

# The Marriage of Orthodoxy and Science

## *an end to the phoney war over creation and life*

Augmented and updated from a lecture delivered at Manchester Metropolitan University by  
Archpriest Gregory Hallam on 23<sup>rd</sup> February 2006 and revised 14<sup>th</sup> December 2021

In the last few decades an ancient, supposed conflict between Christianity and Science has re-emerged in the west and more especially in America. After years of public ridicule occasioned by so called Young Earth Creationists mounting exhibitions of Adam and Eve walking with dinosaurs on a 5000 year old earth, the creationist movement has changed its tactic. Now the name of the game is “Intelligent Design,” an attempt to show that science on its own cannot account for the complexity of life without the intervention of a Cosmic Designer, which some might wish to call God although, publicly, the Intelligent Design movement has not gone that far.

What all of these creationist movements do is to try and impose on science a theological agenda that by the terms of its own method of enquiry, it cannot and must not accommodate, for it is no business of science to “prove” God one way or another. Arguably, creationism only encourages extreme reactions from such people as Richard Dawkins who trespass in turn in the realm of theology with an ignorance and dogmatism matched only by their own mortal enemies, the meddling fundamentalists of the American Deep South and Midwest.

Let us not be deceived by this conflict which is serious. The implications for those who subscribe to both God as creator and evolution as his method are dire. Christianity as a whole is being associated with narrow-minded irrational bigotry and, in turn, a widespread ignorance of science and its claims threatens, even in this technological age, to throw us back into an era of superstition and ignorance. Those Christians with other voices must stand up and be heard before it is too late. They too must join this debate.

It is my contention that in all of this sabre rattling and jockeying for position we have a phoney war, a tragic and unnecessary conflict that does great harm both to science and Christianity. Moreover, I also assert that these problems are themselves caused on the Christian side by the inerrantist, literalist, ‘sola scriptura’ assumptions of conservative Protestantism. In offering alternatives to these problematic beliefs, I shall suggest that there are resources for Christian thinking and theological reflection on the nature of creation in Orthodox Christianity which, happily, are also shared in part at least by other Christian traditions.

So, in the midst of this conflict we must ask: “what is wrong with Creationism?” What are the faulty assumptions in this debate that lead to each side anathematising the other? Is there a better way that could see science and faith in harmony once more?

First we need to clear up the language, for words especially have been used in this war as weapons without much clarity as to their former and present meanings. In present usage ‘creationism’ can mean two radically different things:-

- (1) In the use of atheism or religions and philosophies that do not believe that there is a god who creates, creationism means the doctrine of any manner of Creator God or gods. This not only rules out biblical cosmologies, but also modern theistic evolutionary variants based on a critical use of biblical texts. As Richard Dawkins has said of those defending both God and evolution, the notion of a Creator God is gratuitous once evolution and natural selection is accepted. In this of course, he agrees with his creationist antagonists. As Laplace the atheist chemist once said: “God? I have no need of that hypothesis.”
- (2) In the use of certain fundamentalist Christians creationism means the doctrine that God created the heavens and the earth precisely and literally as the book of Genesis describes it. This use includes different schools of interpretation since Genesis itself is obscure on a number of points even from a literalist point of view. Thus, we have Young Earth Creationists who believe that humans walked with dinosaurs on a 5000 year old earth and others who share the same aversion to evolution but see Genesis as applying over a much longer timescale. The Young Earth Creationists have a lot of explaining to do as they confront the fossil record. The usual tactic is to suppose that God for some bizarre reason deliberately fooled humanity by planting fossils that were much younger than they now appear to be. The Old Earth Creationists at least don’t try and falsify history, but they still fall into the same trap of supposing that the Bible is an ageless science textbook.

