through the next reasoning, the aforementioned issue is strictly transferred to the ontological area and it is emphasized that God is presented in the biblical texts as the creator of the world. This is a definition which introduces the principle of radical causality and, therefore, that the world is not self-created. Therefore, we can easily argue that an unconditional cosmic self-formation is ruled out here, such as from a pre-existing matter or from autonomous elementary particles which would have the conditions to engage, strictly on their own terms, in mutual communications. In other words, both a fully liberated function of matter and its opposite, mechanistic automatism, are again put to the side.<sup>6</sup> We would even note as a strong possibility that here, too, an indirect criticism with no explicit references of Ancient Greek Cosmology is being made.

The extensions of causality are inevitable in the cause-effect relation. The exclusion of automatic production is thus brought to the fore, now clearly stated, and, therefore, it is argued that there is a plan that derives from the metaphysical domain and projects ad extra as an active presence all those factors for the constitution of a new ontological field. In the mainly Christian perspective, it is the transformation, so to speak, of the divine powers or energies, without, of course, their slightest ontological alteration by their presence in sensible beings and phenomena. We would therefore conclude that all these do not project an integral metaphysics of immanence, which would absorb the metaphysics of transcendence.<sup>7</sup> According to the context of the more general cosmological positions of Christianity, the term “methexis” (participation) must be implied here, which refers to the, in each case specialized, way of reception of the divine gifts by the sensible beings, but without even the elementary ontological confusion between them.

These lead to the explicit denial of the coeternity between God and the world and, by extension, to the exclusion of pantheism. God is not bound by any internal or external necessity to create. On the basis of the fact that God has not developed –certainly not for reasons of weakness– from the outset in his interiority the ontological conditions for the formation of the natural universe, but constitutes them on a second level -that of his projection- leads to the position that he has the freedom to create a new reality outside himself, radically different from himself. Therefore, for epistemological delimitations it is also necessary to put forward the validation of the metaphysics of transcendence, as a starting point for the activation of causality but also not altering itself in the least.<sup>8</sup>

### **Biblical and Greek Cosmology**

Subsequently, a comparison of Greek Philosophy with Biblical Theology is attempted and without hesitation and scepticism, a new evaluative priority is given to the latter. Here the

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<sup>5</sup> On the relation of the Christian Theology with Science and Philosophy, cf. for instance, Piguet-Widmer 1991.

<sup>6</sup> On the general rationale about the creation of the sensible world according to the teachings of Eastern Christianity, cf. Nisiotis 1986, 46-47, where we also see hermeneutical approaches of this fact.

<sup>7</sup> The most systematic elaboration of the theory of the divine powers-energies in Eastern Christianity is found in Gregory Palamas’ treatise *Περὶ θεϊῶν ἐνεργειῶν καὶ τῆς κατ’ αὐτὰς μεθέξεως*, 96-136.

<sup>8</sup> On the metaphysics of transcendence in Dionysius Areopagite -one of its most emblematic exponents-, see, for example, Semmelroth 1950, 209-234. But here, too, we have to refer to Gregory Palamas and his treatise *Ποσαχῶς ἡ θεία ἔνωσις καὶ διάκρισις*, 69-95.

traditional approach of Christian doctrine is followed, according to which the Old Testament Cosmology, as it is presented in the book of *Genesis*, constitutes the essential theoretical foundation for later Christian doctrine. Therefore, it is necessary to bear in mind the possibility of a permanent critical—at least moderate—position of Philoponus and Photius against the ancient Greek Cosmology and a very limited emphasis on its equivalence with the Jewish one, in the form of only a few complementary interventions. We believe that we should opt for the moderate approach, since Philoponus at least was an ardent scholar of Greek Philosophy. Once again, we could easily argue, based also on the more general context of the Christian tradition, that the Byzantine philosophers-theologians were critical of their ancient Greek counterparts in that they detected a clear dualism, especially in their theoretical premises. The Greeks did not accept the creation of the world out of nothing and maintained that matter is self-created, without an external cause which produces it. Therefore, they posited two levels of causality, the substrate and the divine intervention which shapes and decorates them and provides them with rational possibilities of operation.<sup>9</sup> It is interesting, however, that the theoretical activity of both Moses and Plato is characterized as theology rather than science or philosophy. This is a remarkable categorical definition. We should add, however, that Christianity also differs from Aristotle, who advocated a relation from the outset—the existence of “forms” in matter—which is subsequently activated by the first unmoved mover.

Then, questions of justification of creation are raised, in the sense of identifying the individual causes that cause it, again with references to the correspondence between Moses’ sayings and what is happening in the cosmic reality. Given this, but also in accordance with the context of the previous paragraph, in all likelihood Photius’ mild critique of ancient Greek cosmology will implicitly continue. As to the general principles to be followed, the textual data lead us to believe that here too Ontology (as Cosmology) is considered as constituting the basis of Epistemology and Science in renewed terms. With this new starting point, the priority of ontological realism over the quests and formulations of the theoretical knowledge is further extended. The aim is clear: to reinforce, as far as possible, a position which is a leading choice for the teaching of Eastern Christianity and which is linked to the fact that the creative work of the triune God takes precedence over any vision and scientific approach to it. Thus, the normative function is posited as follows: human consciousness is asked to know and integrate metaphysical and natural reality into a system of conceptual categories, without relying on its own a priori conceptual material but only on the innate potentialities for its formation. In other words, for its system of concepts to be true, it must be constituted a posteriori, it must not be closed and it has to be constantly enriched according to the expansion of its cognitive relationship with the uncreated and the created. In fact, it is not insignificant that the text under consideration emphasizes the open character of Moses’ positions with regard to his integration in the evolution of human thought, which he even appears to catalytically determine. In other words, it is emphasized that everything that will emerge in the future as a product of natural science has been prefigured in the work *On Genesis*, so that it will consequently be recognized as being inspired by God. In modern terms, Moses’ positions constitute an epistemological commitment for subsequent accounts of nature, whatever School of thought they may come from.

