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SOME ASPECTS OF THE CONTROVERSIAL NEXUS BETWEEN
SCIENCE AND RELIGION

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Motto: «What is the use of reasoning about the nature of grace if one does not experience its action in oneself? What is the use of declaiming about the light of Tabor if one does not dwell in it existentially? Is there any sense in splitting theological hairs over the nature of the Trinity if a man has not within himself the holy strength of the Father, the gentle love of the Son, the uncreated light of the Holy Ghost?» (Elder **Sophrony** of Essex)

Abstract

The present paper takes into consideration a few aspects related to the relation between the two disputed domains of knowledge: science and religion. After having pointed out the main eight warfare and nonwarfare models of interaction between science and religion, the study focuses on the motives of Eastern and Western Christianity breach, which resides on the very different attitude to Science and Nature. The main part of depicting the nexus between the two fields of research is focusing on the doctrine of creation, the one Christian theology truly revolutionized. The Christian Weltanschauung was so new in comparison with Greek cosmology that it had to raise new questions and make radical modifications, especially regarding the understanding of space and time. The Fathers of the Orthodox Church were happy to use the science and philosophy of their time in their theological thinking. However, they did not pursue a natural theology in the sense the term is often now understood based on scholastic theology. According to the Orthodox understanding, the intellect provides not knowledge about the creation but rather a direct apprehension or spiritual perception of the divine Logos (Word) incarnate in Christ, and of the inner essences or principles (logoi) of the cosmos components created by that Logos. The arguments of Orthodox Christian theology proof that the quantum universe was created out of nothing and that it is kept in existence only by God's relationship with creation through Jesus Christ and the Holy Spirit. In relation to itself, the universe is reduced to nothing, because God is in Himself, while any other created thing is dependent upon Him, into an indissoluble connection with Him. According to creation theology, God gives the world its rational, intelligible structure as described by the laws of nature through the transcendent and eternal act of bringing the world into existence *ex nihilo*. As immanent creator, God also continues to create (*creatio continua*) and providentially direct processes and events towards their consummation in the eschaton. Overall, there is a poignant reason for keeping science and religion together once “science without religion is lame and religion without science is blind” (Einstein).

Keywords: science; religion; philosophy; knowledge; nature; doctrine of creation; Logos;

1. INTRODUCTION

It is a sheer fact of history that the dialogue between theology and science became a common topic for academic discussions within the last thirty to forty years. One can raise a naïve question on whether this dialogue has succeeded so far, i.e., has it achieved certain results which have had impact on both science and theology? What is beyond doubt is that, regardless of any cautions from theology, scientific advance continues with the same intensity and impetus as in the 20th century. The dialogue with theology has an impact in the bio-ethical issues of the medical sciences and, to some extent, in the field of ecology, by what is called lately Ecotheology. However, in a wider context, one must admit that all discussions about whether science and theology are in conflict or in a sort of “peaceful coexistence” do not have serious existential implications: the problem remains and its ongoing presence points to something which is basic and unavoidable in the overall human condition. In this manner, the two research “camps” have long been in irreconcilable-antagonistic positions, very few bridges spanning between them.

The more important than the historical considerations in the conflict between the two domains of knowledge are the philosophical obstacles, especially the epistemological ones, which religion and theology pose to the skeptics of science. The main problem is that religious ideas seem not to be experimentally tested. In other words, they apparently escape the rigors of public scrutiny, while science always obeys the ideas of open experimentation. If an empirical research shows that a scientific hypothesis is wrong, science puts it aside and looks for alternatives, subjecting them to the same rigorous verification process. But can we do the same thing with religious teachings? Theists, for example, continue to believe in God, no matter what they observe around them, including enormous suffering and evil. The followers of scientific skepticism say that religion does not have the solid probity of science. The God-hypothesis, for example, seems to be totally out of any falsification, so it cannot be accepted by the ‘courthouse’ of science. On the other hand, within the many debates among the representatives of the two paradigms of knowledge, there have been several important names of philosophers of science or physicists who have pleaded for the Christian origin of modern science. We mention, inter alia, only the Romanian physicist Basarab Nicolescu and the French philosopher Alexandre Kojève. (Alexandru-Corneliu ARION, 2017, 21-6).

Today it is clear that the impetuous energies of the human-minded spirit begin to quench, so that we do not signal – only very sporadically – the “tantrums” of the scientists against the adepts of religious thinking. For at the epistemological level in the dispute of science versus religion, it is becoming increasingly clear that the scientific model, blocked for centuries in its reductionist prejudices, seems to be now intuitively bringing near the prospects of a deeper knowledge, of the spirit of the theological approach.

2. WARFARE AND NONWARFARE MODELS OF INTERACTION BETWEEN SCIENCE AND RELIGION

In the last two decades headlines scream the conflict thesis: “God vs. Science” and “Religion and Science Will Always Clash” (David Van BIEMA, 2006). Sam Harris, in “Science Must Destroy Religion,” writes, “The conflict between science and religion is inherent” (Sam HARRIS, 2006, 15). One reviewer of Richard Dawkins’s *The God Delusion* sketched out the cultural import of his book: “It was refreshing to see the publication of Richard Dawkins’s book *The God Delusion*. It is not every day that one of the premier evolutionary biologists in the world publishes a text dedicated to the defense of atheism. Dawkins has done us a service, if only in making more acceptable the general proposition that religion and science are at odds with each other, and that it is science that should win out” (Joe KAY, 2007). According to the conflict thesis, as science fills the cup of reason, irrational religion spills out. When the cup of reason is finally full, religion will have evaporated.