Note that in both usages of “creationism”, both sides of the debate resolutely resist the idea that evolution is not only compatible with belief in a Creator God but also might enhance that belief. Those holding to this excluded view of theistic evolution might be tempted to declare “a plague on both your houses!” and withdraw from the arena. That would be a tragedy, however, for both science and Christianity for the simple reason that the world is watching with bewildered amusement. Many are concluding that either Christianity really is bankrupt in that it cannot absorb new insights about the world or on the other hand that science cannot be trusted to

unearth the truths of the Cosmos. The battle lines have been drawn and both sides stand to be mortally wounded as the conflict escalates. We desperately need to move the debate onto new ground where this unnecessary and damaging clash may cease.

Some suppose that Intelligent Design might provide this new ground. Here is an approach that declares itself to be only scientific in its method, challenging some if not all of the tenets of evolution on Darwin's own territory. In the main Intelligent Design is justified by the theory of "irreducible complexity" and the alleged irrationality of chaotically generated order.

On "irreducible complexity" such protagonists as Michael Behe have argued that the flagellum of a certain species of swimming bacterium, acting like a miniature biological outboard motor, cannot possibly have assembled itself entire and complete by evolution because no component part can work at a simpler level on its own, a prerequisite of the evolutionary account of such adaptive features. This has proven to be a classic example of the discredited God-of-the-gaps "*we can't explain this*" approach. However, it wasn't difficult to prove the independent viability of certain individual components of the flagellum and with these discoveries, Behe's argument failed spectacularly. It has been the same with every other "*we can't explain this*" example presented by proponents of Intelligent Design. Every gap in our knowledge has been subsequently filled by science. This has happened many, many times before in the history of the relations between theology and science. You would have thought that Christian apologists would have learned the lesson by now. This can be a difficult message to hear but a necessary one ... an Intelligent Designer isn't required to *explain* anything at all. God is not the solution to a difficult equation. He is something else entirely.

This, of course, has not stopped creationists, both crude and sophisticated, attempting to get textbooks changed in American public schools so as to allow for Intelligent Design. In this they pursue a relentless onslaught on what they see as Godless science in the classroom. They hope to convince a whole generation by stealth that Darwin got it wrong! Under the guise of intellectual humility and the provisionality of all human truth seeking, they try to show that evolution is "only a theory." On this basis the inverse square law of gravitational attraction is "only a theory" but those who deny it would do well to watch their step anytime they walk along the edge of a cliff!

The other target of Intelligent Design has been the alleged inability of chaos and randomness to generate order from within itself and without exterior agency. This is perhaps the most ignorant argument of all, since even in the most chaotic of systems, such as the weather and quantum indeterminacy, there is order at a different level of scale through the operation of natural laws

and probabilistic effects. Even when such laws are based on probability they make testable predictions concerning natural phenomena. The pervasiveness of order and the emergence of complexity through physical reactivity do not require any direct supernatural intervention for their accomplishment. God does not need to keep tweaking Creation for it to work. Even life itself can emerge from within wholly natural processes given enough time for the cosmic shake out of randomness to generate the primal building blocks of life. “Surely,” it might be objected, “there must be a Designer to animate these blocks into life!” Well, aside from the biblical respectability of such a view taken at face value, (Genesis 2:7), this animation is not necessary given that life is at its most basic level is simply a reproducible system of embodied data transmission driven by energetic chemical reactions. It is self-sustaining once the connections are made and these connections are built into molecular reactivity that in turn is sustained by the behaviour of particles and forces condensing out of the Big Bang through its initial conditions and subsequent unfolding history. Of course, animal life in general and human life in particular is much more than this but the complexity that evolves “mind” is truly built into the system from the beginning. That’s the beauty and real power of God’s creative activity, so much from so little. Truly there is no “God-in-the-machine,” no “God-of-the-gaps” needed to explain how natural processes work. God has ordered each part of creation so that it has power to evolve “under its own steam” as it were.