### **Special literary remarks**

Subsequently, historical references of literary interest are made, once again, with the aim of validating the argumentation that is expressed throughout the text by means of references

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<sup>9</sup> On the content attributed to matter by the Ancient Greek philosophers and especially Plato, see, for example, Schultz 1966; Sinnige 1968; Festugière 1990, 92-151; Brisson 1998.

to persons-writers from the past. This is a common descriptive and scientific strategy of the Byzantine thinkers, in order to establish more objectively or even to broaden the theoretical horizon of their observations. In this perspective, they are traced back to the tradition validated by the Ecumenical Councils, or at least by ecclesiastical life in its historical course. And the reference to specific persons includes those who are considered to belong to the orthodoxy of the Fathers and those who have caused disagreements and disputes with their heretical views and have shaken ecclesial unity.<sup>10</sup>

### **Towards an attempt to specialize Christian Cosmology**

In the next thematic section, references are made to two specific cosmological issues, those of generation and time. In particular, it is emphasized that time does not pre-exist creation, precisely because the inclusion of the production of God's manifestation in an ontological category that has physical-empirical –that is, heterogeneous, detectable and measurable– characteristics must be excluded. God creates time and at the same time the natural universe. Therefore, time is an inherent element of the universe from the beginning, a given ontological property of it, and not an additional accident. It is also not a precondition for the possibility of God's forming of matter, but only grants it the duration that allows it to gradually make use of the gifts it has received. The whole of the conditions for such an intervention are exclusively set by God himself. In fact, it follows from the context that time does not constitute an a priori form of supervision, nor does it function merely as a measuring factor. Therefore, both the position of understanding time as an autonomous theoretical construction of the thinking subject and, by extension, gnoseological idealism are ruled out.

In direct relation to these, the concept of principle comes to the fore, which is related to time, so we would argue that the universe has, in an extended sense of the term, historicity. That is to say, it emerges once again that time does not constitute, with regard to certain inherent seminal states, a necessary and pre-existing ontological datum with acquired cyclical reproductions, but has a specific starting point, by which its evolution, or its coexistence with the evolution of the natural universe, is measured. It is actually an evolution that occurs in any individual being, which on a microcosmic scale has –or is passing through– its own time. Thus, time is a universal cosmological framing for everything that is already subject to or can be integrated into sensory experience.<sup>11</sup>

Subsequently, some conceptual special comments on the principle are made in order to further strengthen the general theoretical bases suggested. This is obviously a necessary point, the main purpose of which is to avoid, as far as possible, those misinterpretations which would result from axiomatic considerations and without the necessary research verification. For example, it is stated by both the authors that the term «ἀρχή» as a starting point accurately describes the time in which the natural world in its entirety is created. So, what could be said about cosmic historicity ensures clear validation and does not constitute a narrative or by analogy allegorical mean.

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<sup>10</sup> On how the tradition functions in Eastern Christianity with regard to cosmological issues and in relation to theoretical currents that have appeared in the modern and contemporary era, cf. Serrard 1992.

<sup>11</sup> On the concept of time in Christianity, cf. Benakis 1980-1981, 398-421. On a general approach of the topic, cf. Gilson 1989, 38-84. Certainly Philoponus' commentary to Aristotle's *Physica* constitutes perhaps the most emblematic treatise, both scientifically and philosophically, of the time in the context of Byzantine thought.

## Conclusions

Based on what we have discussed, we believe that we are in a position to come to the following conclusions:

I] Philoponus and Photios can be characterized as systematic scientists and analysts with historical-philosophical foundations, while at the same time they highlight certain stages, with actually an accurate description of the general principles, of the Byzantine thought in the field of Cosmology-Cisiology.

II] Both thinkers-theologians move clearly in the Biblical perspective, a detail which means that they attempt to establish a cosmological theory which would not lead to a dualism which would be subversive of the absolute omnipotence of God over the whole of ontological reality, both the supersensible and the sensible one. Christianity has “altered” the ancient Greek cosmological criteria, but without leading to complete rejections of their content. In any case, however, both Philoponus and Photius take a text from the Old Testament and approach it also under the new theoretical data that have since emerged. And this approach is not without theoretical proposals from Ancient Greek Philosophy, which up to the sixth century AD (the date when the activities of the Platonic Academy were suspended) has an impressive performance to show.

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## **Христос Терезис**

### **БИБЛИЈСКО-ФИЛОЗОФСКЕ ОСНОВЕ ВИЗАНТИЈСКЕ КОСМОЛОГИЈЕ**

Овај чланак припада једнако систематским као и историјским гранама теологије. С једне стране, бави се одређеним питањима дисциплине космологије, а са друге стране, односи се на начин на који та питања разрешавају две водеће личности источног хришћанства – Филопон и Фотије. И један и други (с тим што овај други коментарише текст првог) приступају предметима свог позивања на крајње темељан начин, који се може описати као не само теолошки – на основу библијског погледа – већ и научни и филозофски. Они за полазиште узимају онтолошку монистичку парадигму хришћанства и по њеном садржају сугеришу да је Бог Творац целог света. Дакле, они не усвајају дуалистичку парадигму античке грчке филозофије, већ је делимично критикују.