Despite being widely held, the Conflict Thesis has been rejected by historians, philosophers, and scientists – theists and atheists alike. For example, when we look at the scientific Revolution (the scientific developments that began in the sixteenth century and progressed through the seventeenth century), the place where science as most of us know it began, we discover that the scientists involved, people like **Copernicus**, **Galileo**, **Robert Boyle**, and **Isaac Newton**, were *deeply and sincerely religious*.

Modern science sprang from religious believers and religious belief. Not only were these early scientists religious, but their religious beliefs also motivated, and even informed their pursuit of science. (Kelly James CLARK, 2014, 31)

What was it about their religious beliefs that proved such fertile ground for the development of modern science? Why **Christian belief** and not the belief systems that preceded it? Why did modern science develop in the Christian West and not, for example, in the advanced culture of China?

While we can't answer all of these fascinating questions, we come to know that three key thinkers: Francis Bacon (1561–1626), Robert Boyle (1627–1691), and Isaac Newton (1642–1727), who exerted a profound influence on the “new science”, did not “discard” the religious demarche. F. Bacon, considered the father of the modern scientific method, was not himself a scientist, yet he provided the philosophical foundation of the scientific revolution. R. Boyle, the father of chemistry, put into practice the experimental philosophy advocated by Bacon. I. Newton, the father of physics, was one of the greatest scientific thinkers of all time. *But, each of these thinkers was motivated in their scientific pursuits by their deeply held religious beliefs.*

Francis Bacon, Robert Boyle, and Isaac Newton – three of the greatest thinkers of the scientific revolution – were keenly attuned to the role their theological beliefs played in their investigations of nature. Through their hard work and brilliant insights, modern science was born. Far from being antagonistic toward science, their faith motivated and even informed the development of science. In his famous *Principia*, Newton would write:

“This most beautiful system of the sun, planets, and comets could only proceed from the counsel and dominion of an intelligent and powerful Being. And if the fixed stars are the centers of other like systems, these, being formed by the like wise counsel, must be all subject to the dominion of One” (Isaac NEWTON, 1713, 908-909).

The religious beliefs of these early scientists provided a foundation – a God-created cosmos and a God-created mind – for investigating nature.

This investigation was carried out with the confidence that a world created by God is orderly and regular. By experimentation and observation, we can attain to an understanding of the created world. Science found fertile ground in the Christian West. As contemporary physicist Paul Davies reminds us:

“Science began as an outgrowth of theology, and all scientists, whether atheists or theists accept an essentially theological worldview” (Paul DAVIES, 1995, 138).

Science arose among natural philosophers who believed the world to be the design of God. In their quest for *scientia*, a complete and full understanding of reality, they perused God's two books – Scripture and Nature – to learn the mind of God. Kepler, for example, conceived of astronomers as “priests of the most high God, with respect to the book of nature.” Robert Boyle regarded the activities of natural philosophers as intellectual worship of God. This is the theological worldview within which modern science blossomed (Kelly James CLARK, 42).

Therefore, if one excludes God from the definition of science and, in one fell definitional swoop, then you exclude the greatest natural philosophers of the so-called scientific revolution – Kepler, Copernicus, Galileo, Boyle, Newton and many others.

In other words, the “warfare thesis,” sometimes called the “*conflict*” model, is but one way to think of the relation of science to religion. The agenda of the field of science and religion is to find a nonwarfare or cooperative pattern of interaction. (Ted PETERS, 1998, 13-22; Ian G. BARBOUR, 1990). At the beginning of the twenty-first century, eight patterns of interaction are discernable, four fitting the warfare interpretation and four that embrace peaceful cooperation, if not integration.

1. **Scientism.** In the contemporary West, the term *scientism* refers to naturalism, reductionism, or secular humanism – that is, the belief that there exists only one reality, namely, the material world, and that science provides the only trustworthy method for gaining knowledge about this material reality. Science has an exhaustive monopoly on knowledge, rendering all claims by religion about knowledge of supernatural realities as fictions or pseudo-knowledge (Celia E. DEANE-DRUMMOND, 2001). All explanations are reducible to secularized material explanations. Religion is defeated in the war by ignoring it. Here, *scientism* does not mean exactly what it did a century ago in China. Science then appeared as a potential savior, an antireligious and anti-traditional force of revolution that would liberate modern people from their oppressive past. In contemporary intellectual debate, *scientism* still connotes

liberation from oppressive religion, but it is restricted to methodology rather than politics and economics. (Ted PETERS, 2002)

2. **Scientific imperialism.** This is scientism that does not ignore religion; rather, it uses materialist reductionism to explain religious experience and reassess theological claims. Scientific imperialists grant value to religion and religious values, and may even grant the existence of God, yet they claim that science provides a method for discerning religious truth that is superior to that of traditional theology. In contemporary discussion this approach is taken by some physical cosmologists when explaining creation or eschatology, and by sociobiologists or evolutionary psychologists proffering a biological explanation for cultural evolution including religion and ethics (Nancey MURPHY and George F. R. ELLIS, 1996). Here religion is defeated in the war by conquering and colonizing it.