Some might still object at this stage of the argument that a scientific world view leaves no room at all for a God who intervenes in his creation. If he is not needed to explain either for the motions of the planets or the tremulous vibrations of life and thought then what USE is he? The answer of course is “no use at all.” The wrong question has been asked, itself based on a faulty premise. As I hope I have shown thus far, God is not a term for that which we do not as yet know. God is not a substitute for understanding the fibres of created reality. Faith searches deeper than this. It reaches beyond all phenomena accessible to rationality to a level of meaning embedded in the every aspect of a Cosmos that God himself has made creative according to his purpose. No room needs to be made for God. He is the Word, the Logos behind all things that create.

In pre-Christian Greek philosophy the logos (pl. logoi) was the divine reason embedded in the Cosmos giving it form and meaning. There was no place where this fecundity was absent, no time when it was not operational. St. John, writing for a very early Gentile Greek congregation, in his gospel prologue (John 1:1-18), felt very comfortable in taking the extremely radical step of equating this logos (word but more than word) with the Hellenised version of the Hebraic “Word” of God and then making this Greek / Hebraic logos embodied as Christ. St Maximus the Confessor

adeptly refined this truth of all the logoi being expressed in the creative work of the Logos, the synergistic work of the created and the Uncreated.

This fusion of Hebrew and Greek thought can be read in two different directions, although it is sadly only too often read in one. The first is that Christ is the apex of that divine fecundity for humans in the flesh. The second neglected direction is that this Christ henceforth is the cosmic Logos ... God in other words becomes for monotheism not only the transcendent God of Judaism who may not be named but also now the rational immanent fecund principle of the Cosmos' own generative power. This also is Christ. Not for nothing then does St. John therefore speak of the Logos in these terms in the first verse, (I have changed "Word" back to "Logos" as in the Greek original):-

*In the beginning was the Logos, and the Logos was with God, and the Logos was God. He was in the beginning with God; all things were made through him, and without him was not anything made that was made." (John 1:1-3)*

Now the interesting thing is that this passage is read in the Orthodox Church not at Christmas as in the west but at Easter. In other words, the Logos is to be understood in the Orthodox East as the Christ Pantocrator, astoundingly, something human embedded in the Cosmos itself which is the principle of its liberation from corruption and decay, the resurrection. We are a very long way here from the sickly sentimental piety of Jesus meek and mild, just as limited and bound on earth as in his own psyche. The New Creation of the Christian Gospel is literally just that ... a New Creation.

What bearing does this have on an Orthodox understanding of creation? Simply this, God is not in the gaps. There are no gaps for the Logos lies behind All and the Whole. The Whole is where Christ is, and in him the Whole is where we are also called to ascend. Therefore, since Christ as Logos is the Whole (St. Paul talks of the "pleroma" the fullness, Ephesians 1:23) anything at all that human wisdom discovers about the Cosmos is a facet of his glory and presence. This of course is a hermeneutic for Christians. No one is expecting those of other religions and none to accept this vision short of faith. However, it does mean, for Christians at least, that all science, no matter what it discovers, is Christomorphic, Christ-shaped. Our understanding of Christ is growing therefore in step with human knowledge. There is no conflict, no antagonism between science and Orthodox Christianity. How could there be? One reflects the other ... in the Logos.

The difference then this faith makes to the story of the Cosmos concerns a certain way of looking at life and venerating it as a vehicle of the Holy Spirit's creativity, of the Word's power, of the Love of God. This religious truth is not subject to verification, nor can it be falsified. Only those with an impoverished notion of truth limited to the realm of provable assertions will exclude this beauty embedded in the Cosmos, this divine imprint of the Creator who has so arranged His world as to make it not only the object of wonder but also the subject of rational enquiry.

What then are the theological resources for such a view of Creator and creation or is this just a convenient modernist readjustment to inconvenient facts? If an Orthodox priest is to dignify such an exposition with the title "Orthodox" he had better be able to show that such an understanding is both compatible with and indicated by Scripture and Tradition. We have already referred to St. John's prologue, but we need more evidence than this to make a persuasive case.

