

## UNIT 3C: MINISTRIES AND MISSION

### 89: Faith and Science

#### *Preface*

*Serving as a preface to this lecture, this transcript is of an address delivered by Fr Gregory at Manchester University on 28th October 2011. The title of this talk is: "Are Science and Religion Compatible?"*

I address you as an Orthodox Christian priest ... by which I mean I belong to the Orthodox Church as found today in Greece, Russia, Eastern Europe and the Middle East, but now also in the west. This is important because not all Christians take the same approach to theology; and in this regard, we Orthodox Christians do not get involved in so called "proofs for the existence of God." Tonight, however, I am addressing something quite different than proving the existence of God, but rather the question: Are science and religion compatible?

1. Let me begin by pointing out firmly that bad religion and bad science are not compatible. But what do I mean by "bad religion" and "bad science"?

2. Bad religion seeks to challenge science in part or in whole as an alternative explanation for how the world works. Religion, however, has no competence to explain why the wind blows, why my eyes are blue or what happened at the moment of creation. These questions, these explanations, belong to science and science alone. The world is full of bad religion transgressing its limits, quite aside from the terror and violence of which it is sometimes capable. In creationist museums in the southern states of North America, for example, humans walk with dinosaurs in 6000 BC, whilst elsewhere some religious leaders, influenced by both "bad science" and "bad religion" continue their relentless efforts to infiltrate secular institutions in order to suppress scientific freedom. Unfortunately,

fundamentalism is on the rise again, particularly in the west; and this is not good either for religion or for science.

3. Bad science, however, commits its own errors in turn. Bad science seeks to characterise all religion as “bad”—that is—superstitious, redundant, lazy, fundamentalist, obscurantist, unconcerned with evidence and meaningless in its information content. Now if ALL religion were like that then I would readily join forces with the atheists. Happily, however, not all religion is like this.

4. Bad science goes on to declare anything that cannot be measured and theorised as infantile thumb sucking or incomprehensible gobble-dee-gook. Emboldened, it then breaches the limits of the scientific method by asserting its own faith statements, namely, that the Cosmos is without purpose and that human morality has little if no transcendent, universal grounding. Therefore, with bad science masquerading as religion, the most one can hope for in a pointless universe is merely the chance of an excess of happiness over misery; and if intractable misery is to be our lot, then stoicism is the best option in the face of such suffering and unhappiness. One cannot and should not hope for anything more.

5. Now, let's get more positive. What about good science and good religion? Good science does not trespass the boundary of its own sphere of operation—which is to account for the world as it is. With the understanding that good science brings, as it is constantly revised and refined in the face of new data and discoveries, human society becomes better adapted to its environment and the blessings of scientific progress become clear. There is, therefore, a certain evolutionary relevance of science in the remarkable development of the human species. Without good science we would all still be stuck in the proverbial cave, sacrificing our first born to appease the rain gods. Once we understand the importance of good science for all of humanity, perhaps some will not feel so threatened by science as a whole.

6. Good religion produces holiness, compassion and justice through a relationship with the divine. Now I am definitely NOT saying that such transparent goodness ONLY comes from an explicit faith in God ... far from it. According to Judaeo-Christian teaching we are ALL made in the image and likeness of God; and we should expect to see the goodness of God in ALL human life, irrespective of religion. But some of us, perhaps many of us, can only be transformed by goodness through a personal, loving relationship with God. Science can describe this search for goodness and this relationship with God in its evolutionary aspects in terms of human psychology and personal and community behaviour, including the striving for altruism and self-sacrifice. Good science can even explain goodness in naturalistic terms through neuro-chemical processes in our brains and the emergence of consciousness, but good science cannot judge one way or the other whether the God at the other end of this putative relationship exists or not. Neither can religion “prove” such a God or its insights into how to live in the world and relate to others as being eminently sound. However, what good religion can do is offer an invitation and an example, as the psalmist says, to:- “Taste and see that the Lord is good.” (Psalm 34:8)

7. Now all of this has nothing to do with the disastrous attempt of bad religion to explain the world and its natural operations with revealed faith rather than scientific enquiry. Orthodox Christianity says against this: “God does not explain anything. Things explain God.” What do I mean by this statement? Orthodox Christians do not believe in God in order to satisfy their ignorance about the world—in short, to give them a comforting bogus alternative to the operations of science. We need to start the other way around, with the operations of science and seek to understand how thereby creation reveals God. One of our 7th century saints, Maximos the Confessor, put it like this:

The Word conceals Himself mysteriously for our sakes within the rational principles of creatures and thus He reveals Himself accordingly through the visible things as through some written signatures as a whole in His fullness

from the whole of nature .... the Invisible in the visible, the ungraspable in tangible things.” (Ambigua 33).