3. **Ecclesiastical authoritarianism.** According to this model, which defends the reverse of the previous two models, modern science clashes with religious dogma that is authoritatively supported by ecclesiastical fiat, the Bible, or in Islam by the Qur'ān. The 1864 Syllabus of Errors, promulgated by the Vatican, asserts that scientific claims must be subject to the authority of divine revelation as the church has discerned it. The Second Vatican Council affirmed academic freedom for natural science and other secular disciplines (Ted PETERS 2005, 8185), removing the Vatican from warfare and placing it in the "Two Language" model.

4. **The battle over Darwinian evolution.** A war is currently being fought between the Darwinian theory of evolution, especially the concept of natural selection, on the one side, and scientific creationists, Intelligent Design advocates, and some factions within Turkish Islam, on the other side. The scientific creationists are heirs to fundamentalist Protestantism; they argue that a fair assessment of the science will show the inadequacy of natural selection to explain what appears to be evolution from one species to another, and this failure to provide a satisfactory scientific explanation indirectly supports the biblical description of creation (Holmes ROLSTON, 1999). Intelligent Design advocates similarly criticize the explanatory adequacy of natural selection, arguing that evolution from one species to another constitutes a leap in complexity, and that advances in complexity require intervention by a transcendent intelligent designer – in other words, materialist explanations are inadequate (Ted PETERS and Martinez HEWLETT, 2003). Some Muslims in Turkey are showing interest in these two Christian groups because of their desire to combat the secular orientation toward education in a traditionally religious society. That a war is being fought is clear. However, because the actual points at issue deal specifically with the explanatory adequacy of natural selection, it would be misleading to simply dub this a war between science and religion. The evolution battlefield is primarily North America, Australia, and Turkey, with little or no notice in Europe or in other discussions of science and religion.

5. **The Two Languages.** The notion that science speaks one language, the language of facts, and religion speaks a different language, the language of values, is the dominant nonwarfare model (Noreen L. HERZFELD, 2002; N. H. GREGERSEN, W.B. DREES, and U. GORMAN, 2000). The Two Language model – sometimes referred to as the "independence" model – is the prevailing view of both scientists and theologians in Western intellectual life. Science attends to objective knowledge about objects in the penultimate realm, whereas religion attends to subjective knowledge about transcendent dimensions of ultimate concern. Modern persons need both, according to Einstein, who claimed the following: "Science without religion is lame and religion without science is blind" (Ravi RAVINDRA, 1987, 71–72). This Two Language model should not be confused with the classic model of the Two Books, according to which the book of Scripture and the book of nature each provide an avenue of revelation for God. The difference is that the Two Books model sees science as revealing truth about God, whereas the Two Language model sees science as revealing truth solely about the created world.

6. **Hypothetical consonance.** Going beyond «the Two Language view» by assuming an overlap between the subject matter of science and the subject matter of faith, *consonance* directs inquiry toward areas of correspondence between what can be said scientifically about the natural world and what can be said theologically about God's creation. Even though consonance seems to arise in some areas, such as the apparent correspondence of Big Bang cosmology with the doctrine of creation out of nothing, consonance has not been fully confirmed in all relevant shared areas. (Arthur PEACOCKE, 1993). Hence, the adjective *hypothetical* applies to theology as well as science. The central hypothesis of this model is that there can be only one shared domain of truth regarding the created world, and science at its best and faith at its best both humble themselves before truth; one can therefore trust that consonance will

eventually emerge. Hypothetical consonance provides the warrant for what some call “dialogue between science and theology,” and others the “creative mutual interaction of science and theology.” (Niels H. GREGERSEN and J. W. Vrede VAN HUYSTEEEN, 1998).

7. **Ethical overlap.** Building on the Two Language model, wherein mutual respect between scientists and religious leaders is affirmed, some exhibit a strong desire for cooperation on public-policy issues deriving from science and technology. The ecological crisis and human values questions deriving from advances in biotechnology both enlist creative cooperation.

8. **New Age spirituality.** Having left the conflict or warfare model behind, synthetic spiritualities, such as those found in the New Age movement, seek to construct a worldview that integrates and harmonizes science with religion. Evolution becomes an overarching concept that incorporates the sense of deep time and imbues the development of a global spiritual consciousness as an evolutionary advance for the cosmos. Many here are prompted by the visionary theology of Teilhard de Chardin (1881–1955), although this Jesuit forerunner could not himself be categorized as New Age. Others in the New Age movement seek to integrate the experience of mystery with advanced discoveries in physics, such as indeterminacy and quantum theory. (Paul DAVIES, 1983; Philip CLAYTON, 1997).

Whereas these final four models take us beyond conflict or warfare, the Two Language view presumes independence, while hypothetical consonance, ethical overlap, and New Age spirituality seek a fuller integration. When it comes to research, publication, and conferencing within the field of science and religion, most frequently the assumptions of hypothetical consonance prevail with dialogue pressing toward creative mutual interaction. (Ted PETERS, 2005, 8186).