First, however, we must deal with two little problems entitled "biblical literalism" and "biblical sufficiency." These are precepts of the conservative Protestant world and as I indicated earlier, they could easily account for the impasse that such traditions encounter when matching biblical truth against truth claims seen as antithetical to the scriptures. If the scriptures bear literal and unchanging truth for all time then there will always be a problem with accommodating advancing knowledge in any sphere of human activity. If the scriptures are sufficient for faith then one must ask why there are so many biblical interpretations and idiosyncratic sectarian doctrines generated by groups who uniformly hold to this view. Creationism constitutes a perfect example of this hermeneutical dilemma in fundamentalist Christianity. The Bible says that God made the earth in 6 days about 6000 years ago yet astronomy tells us that the Universe has evolved over the last 13 billion years and it is still changing, still creating.

There are only two possible responses for biblical literalism and biblical sufficiency. Either science is wrong, or Genesis must be tweaked to make it appear to accommodate a longer timescale. There can be no such choice with the theory of evolution though. This is something that no creationist can stomach. Not only is it not in the Bible but it would have us believe that humans are not special, not made from scratch in the image and likeness of God ... or so they *think!* Orthodox Christianity, and indeed other Christian traditions refute both biblical literalism and biblical sufficiency. From the New Testament writers to the Fathers and beyond there have existed several ways of interpreting the biblical text, historically if that is appropriate, typologically or allegorically if that is where the spiritual sense lies. No patristic biblical commentator felt constrained by the Scriptures thus interpreted to deny any aspect of truth discovered in other spheres of human activity. This attitude is characterised by St. Augustine in

a commentary on Genesis from which I shall quote at length. This will connect what I am claiming about Orthodox biblical interpretation to the more positive aspects of Orthodoxy's contribution to this debate.

St. Augustine wrote this:-

Even a non-Christian knows something about the earth, the heavens, and the other elements of this world, about the motion and orbit of the stars and even their size and relative positions, about the predictable eclipses of the sun and moon, the cycles of the years and the seasons, about the kinds of animals, shrubs, stones, and so forth, and this knowledge he holds as being certain from reason and experience.

Now, it is a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics; and we should take all means to prevent such an embarrassing situation, in which people show up vast ignorance in a Christian and laugh it to scorn.

The shame is not so much that an ignorant individual is derided, but that people outside the household of faith think our sacred writers held such opinions, and, to the great loss of those for whose salvation we toil, the writers of our Scripture are criticized and rejected as unlearned men.

If they find a Christian mistaken in a field which they themselves know well and hear him maintaining his foolish opinions about our books, how are they going to believe those books in matters concerning the resurrection of the dead, the hope of eternal life, and the kingdom of heaven, when they think their pages are full of falsehoods and on facts which they themselves have learnt from experience and the light of reason? [*Saint Augustine, On the Literal Meaning of Genesis, Book 1, Chapter 19*]

Without knowledge you might be excused for thinking that St. Augustine was alive today and writing for today. Sadly, maybe little changes. What is presented here is an approach taken by the Fathers more generally to the relationship between revealed truth and the natural sciences and humanities. This attitude is found even in the first 300 years when the Church was persecuted by the world. St. Justin the Philosopher, (165), a martyr no less, saw Christ as the fulfilment of classical Greek religious impulses with Plato as a type of Greek "Moses." Clement of Alexandria in this same period (215) wrote the following:-

Scripture gives the common name of wisdom to all the earthly sciences and arts generally, everything that the human mind can achieve... for every art and every knowledge comes from God. [Clement of Alexandria]

It is true that some Fathers were less accommodating. Tertullian (who was later to go AWOL with the Montanists) declaimed: “What has Jerusalem to do with Athens?” Nonetheless, Christians rarely despised secular learning as such and after the legalisation of Christianity a much stronger position emerged. The Cappadocian Fathers in the fourth century welcomed the sciences and arts as handmaids to theology. St. Gregory Theologian, my patron was a notable poet theologian. Here are some of his insights:-