So whenever science discovers something about the natural world, that itself is a hymn of praise to the Creator, even if science itself must not put it in those terms.

8. With the aphorism: - “God does not explain anything, things explain God” clearly understood, religion and science can then walk side by side and contribute each other’s truths (with a small “t”) to the one Truth of humanity (with a capital “T”) in all its diverse forms. That unifying Truth affirms the reality and the relevance of both good science and good religion. We can all be empowered to seek that fullness of Truth in our different paths without attacking each other but by listening and learning with humility and grace.

9. Believers will say that the one composite Truth has its ultimate source in God. However, accepting that this ultimate source is in God is not necessary in order to discover some important aspects of the Truth by using all those diverse and complementary means that we have developed whether scientific, artistic, humanistic or religious. Truth is one; and it must not be allowed in human terms to destroy itself from within through futile competition between its several parts. Good science and good religion, therefore, are indeed compatible. We each have personal responsibilities to advance that harmonious interaction by the way we live our lives. We each make our own personal choices, but I deeply believe that humans together can choose to advance both good science and good religion for the benefit of us all.

## Modern Science and the Orthodox Christian Understanding of Creation

Fr. Christopher C. Knight

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. (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”<sup>1</sup> 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.”<sup>2</sup>) However, there is no need for the term *natural theology* to be defined in terms of these Western developments. It may, if it is understood more broadly in terms of the human capacity to know something of God other than purely through historical divine acts, 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).<sup>3</sup>

The different trajectories taken by natural theology in East and West are understandable in part in terms of the way in which any *natural theology* is linked to the broader notion of *natural religion*. This latter term has itself been understood in many different ways,<sup>4</sup> but if we speak of it in the broadest possible way—defining it in terms of the intrinsic human capacity to know something of God independently of God’s revelation of himself in historical acts—it is clear that Orthodox theology has a strong sense of this capacity, but understands it in a different way to that which became common in the West. Crucial to this

difference is that the Orthodox notion of original sin is not the Augustinian one that has so strongly influenced Western Christian perspectives. The image of God in humanity is seen, in Orthodox theology, as having been distorted, but not destroyed, through human rebellion against God, so that the created, “natural” capacity to know God has not been completely obliterated.

In some Western traditions—and especially in late medieval scholasticism—the effects of the fallenness of human nature have been seen as applying less to discursive reason than to other human capacities. The Eastern notion of original sin has, however, meant that Orthodox theology has tended, if anything, to move in the opposite direction to that taken in the scholastic approach, seeing the unaided human reason as potentially misleading, and focusing, in its natural theology, on other capacities. (In their understanding of the way in which *natural law* affects ethical decision-making, for example, Orthodox writers have tended to stress the importance of conscience rather than developing the kind of reasoning from observations of the world that has characterized the Western development of the natural law concept.)

Behind this approach lies the way in which—in the Greek patristic understanding and especially in the later Byzantine appropriation of it—knowledge of God is far more than an understanding based on the discursive reasoning faculty. Such knowledge is, in the Orthodox understanding, based first and foremost on contemplation (*theoria* in Greek), the perception or vision of the highest human faculty, the “intellect” (*nous*). This intellect is not the same as the discursive reasoning faculty (*dianoia*), which latter is understood as functioning properly in theological analysis only if rooted in the spiritual knowledge (*gnosis*) obtainable through the intellect. According to the Orthodox understanding, the intellect—when purified through ascetic practice--provides not knowledge *about* the creation but rather a *direct* apprehension or spiritual perception of the divine *Logos* (Word) incarnate in Christ, of which the fourth gospel speaks, and of the

inner essences or principles (*logoi*) of the components of the cosmos created by that *Logos*. It is only when the functioning of the reasoning faculty is in accord with this immediate experience that it can function adequately in theological analysis.

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], 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*.