3. THE BREAK-UP BETWEEN EAST AND WEST DUE TO A DIFFERENT ATTITUDE TO SCIENCE AND NATURE

The split between East and West through its implication in science and technology, by contraposing a modern stance with respect to them as it exists in the West to that allegedly lost approach to the natural sciences which was in existence in the Christian world before the formal split in the Church and before the rise of what is generically called scholasticism – is to be noted in order to understand the disintegration between the two poles of spirituality. (Alexei V. NESTERUK, 2008, 21).¹

The difference between Eastern and Western Christianity, which is described by prominent American Theologian, George Florovsky as the disintegration of the common Church’s mind, has another, more specific context which can be depicted as a particular (sometimes very negative) attitude of Orthodoxy to the West, where the West stands for a short form of describing a basic human attitude to the world as it has developed during recent centuries in Western Europe and America after the rise of the positive sciences and technology. In its deep foundation this attitude goes back not only to the era of scientific revolutions and cultural Renaissance, but even further in history to those intellectual and social structures of the Medieval West which manifested their difference with the Byzantine East. In fact, one can descend even further in the early patristic period and detect some seed-like differences in attitude to the world and the natural sciences in Greek and Latin theology, which, in a way, contributed to the fragmentation of the common spirit of the Christian Church later.²

The rise of the Western modernity is often associated with the names of Descartes and Galileo, whose contribution to the Western philosophical and scientific thought is considered as one which shaped modern technological civilization and initiated the split of that intrinsic unity of theology and science that existed before. However, Descartes’ thought can be treated as a consequent development of those

¹ Here one should exercise an extreme caution in articulating this relationship, for any simplified view of the progress and development of Western Christendom and the scientific and technological civilization of the West is untenable. The topic of the deviation of the West from Orthodoxy was extensively discussed in the nineteenth–twentieth centuries by Russian philosophers, beginning with A. Khomyakov and continued by N. Berdyaev and V. Zenkovsky. In the West, the major expositors of such a critique were C. Yannaras and Ph. Sherrard.

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intellectual ideas which have their origin in the Western scholasticism. (M. Heidegger, 1962, 46).³ What stands here for scholasticism is an ambition to secure control and access to truth by means of intellectual effort to outline the boundaries between man's capacities to comprehend the created realm and its creator and the transcendent reality of God. In fact, the roots of what was later called scholasticism can be found back in St Augustine. (J.-L. MARION, 1999, 129f.)⁴ This fact indicates that the hidden theological differences between East and West and their implications with respect to the natural sciences, which were amplified by Descartes in the seventeenth century, had already existed as far back as the fifth century.

The scientific enterprise in the Christian world came to know a split residing in the difference of attitude towards nature and science that can be observed in Greek Patristic thought and the Latin Tradition. Both the Greek and the Latin Fathers had to address the issue of natural philosophy and science in their theological reflections. In doing this, they inevitably transmitted the science of the classical Greco-Roman tradition down through the centuries.

Thus, the occidental Fathers' strong preference for Platonic philosophy continue to influence the development of science until the 12-th century, when the writings of Aristotle became fully available in Western Europe and were housed by Christian thinkers.

The classical image of nature was *de-divinized* by Christian thinkers, who approached it in a new way. Nature was freed from the Hellenistic gods who use to inhabit its elements and was secularized in the sense that instead of worshipping nature, the Church Fathers worshipped its Creator. They treated nature as good and beautiful, since that was the good creation of the summum Bonum⁵: God.

What distinguishes the view of science in the *Patristic era* from that of the present day is that when the Fathers talked about science theologically, they dealt with the scientific laws and symmetries, which reflected an essentially Platonic understanding of the world, rather than with the particular empirical outcomes of these laws, which manifested the deviation from the Platonic symmetry in the concrete empirical situation. The complex outcome of physical laws apparent in nature became the subject of thorough scientific analysis only later, when Aristotelian philosophy and physics began to dominate Western European thinking. It was much easier for the Fathers to think in terms of Platonic regularities in nature than to investigate the particular empirical situations that are, in fact, the outcome of these laws. Thus, the Platonic approach to science was insufficient for its advance and why the Fathers – and their implicit civilization – did not contribute to empirical research, which generally deals with the *outcomes* of the underlying laws. (Alexei V. NESTERUK, 200, 37).⁶

It was once with *St Augustine* (354 - 430) that the split took shape, in the sense that physical, material nature was separated from the divine not only ontologically, but also in terms of God's grace. On the one hand, Augustine argued, the material universe should be understood in the light of Christ, yet, on the other, the same universe cannot participate in the life of the Divine. As a result, knowledge of finite things in the universe has no theological relevance, since through this knowledge one cannot participate in the Divine. It was this stance that made it possible for Augustine to put forward his handmaiden formula for science (the famous Latin adage: "philosophia/scientia ancilla theologiae"). In the actual, fallen world, the gulf between God and the created, according to him, is unbridgeable. The natural world, including humans, has no chance to participate in the grace of God, even extrinsically.

For the Greek Fathers, nature was a manifestation of God, a revelation of God's loving activity through the divine *logoi* (rationalities) in a world that is good. Knowledge of nature was, for them, a part

³ It is enough to make a reference to Martin Heidegger, who pointed that Descartes was philosophically dependent upon scholasticism and employed its terminology.

⁴ When discussing the very basic Cartesian formula 'cogito ergo sum', which instituted ego, as *cogitatio*, at the origin of all science, it is historically paralleled with the text of St Augustine in *City of God* (XI, ch. 26), as well as to some other texts, including *The Soliloquies* (2, ch. 1). See also J.-L. MARION, *On Descartes's Metaphysical Prism*, Chicago and London: The University of Chicago Press, 1999 pp. 129f.

⁵ 'Summum bonum' (Latin expression meaning "the highest good") is generally thought of as being an end in itself, and at the same time containing many other pursuits typified as Good by philosophers of the time. The term was used in medieval philosophy. In the Thomist synthesis of Aristotelianism and Christianity, the highest good is usually defined as the life of the righteous and/or the life led in communion with God and according to God's precepts.