Just as in subtle musical harmony every string produces a different sound, one high, another low, so also the Artist and Creator-Word, having installed different inventors for various occupations and arts, has given everything in the possession of all those who wish in order to tie us by the bonds of fellowship and love of man and make our life more civilised. [St. Gregory the Theologian]

... everyone who has an intellect recognises scholarship as a primary blessing for us. And not only this noble scholarship of our own, which... has as its subject only salvation and the beauty of what is contemplated by the mind, but also the external scholarship which many Christians abhor out of ignorance as unreliable, dangerous and diverting from God”. [St. Gregory the Theologian, 389]

and from St. Basil the Great ...

External sciences are not without use. [St. Basil the Great, 379]

For two millennia Orthodox theologising has proceeded on this basis. We cannot survey this whole period but to complete the witness let us consider two more recent Russian thinkers, the first a saint of the 19<sup>th</sup> century, St. Philaret of Moscow, (1867).

The faith in Christ is not in conflict with the true knowledge, because it is not in union with ignorance.

The second reflects the work of a contemporary Russian Orthodox deacon, Andrey Kuraev, who has done much to remind the Russian Church of the harmony between science and faith. In a lecture arguing for a more positive evaluation of evolution he based this on Genesis itself but in a quite unforced manner. He refers both to St. Philaret and St. Basil:



In the Book of Genesis God names every creature and by this naming calls every creature from the abyss of non-being. In the lovely expression of St. Philaret of Moscow, the creative "Word articulates all creatures into being." What we see here in Genesis is a dialogue. The call produces a response to God's life-giving action. "The earth germinates, but it does not sprout that which it has but transforms that which it does not have, as much as God gives the strength to act," wrote St. Basil the Great. The seeds of life are not found in the earth; rather, "God's word creates beings" and plants these in earth, which, in turn, germinates them. Earth is unable to be fertile by itself, yet there is no reason to downplay its role: "Let the earth bring forth by itself without having any need of help from without." While life proceeds from earth, the very life-giving ability of matter is a gift of the Creator. ...

The emergence of life in the Book of Genesis is both evolutionary (as earth is producing plants and simple organisms), and also a "leap towards life," occurring by the order of God.

God calls the Earth to a synergy, to a creativity that is indicative of the God-given internal creative abilities of the Earth. Different stages in the history of Creation open with God's call upon "earth."

Could there be a clearer indication of the compatibility of a truly Christian understanding of creation and the task of science? Yet how can it be that some Christians, in this case the Orthodox, can speak in such positive terms about evolution and others, self-styled creationists, find this so difficult? A possible answer to this question lies in the manner of theologising, even the faith itself. I do often wonder if we have more to celebrate and share as Orthodox Christians with agnostic scientists than with the militant fundamentalists who now as so often before bring our faith into disrepute ... as they also once did in the time St. Augustine! Perhaps we may also hope that in this dialogue Orthodox theological reflection on the wonders of creation will be deepened and refined by the insights of contemporary science. We have all got some catching up to do!

### **Appendix: The Knotty Problem of Death**

If evolution is a true scientific account of the development of life in all its stages and that living organisms have always died, how do we reconcile this with the Scriptures which insist that death was brought about by the sinning of our first parents in Eden?

Scientifically speaking, death is accounted for by the second law of thermodynamics... that is, entropy or disorder increases over time in any physical system that has an energy gradient, living or non-living. Open a hot oven in a kitchen and soon both oven and kitchen will be at the same temperature. Death is disorder. Corruption and death are, therefore, embedded in this fallen

world order. So, all life has died from the very beginning, from the origin point, maybe a few hundred million years after the primeval earth had coalesced and cooled down. Such is the nature of all biological life, including human biological life, that we all die. We have always died .... biologically speaking.