As he goes on to note, however, by the time these notions reached their most complex and complete Christian expression—in the seventh century work of St. Maximos 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”<sup>5</sup>

The early background to this particular way of focusing on the world as God’s creation is a complex one, with Irenaeus’s battle against Gnosticism and Athanasius’s attempts to solve some of the problems of Origenism as significant factors. It is, however, in the late fourth century work on which Pelikan focuses in his study of patristic natural theology<sup>6</sup>—of the Cappadocian Fathers (St Basil the Great, St Gregory of Nyssa, and St Gregory the Theologian)—that we see the outline of later Orthodox thinking most clearly taking shape. As Elizabeth

Theokritoff has remarked, the Cappadocians use the Platonist language of their day in a way that might make “the modern reader, to whom this language is alien ... mistake their Platonic starting point for their conclusion.” They do, she admits, “speak in terms of a divide between the intelligible and the sensible, and even of an ‘affinity’ between intelligible creatures and the Godhead.” However, she insists, “the main thrust of their thinking is the way in which these inequalities are evened out in the Christian doctrine of creation ... It is for the sake of the whole creation that man the microcosm receives the divine inbreathing, so that nothing in creation should be deprived of a share in communion with God.” This sense of solidarity in createdness has, she goes on to note, “remained a leitmotif in Eastern Christian theology.”<sup>7</sup>

Here, it is worthy of notice that this emphasis on the distinction between creator and creature has tended, in Orthodox theology, to be seen as far more important than any other distinction. In particular, a distinction between what is “natural” and what is “supernatural” is far less often stressed in Eastern theology than it is, for example, in Western Christian writings of the late medieval period. This tendency is in part related to the tendency, already noted, to see natural and supernatural revelation as working in tandem and therefore being effectively inseparable. It is also in part related to the fact that, even when the concept of being “above nature” is used in Orthodox writings, it is understood in terms of a concept of nature that is subtly but vitally different to that which is common in Western Christian thought, so that the term has a rather different technical meaning to that which in the West is associated with the term “supernatural.” In particular, as Vladimir Lossky has noted, the Eastern tradition “knows nothing of ‘pure nature’ to which grace is added as a supernatural gift. For it, there is no natural or ‘normal’ state, since grace is implied in the act of creation itself”<sup>8</sup>



This sense of the grace inherent in the created order is not, it should be noted, oblivious of the consequences of the Fall. Indeed, some patristic writers, as we shall note presently, see the ramifications of the fall as extending beyond humanity to the entire cosmos. (As Fr. Christopher Knight has noted, this has interesting implications for the problems of evil and of divine action.<sup>9</sup>) Yet, just as the notion of the human fall does not, for Orthodox theology, imply the obliteration of the image of God in humanity, so also, for this theology, the ramifications of the fall do not - even for the writers who speak of nature itself as fallen—obliterate the way in which the cosmos is a revelation of the divine.

This sense of the revelation to be found in the cosmos is particularly stressed in the late fifth- or early- sixth-century writings of pseudo-Dionysius the Areopagite. While taking up the Neoplatonist idea of the scale of being, these writings turn it into what Elizabeth Theokritoff has called “a structure of *theophany*, revelation of God. Its purpose is to allow each creature to reflect the divine glory in its own unique way.”<sup>10</sup> In this approach, what is envisaged 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, totally beyond everything that is, and in everything by the ecstatic power inseparable from himself.”<sup>11</sup>

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 *panentheism*—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 panentheism 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. Maximos the Confessor, according to whom - in the words of a Metropolitan 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.

These *logoi*, he goes on, 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—as divine 'predetermination' or 'preconception' concerning that thing—they are not created but uncreated.<sup>12</sup>

Alongside this model, there exists a second, to be found in embryonic form in the writings of Clement of Alexandria and of St Basil, and developed most systematically in the much later work of St Gregory Palamas (d.1359). In this approach, what is central is the distinction between God's transcendent essence (*ousia*) and his immanent energies or operations (*energeiai*). This second approach, Metropolitan Kallistos continues, is

not contrary to the first but complementary. ... In his essence God is infinitely transcendent, utterly beyond all created being, beyond all participation from the human side. But in his energies—which are nothing less than God himself in action—God is inexhaustibly immanent, maintaining all things in being, animating them, making each of them a sacrament of his dynamic presence.<sup>13</sup>

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 panentheistic, is never pantheistic.

Over and above the implications of these two complementary models, a third factor discourages any descent from panentheism into pantheism. This is the strong sense of the ramifications of the Fall, typically expressed in the patristic era in terms of the biblical notion of the "garments of skin" given by God to fallen humans (Genesis 3:21). (Especially, in the work of St Gregory of Nyssa, these are seen as referring to "the entire postlapsarian psychosomatic clothing of the human person.")<sup>14</sup> For some patristic writers, as we have already noted, this fallenness of the human being extends to the whole cosmos. The "natural" world as we experience it is, for these writers, both a revelation of God and yet also profoundly "unnatural," since it reflects the fallenness of humanity rather than the fullness of God's original and eschatological intentions for his creation. Indeed, some Orthodox writers in fact use the term "natural" only to signify this "original" or "eschatological" state, and explicitly criticize the kind of Western natural theology or natural law thinking which uncritically attempts to "read" God's intentions from the "unnatural," empirical world of everyday experience.<sup>15</sup>