⁶ Nevertheless, this was not the main reason for their lack of contribution to science. They were clergies, not scientists, and were primarily concerned with the theological issues that arose as they sought to defend their faith. Thus, they felt called to make use of science, but not to develop it.

of the fullness of their liturgical experience, an experience that gave meaning to science and made it capable of leading people to knowledge of the *logoi* of created beings. If the Greek Fathers saw scientific activity as a mode of the liturgical experience, understood through participation in the creative energies (and divine *logoi*) of God, then Augustine saw science as no more than a handmaiden of theology devoid of deeper spiritual meaning. This in turn, led eventually to the divorce of science and theology and the mutual incomprehension that we see many a time today. (Philip SHERRARD, 1991, 90-112).

Theology, as experience of faith, was always thought as the pillar and ground of knowledge and its implications, forming thus a ‘special subject matter’ which cannot be fully apprehended by methods of the positive sciences and discursive philosophy. It is here, at this point, that *Orthodoxy* claims that Western Christianity, by adopting discursive thinking (detached from experience of faith and sanctifying power of the spiritual intellect *nous*), as its basic theological method, subordinated the realities of the Divine to rational philosophy, thus transgressing the limits of its applicability and, *de facto*, fitting the Gospel message and the Divine revelation into the norms of the human philosophy. Here is where the basic Eastern Orthodox objection to that which is generically known as scholasticism can be seen: one cannot subordinate realities of the Divine to the limits of the discursive reason. (P. Sherrard, 1995, 155).⁷

4. CHRISTIAN REVOLUTION. THE DOCTRINE ON CREATION

The most revolutionary change that Christianity introduced into Greek cosmology (Norriss HETHERINGTON, 2003, 177)⁸ was the doctrine on *creation*. It was inherited by Christianity from the Old Testament, but the doctrine seemed to be so clear that it was necessary to introduce it only to pagans converted to Christianity (see Acts 17, v 16 sq.). However, in the Prologue to the Fourth Gospel it is not difficult to identify concepts that penetrate more profoundly into the Old Testament doctrine on creation. The Word - *Logos* had already appeared in the teaching of Heraclitus as a force ordering and unifying the World. Philo of Alexandria tried to connect the Greek understanding of *Logos* with the Old Testament usage of the term “word” (*dabar*) with respect to God (e.g. “God said ... and it has been made” – Gen 1). Independently of the profound theology of the Prologue, the very fact that the Greek concept of *Logos* (albeit Christianized) played a central role in its composition was of great significance for the process of the assimilation of Greek culture into Christianity. (George V. COYNE and Michael HELLER, 2008, 47).

Generally speaking, the Old Testament always understood creation as the absolute dependence of the world on God. Early Christian writers, while not neglecting this meaning, could not resist the temptation to inquire into the “mechanisms” of the world’s origin. In the Old Testament there are no traces of this temptation; its appearance at the beginning of Christianity is probably already a symptom of the tendency to approach religious doctrine with heads “contaminated” by the Greek spirit of rationality. Justin the Martyr (*Apologia*, 1,59), Irenaeus (*Adversus Haereses* 2,1) and Clement of Alexandria (*Stromata*) connected the idea of creation with its Platonic understanding as a construction of the world from pre-existing matter. They simply put more emphasis on God’s omnipotence, and ascribed creation itself to His free will. But already in the *Shepherd* of Hermes there appears a theological elaboration of the creation concept as a transition from non-being to being. (H. CHADWICK, 1983, 11–13).

This doctrine was certainly a reaction against the Gnostic tenet that matter is the “principle of evil.” Many Christian writers objected to this view by claiming that even matter is the work of God. This doctrine was developed by Origen (in his famous *De Principiis*) who strongly objected to the Platonic

⁷ P. Sherrard, together with other Orthodox writers, points towards St Augustine, who was the first to make the disjunction of faith and reason, whose consequences were felt throughout the whole history of the West: ‘The divorce of revelation and reason, metaphysics and science, implicit in the philosophy of St Augustine and fully recognized in that of Scholastics, both indicate to what extent the theoretical basis of the Christian realization was weakened in the West by the nature of much Western medieval theology itself, and also prepared the ground consequently for the whole revolution of thought which was so to modify Western society and culture.’

⁸ Greek cosmology moved away from astrological superstition, magical powers, and myth toward a more rational spirit and a picture of a universe with unchanging ways ascertainable by human reason but beyond the control of human action. Anaxagoras’ new theory of universal order collided with popular faith –the belief that gods ruled the celestial phenomena – and he was expelled from Athens. Impiety, however, may have been an incidental charge. The rise of a new scientific attitude and mode of thought may have accelerated the downfall of traditional religious and political beliefs and helped shape their replacements.

teaching on pre-existing matter, and introduced the concept of creation ‘out of nothing’ (*creatio ex nihilo*) into Christian teaching. However, the full elaboration of the idea of creation belongs to St. Augustine.

The doctrine of creation was so new in comparison with Greek cosmology that it had to raise new questions and make radical modifications, especially with regard to the understanding of space and time. Origen had asked the question: what did God do before the beginning of the world? (ORIGEN, *De Principiis* 3,5,3). Augustine supplemented it with another question: where was He before Heaven and Earth came into being? (St. AUGUSTINE, *Confes.* 11,10). In Augustine’s writings one can find many remarks and comments concerning these matters. They culminate in a chapter of *De Civitate Dei* (XI, 5), in which he argues that all speculations about space and time before the creation of the world are meaningless since no space and time utterances can refer to God.