At some point in hominid evolution consciousness emerged with humans being aware of themselves and the transcendent reality that we call God. When this happened and whether this first occurred in Homo Sapiens, the Neanderthals, Homo Erectus or some other hominid is entirely inconsequential. Moreover, this was a relational awareness, personal and deep, potentially at least.

So, we now find humans in an Edenic Garden of conscious awareness and relatedness to God, having the possibility even of transcending biological death and acquiring immortality to eternal life (rather than eternal death).

However, we necessarily have freedom of choice, so self-awareness and God-awareness can also be turned inward by the hubris of autonomous egotism, the temptations of the diabolical "snake", already present in creation. The original sin was that of Satan not Adam and Eve. Humans were first led astray by the serpent, suggesting envy of God and rebellion against Him, precisely the same envy that had thrown Lucifer out of heaven.

The origin of death, therefore, predates humanity in the angelic fall. The fall of our "first parents" in acceding to the devil's temptations was a loss of the possibility of transcending pre-existing death. Bereft of the possibility of immortality, humans were expelled from this Edenic paradise, and necessarily so as to ensure that the Edenic realm would not become for them a poisoned immortality of damnation and eternal death.

When Christ destroyed death in the resurrection He reopened Paradise to us, if that is we would now choose repentance and grow in obedient and loving closeness to the Trinity who has saved us, and who is always saving us. We can now grow closer to God than we ever could have done in our prelapsarian state. Death is no more for us, so we have a head start on the grace-full ability to conquer sin in our lives and enter, eventually, into the full fruit of theosis. At that point we ourselves are the Garden of Eden. We shall then be clothed in the resurrection body and our immortality will have been perfected.

Evolution simply and only describes a creation primordially subject to death. Eden was a death free zone in our emergent human consciousness of God, but not, clearly, an actual place in this world.

Our faith can never disagree with science because each one seeks a different truth ... science that of the processes of a fallen world and theology the hope of the world to come, which is the kingdom of God already breaking through into this world and regenerating it into the New Creation.

St Athanasius, centuries ago, testified to this distinction and what he called “the natural law of death very powerfully in these words with which we will close.

Upon them, therefore, upon men who, as animals, were essentially impermanent, He bestowed a grace which other creatures lacked—namely the impress of His own Image, a share in the reasonable being of the very Word Himself, so that, reflecting Him and themselves becoming reasonable and expressing the Mind of God even as He does, though in limited degree they might continue for ever in the blessed and only true life of the saints in paradise. But since the will of man could turn either way, God secured this grace that He had given by making it conditional from the first upon two things—namely, a law and a place. He set them in His own paradise and laid upon them a single prohibition. If they guarded the grace and retained the loveliness of their original innocence, then the life of paradise should be theirs, without sorrow, pain or care, and after it the assurance of immortality in heaven. But if they went astray and became vile, throwing away their birth right of beauty, then they would come under the natural law of death and live no longer in paradise, but, dying outside of it, continue in death and in corruption.

(St Athanasius: “On the Incarnation”)

Fr. Gregory Hallam

## Further Reading ...

<http://www.romanity.org/mir/me01en.htm>

*Fr George Metallinos argues that creationism is a problem in the Christian west, not the Orthodox east. He traces this to a fatal flaw in the western Christian notion of God.*

<http://www.talkorigins.org/faqs/faq-god.html>

In defence of evolution from a Christian point of view.

<http://www.incommunion.org/articles/the-orthodox-church-and-society/xiv>

*How Orthodox Christianity and the humanities / sciences are not implacable enemies.*

[http://www.fatheralexander.org/booklets/english/evolution\\_kuraev.htm](http://www.fatheralexander.org/booklets/english/evolution_kuraev.htm)

*A Russian Orthodox deacon, a professor at Moscow Theological Academy defends the compatibility of Genesis and evolution.*

(underscore \_ between “evolution” and “kuraev”)