Even for those writers who stress the "unnaturalness" of the empirical world, however, the notion that each created thing is a reflection of the divine glory—a sacramental reality at least in potential—is still present. Among modern Orthodox writers, this has been especially the case for Fr Alexander Schmemmann and Philip Sherrard, the latter of whom has taken up the notion of the world as sacrament and related it to the specific sacraments of the church in a way that expands on Schmemmann's general notion of a sacrament as "a revelation of the genuine nature of creation."<sup>16</sup> Because he stresses the created order's present "estrangement and alienation from its intrinsic nature", Sherrard is able to see in the sacrament

something in which “this divided, estranged and alienated state is transcended” so that the created order’s “essential and intrinsic nature is revealed.”<sup>17</sup>

A major achievement of Orthodox theologians of the last century or so has been, in ways like this, to express the Traditional cosmic vision of Orthodox theology in a way that has avoided some of the problems of the attempts of the previous century (e.g. Russian sophiology) to express this vision. As Elizabeth Theokritoff has noted,<sup>18</sup> 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.

When we look at recent work on the Orthodox understanding of creation, however, what is very noticeable is that, despite general encouragement by influential theologians like Dumitru Staniloae, very few Orthodox theologians have attempted to expand their rich heritage in terms of the insights of modern science. Many of them, of course, have no competence to do this, but this is true also of most members of the Western theological community, among whom a rich “dialogue between science and theology” has existed for at least half a century. Why, we must ask, does this disparity exist, especially when the use of scientific insights has been such a significant part of the patristic thinking that Orthodox Christians see as the foundation for their theology? Is it explicable, perhaps, in terms of an unbalanced stress on knowing the creation through direct contemplative experience rather than on knowing about it through human reason? Or in terms, perhaps, of the tendency among some to stress orientation towards “Tradition” so strongly that current theology is seen as little more than writing footnotes to the works of the Fathers?

However, we judge this question, we need also, perhaps, to take into account sociological factors. Many Orthodox Christians lived until very recently in situations in which they were inevitably influenced by the need to react against the Marxist-Leninist version of atheism, with its supposed support from the sciences. This has meant that, even after the downfall of that ideology in their countries, many of them have tended, almost instinctively, to see science and atheism as having an intrinsic connection. In addition, at least some influential Orthodox in the West have developed a similar attitude for reasons that are susceptible to comparable sociological analysis. Especially if reacting against the recent “liberalisation” of many of the mainstream Western forms of Christianity, they too may tend to associate science with the ideologies of those they perceive to be the enemies or diluters of faith. It is perhaps difficult to assess how significant these sociological factors are, but it is notable that where neither of them has been a major factor in local Orthodox ecclesial life—in Greece, for example—there often seems to have been a greater openness to scientific insights than there is elsewhere.

It is important to recognize, however, 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 in which the cosmos came into being. (Indeed, patristic writers such as St Augustine and St Gregory of Nyssa quite explicitly set aside the literal meaning of these texts.) 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—a trend that has perhaps been encouraged by the observations of some Orthodox theologians that their Tradition does not preclude those insights.

Fr. Andrew Louth, for example, has commented that although St Maximos 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.”<sup>19</sup> In a similarly helpful way, Panayiotis Nellas 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.” 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.”<sup>20</sup> 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 already mentioned, 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.<sup>21</sup> and Fr Seraphim Rose.<sup>22</sup> 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 (an attitude that has been intelligently questioned by George and Elizabeth Theokritoff.)<sup>23</sup> 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 Fr. 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. 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.<sup>24</sup> 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 Maximos 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.<sup>25</sup>

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 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.<sup>26</sup>

Given this situation, the future of the Orthodox community's development of its distinctive version of natural theology, and of its response to the sciences in particular, 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.



## NOTES

<sup>1</sup> Dumitru Staniloae, *The Experience of God: Orthodox Dogmatic Theology Vol.1: Revelation and Knowledge of the Triune God*, Brookline, Holy Cross Orthodox Press, 1994 .p.21

<sup>2</sup> Ibid. p.1

<sup>3</sup> Jaroslav Pelikan, *Christianity and Classical Culture: The Metamorphosis of Natural Theology in the Christian Encounter with Hellenism*, New Haven and London, Yale University Press, 1993.