These speculations led to the question of the nature of time. Augustine’s saying:

“What then is time? If nobody asks me, I know it. But if I am asked about it and wish to explain it, I do no longer know it,” (*Confes.* 11,14).

became a motif of many dissertations on time. The bishop of Hippo, relying on Aristotle’s physics, claimed that there is no time without motion, and there is no motion before the beginning of the world and after its end. Therefore, he argued, the creation doctrine compels us to accept that God created the world once *with* space and *with* time, and that God Himself does not exist in an infinite time and in an infinite space, but exists in eternity, i.e. beyond space and time.

There is yet another aspect of the time problem that created interest among some of the Church Fathers. In the *Greek tradition* time was conceived of as a closed circle. Plato held this view and claimed that circular time is the closest “image of eternity.” (George V. COYNE and Michael HELLER, 50).

The Stoic idea of a cyclic succession of worlds was upheld by Origen, albeit with one important modification. Every subsequent world will be filled in with different events: Moses will not lead Israel out of Egypt, Christ will not be betrayed by Judas. (*De Principiis* 3,3,4–5). World history is cyclic but time itself is not. In the writings of St. Augustine history ceases to be cyclic, it fully opens. And the reason for this is purely theological:

“God forbid, he wrote, that we should ever believe this [the cyclic history] ... Christ once died for our sins and rising again, dies no more ...” (*De Civitate Dei* XII,13).

The idea of linear time belongs now to the heritage of our culture. We owe it to the reflection of the Church Fathers on creation and salvation.

The Fathers of the Church who have most influenced the Orthodox Tradition were happy to use the science and philosophy of their time in their theological thinking. They did not pursue a *natural theology* in the sense in which that term is often now understood, based on scholastic and later developments in Western theology. (Dumitru STANILOAE, 1994, 1, 21).⁹ However, there is no need for the term *natural theology* to be defined in terms of these Western developments. It may legitimately be applied to aspects of the Orthodox theological tradition, as it has been, for example, in one of the most exhaustive analyses of the patristic encounter with the classical philosophical and scientific tradition: that of Jaroslav Pelikan. (Jaroslav PELIKAN, 1993).

According to the Orthodox understanding, the intellect provides not knowledge *about* the creation but rather a *direct* apprehension or spiritual perception of the divine *Logos* (Word) incarnate in Christ, and of the inner essences or principles (*logoi*) of the components of the cosmos created by that *Logos*. (Christopher C. KNIGHT, 3c:89, 2)

In the Orthodox understanding of these *logoi*, all the nuances of the Greek term *logos* come into play. As Fr. Andrew Louth has expressed it, to say that the universe is created by the *Logos* entails, for the speaker of Greek, “that the universe has a meaning, both as a whole and in each of its parts. That ‘meaning’ is *logos*; everything that exists has its own *logos*, and that *logos* is derived from God the *Logos*. To have meaning, *logos*, is to participate in the *Logos* of God.” Behind this, he continues,

⁹ These developments – with their increasing tendency to make a sharp distinction between “natural theology” and “revealed theology” – often seem, to Orthodox theologians, mistakenly to ignore divine influence in human reflection on the world, and to see the human being as “the only active agent” when this reflection takes place. The result of this, in their view, is an approach that sits uneasily with the kind of Orthodox understanding in which there is “no separation between natural and supernatural revelation.”

“lurks the Platonic idea that everything that exists does so “by participating in its form, or idea, which is characterized by its definition; the Greek for definition (in this sense) is, again, *logos*.” (Andrew LOUTH, 2004, 188).

As he goes on to note, however, by the time these notions reached their most complex Christian expression – in the seventh century work of St. Maximus the Confessor – the Platonic character of this kind of language had already for centuries been adapted to the requirements of the Christian revelation. Because the world is seen as having been created by God through his *Logos*, it could no longer be “regarded as a pale reflection of the eternal reality, as in Plato’s world”. (*Ibid*, 189).

In Eastern Father’s approach, the world is “a structure in which vastly incommensurate elements – angelic, human, animate and inanimate – are all held together and function as a coherent whole, focused on their Creator. And it is a cosmos shot through with the radiance of divinity. God is at once *totally other* (“Das Ganz Andere”, R. Otto), totally beyond everything that is, and in everything by the ecstatic power inseparable from himself.” (Elisabeth THEOKRITOFF, 2008, 65-66).

This sense of God being in everything and yet *totally other* takes up an antinomy that is found at least as early as the work of St. Athanasius, for whom God has no affinity with the world in his *essence*, but by his *powers* pervades the whole cosmos. This latter concept was developed by later writers in such a way that Orthodox theology has come to stress, not only that God is in everything, but also that, in an importance sense, everything is in God. This understanding – sometimes known as *pantheism* – is very different from that of mainstream philosophical theism of the Christian West, in which God is usually seen entirely separate from the world.

Orthodox pantheism has been expressed in two related ways. One has been to stress the notion of the *logoi* of created things in the way that we have already noted. This is especially the case in the work of St. Maximus the Confessor, according to whom, in the words of Kallistos Ware

“Christ, the Creator Logos has implanted in every created thing a characteristic logos, a ‘thought’ or ‘word’ which is God’s intention for that thing, its inner essence, that which makes it distinctively itself and at the same time draws it towards the divine realm.” (Kallistos WARE, 2004, 160)¹⁰

This view of the relationship between the creation and its divine creator never falls into *pantheism* – the identification of God with the world – because the characteristic Orthodox stress on God’s immanence is balanced by an equally strong stress on the utter transcendence of the divine essence, which is seen as unknowable and beyond all creaturely participation. Because of this latter stress, the Orthodox view, while pantheistic, is never pantheistic. (Christopher KNIGHT, 3c:89, 6; Alexandru-Corneliu ARION).

A major achievement of Orthodox theologians of the last century, was to express the Traditional cosmic vision of Orthodoxy in a way that was to avoid some of the problems attempted in the previous century (e.g. Russian sophiology). As Elizabeth Theokritoff has noted (Elizabeth THEOKRITOFF, 2003, 221-238), writers like Vladimir Lossky and George Florovsky have elucidated the eastern patristic view of creation as a resource for current thinking, while others – Paul Evdokimov, Dumitru Staniloae, John Meyendorff, John Zizioulas, Alexander Schmemmann and Olivier Clement, to name but a few – have more recently expanded this elucidation in terms of an understanding of humanity’s place in creation.

It is important to stress out that if suspicion of science among some Orthodox Christians does exist, it should not be equated in its origins or effects with the superficially similar attitude of some of the “fundamentalist” protestant Christians of the West. While the two groups may sometimes be comparable in sociological terms, their theological views are usually very different. For example, even though a generally conservative approach to scripture is usual in Orthodox circles, this approach is strongly influenced by the way in which theologians of the patristic period often read the Old Testament scriptures using an allegorical rather than a literal mode of interpretation, and with due acknowledgement of the science and philosophy of their time. This means, for example, that the creation accounts in Genesis are not usually seen by educated Orthodox Christians as expressing literal, “scientific” truths about the way

¹⁰ These *logoi* are described by Maximos “in two different ways, sometimes as created and sometimes as uncreated, depending upon the perspective in which they are viewed. They are created inasmuch as they inhere in the created world. But when regarded as God’s presence in each thing, they are not created but uncreated”.

in which the cosmos came into being¹¹. Given this historical background, it is not science and philosophy as such that are looked at with suspicion by some Orthodox Christians, but only of what are perceived by them (rightly or wrongly) to be perverted forms of these disciplines. Neo-Darwinian insights in biology, for example, are still sometimes held to be incompatible with Orthodox faith, though advocates of these insights do seem to be becoming more numerous in the Orthodox community.

Andrew Louth, for example, has commented that although St. Maximus the Confessor assumes, with all his contemporaries, that natures are *fixed*, his thought is still dynamic enough to be implicitly open “to the idea of evolution ... as a way of expressing God’s providence” and that his cosmic vision can “be re-thought in terms of modern science.” (Andrew LOUTH, 2004, 189). In a similarly helpful way, Panayiotis Nellias has commented that

“the essence of man is not found in the matter from which he was created but in the archetype on the basis of which he was formed and towards which he tends.” (Panayiotis NELLAS, 1997, 33).

It is precisely for this reason, he goes on, that for the Orthodox understanding of creation, “the theory of evolution does not create a problem ... because the archetype is that which organizes, seals and gives shape to matter, and which simultaneously attracts it towards itself.” (*Ibid*, 34).

Despite such assurances, however, there is, as yet, no consensus about how to formulate a contemporary Orthodox response to the sciences in general and to neo-Darwinism in particular. Intellectual ferment in this area – characteristic of Western Christianity for several generations – has been effectively absent from Orthodox circles until relatively recently, and this, coupled with the sociological factors means that a wide spectrum of views exists.

At one end of the spectrum is the essentially anti-scientific attitude expressed by writers like Philip Sherrard (1992 and Seraphim Rose (2000). The former of these – whose concerns about ecology and about the need for the revival of a “sacred cosmology” are widely shared by his fellow-Orthodox – fails to perceive any validity in the distinctions commonly made between technology and pure science and between science and scientism. The latter effectively defends a kind of fundamentalism in relation to the patristic literature. (George THEOKRITOFF and Elizabeth THEOKRITOFF, 2002, 365-90). For both of these proponents of an anti-science attitude, the positive assessment of science implicit in the mainstream Western dialogue between science and theology represents an unacceptable dilution of Christian theology.

At the other end of the spectrum lie writers such as Basarab Nicolescu and Christopher Knight. These, while insisting that Orthodox perspectives have an important role to play in the science-theology dialogue of the future, do not reject the Western dialogue of the last half-century, with its positive attitude to science and its view that scientific insights provide genuine insights into major theological themes. B. Nicolescu – who in his Romanian homeland has led the first major effort to develop a structured and widespread science-theology dialogue in a traditionally Orthodox country – has focused on essentially philosophical issues, taking bold and controversial strides to formulate a “transdisciplinary” approach that affects not only the science-religion dialogue but every area of human thought. (Basarab NICOLESCU, 1992). Knight, in a rather different way, has focused on theological issues, arguing that one of the main resources that Orthodoxy can bring to the current dialogue is what he calls the “teleological christological understanding” of created things enunciated by St. Maximus the Confessor. In an updated form that acknowledges current scientific insights, he argues, this traditional Orthodox understanding can provide a new framework – an “incarnational naturalism” – within which the legitimate questions enunciated by participants in the Western dialogue can be answered more satisfactorily than they have been when examined in a purely Western context. In his view, the laws of nature perceptible to the scientist need not be questioned on theological grounds since they may be seen as manifestations of the *logoi* of created things. (Christopher C. KNIGHT, 2007).