A study based more explicitly on the patristic use of science is that of D. S. Wallace-Hadrill, *The Greek Patristic View of Nature*, Manchester, Manchester University Press, 1968.

<sup>4</sup> David Pailin, “The Confused and Confusing Story of Natural Religion”, *Religion* 24 (1994) p. 208 notes no less than eleven quite distinct uses of the term, commenting that “in view of the complex variety of ways in which the term ... has been understood and of the fact that some of those who use it intend thereby more than one of these distinct meanings, it is not surprising that many debates about natural religion have been at cross purposes.”

<sup>5</sup> Andrew Louth, “The Cosmic Vision of Saint Maximos the Confessor”, in Philip Clayton and Arthur Peacocke, eds., *In Whom We Live and Move and Have Our Being: Panentheistic Reflections on God’s Presence in a Scientific World*, Grand Rapids, Eerdmans, 2004, p.188

<sup>6</sup> Pelikan, op.cit.

<sup>7</sup> Elisabeth Theokritoff, “Creator and Creation”, in Mary B. Cunningham and Elizabeth Theokritoff, eds., *The Cambridge Companion to Orthodox Christian Theology*, Cambridge, Cambridge University Press, 2008, p.65

<sup>8</sup> Vladimir Lossky, *The Mystical Theology of the Eastern Church*, Cambridge, James Clarke, 1957, p.101

<sup>9</sup> Christopher C. Knight, *The God of Nature: Incarnation and Contemporary Science*, Minneapolis, Fortress Press, 2007, pp.86-95

<sup>10</sup> For an expansion of this notion see especially Andrew Louth, *Denys the Areopagite*, Wilton CT, Morehouse-Barlow, 1989

<sup>11</sup> Theokritoff op.cit. pp.65-6, referring to Ps. Dionysius, *On the Divine Names* 4.13

<sup>12</sup> Kallistos Ware, Bishop of Diokleia, “God Immanent yet Transcendent: The Divine Energies according to Saint Gregory Palamas”, in Clayton and Peacocke, eds., *In Whom We Live*, op. cit. p.160

<sup>13</sup> Ibid.

<sup>14</sup> Panayiotis Nellas, *Deification in Christ: Perspectives on the Nature of the Human Person*, Crestwood N.Y., St. Vladimir’s Seminary Press, 1997, p.33

<sup>15</sup> See e.g. Philip Sherrard, *Christianity and Eros: Essays on the Theme of Sexual Love*, London, SPCK, 1976, ch.1

<sup>16</sup> Alexander Schmemmann, *The Eucharist: Sacrament of the Kingdom*, Crestwood N.Y., St. Vladimir’s Seminary Press, 1987. pp.33-4

<sup>17</sup> Phillip Sherrard, “The Sacrament”, in A. J. Philippou, ed., *The Orthodox Ethos: Essays in Honour of the Centenary of the Greek Orthodox Diocese of North and South America, Volume 1*, Oxford, Holywell Press, 1964, p.135

<sup>18</sup> For a good brief account of modern writers on this topic see Theokritoff op.cit. and also Elizabeth Theokritoff, “Embodied Word and New Creation: Some Modern Orthodox Insights Concerning the Material World”, in John Behr, Andrew Louth and Dimitri Conomos, eds., *Abba: The Tradition of Orthodoxy in the West – Festschrift or Bishop Kallistos (Ware) of Diokleia*, Crestwood N.Y., St. Vladimir’s Seminary Press, 2003, pp.221-238

<sup>19</sup> Louth op.cit. p.189

<sup>20</sup> Nellas op.cit. p.33

<sup>21</sup> See e.g. Philip Sherrard, *Human Image: World Image – The Death and Resurrection of Sacred Cosmology*, Ipswich, Golgonooza, 1992

<sup>22</sup> See in particular Seraphim Rose, *Genesis, Creation and Early Man*, Platina CA, St. Herman of Alaska Brotherhood, 2000.

<sup>23</sup> George Theokritoff and Elizabeth Theokritoff, “Genesis and Creation: Towards a Debate”, *St.Vladimir’s Theological Quarterly* 26 (2002) pp.365-90; available online at

[http://jbburnett.com/resources/theokritoff\\_rose-svtq.pdf](http://jbburnett.com/resources/theokritoff_rose-svtq.pdf)

<sup>24</sup> Basarab Nicolescu, *Manifesto of Transdisciplinarity*, New York NY, State University of New York Press, 1992

<sup>25</sup> Christopher C. Knight, *The God of Nature: Incarnation and Contemporary Science*, Minneapolis, Fortress Press, 2007

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