Between these extremes of the Orthodox spectrum lie writers who, while not rejecting science, effectively deny the validity of the kind of dialogue between it and theology that has taken place among Western Christians over the last few generations. Of the exponents of this kind of position, Alexei Nesteruk perhaps presents the most sophisticated argument. While affirming science as a legitimate

¹¹ Indeed, patristic writers such as St. Augustine and St. Gregory of Nyssa quite explicitly set aside the literal meaning of these texts.

expression of the human spirit, he tends to by-pass questions about truth in science and theology, and about the consonance or dissonance between them, by interpreting both in terms of the philosophical approach known as phenomenology. Major themes in Orthodox theological thought can, he claims, be incorporated in this approach. (Alexei NESTERUK, 2008).

The issue of the origin of the world was one of the most controversial chapters in the dispute between science and religion, for it was reduced until recently to the confrontation between two theories: *creationism* and *evolutionism*, the latter claiming the scientific nature. But whether it's creationism or evolutionism, both theories disregard the presence and continue work of God in creation. In terms of philosophical and religious point of view, creationists are rather *deistic*, because they consider God being transcendently isolated, while evolutionists lean more towards *pantheism*, believing that the world exists from eternity. Unlike science, the *theonomist cosmology* of the Eastern Church does not launch into speculation about the origin and movement of the world, but starts from a divine gift, i.e. from biblical narration, which she does not ignore even when engaging a dialogue with the theories of scientific cosmology. The arguments of Orthodox Christian theology proof that the quantum universe was created *out of nothing* and that it's kept in existence only by God's relationship with creation through Jesus Christ and the Holy Spirit. In relation to itself, the universe is reduced to nothing, because God is in Himself, while any other created thing is dependent upon Him, into an indissoluble connection with Him. From the perspective of quantum physics, the genesis of the universe involves the image of a void space, serving as a stage for the material world. (Alexandru-Corneliu ARION, 2017, 444).

5. CONCLUSION

In the age of science can we honestly believe that the universe has any purpose? Is it credible to claim that something of everlasting importance is working itself out in the universe? Of all the questions in science and religion, many thinkers believe the most fundamental is whether the universe has a purpose. Nowadays many scientifically educated people are quite certain that the universe can have no overarching purpose since science predicts that it is heading irreversibly towards a decisive and final death at some point in the future.

This, of course, is not how religions, especially the Judeo-Christian traditions, see things. They have no trouble agreeing that everything physical, including our own bodily existence and the universe that sustains it, will perish. But they also believe in something eternal. Not everything, in other words, is subject to non-being. In order for anything to exist at all, theologians have argued, there must be a creator, a being that is not capable of non-being. This being believers have called God. Accordingly, the purpose of the universe is to disclose the infinite divine resourcefulness that gives being to all beings. Simply by existing and witnessing to the infinite creativity of God, the totality of beings is full of purpose.

Besides the theoretical understanding of natural phenomena sought by science, Christian teaching also recognizes the possibility of a quite different way of understanding nature, through direct spiritual insight. Such an alternative path is already adumbrated in the Psalms, where natural phenomena are described, not as objects of scientific study, but as vehicles of divine glory. Within the Greek patristic tradition this alternative form of understanding was cultivated primarily in two ways, both of which transform the way one perceives the sensible world: ascetic discipline and liturgical worship. Its object was also specified in two distinct (although closely related ways), as the divine *logoi* and the divine energies. (David BRADSHAW, 2018).

The scientific knowledge of the world in the precise sense of the word was developed in Greek antiquity. A change is taking place in modern times. With Galileo, physics becomes mathematical. Nature is considered according to an atomic and mechanical model. It has no internal purpose. Modern science is closely associated with a technique, i.e. an action by which man transforms his environment. There would be a link between the Christian (Western) tradition and the emergence of modern science as "technoscience". For this, it would be interesting to return to the first elaborations of a Christian theology of the creation of the world in order to see if there is a difference of sensitivity between East and West. (François EUVÉ, *Ibid*).

According to *creation theology*, God gives the world its rational, intelligible structure as described by the laws of nature through the transcendent and eternal act of bringing the world as a whole

into existence out of nothing (*ex nihilo*). As immanent creator, God also continues to create (*creatio continua*) and providentially direct processes and events in general towards their consummation in the eschaton. (C. POLKINGHORNE, 1989).

The future of the Orthodox theology in its response to the sciences of our time is hard to predict. In a tradition with such a rich and nuanced history of natural theology, however, it is surely likely that there will emerge from it an approach – consonant with patristic perspectives but sensitive to the new questions and insights that now abound – that is relevant to the times in which we live. As at present, sociological factors may, for some time to come, distort the discussion that has now begun in earnest, and this will mean that what comes to be seen as the mainstream Orthodox position in the short term may reflect the effects of these factors rather than a full appreciation of the resources that the Orthodox tradition has to offer. (Christopher C. KNIGHT, 2009).

More than significantly – in the context of our discussion –, the great positivist Austrian thinker of 20th century, Ludwig Wittgenstein, utters sententiously:

“To believe in God means to see that the facts of the world are not the end of the matter. To believe in God means to see that life has a meaning.” (Kresimir CEROVAC, 2009).

Over and above, all these endeavors from both sides of human attempt to reaching at a better understanding of the Reality we live in, is so emphatically underscored by Romanian-born French physicist Basarab Nicolescu: “If Science and Religion accept to dialogue, then the Blind will see and the Deaf will hear.” (B. NICOLESCU, 2009).

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