

A Response to Coyne, MacDonald, Ruse, and Wilkinson

BY DENIS ALEXANDER

I am pleased to note that my paper¹ speculating on the initiation of human spiritual life, with its suggestions of possible ways to relate theological and scientific truths, has stimulated a good discussion. As is the way with such discussions, the topic has broadened in the process, so here I will simply cherry-pick a few points that seem most pertinent.

I should start by emphasizing that on a scale of 1-10, where 10 represents optimal importance for Christians, this topic for me scores about 1, maybe 2 at a push. I became a Christian in 1958 and first published something on the subject half a century later in 2008², although I wrote on many other topics in the intervening period - so I do not think I can be accused of exactly rushing into print on the matter. Personally I do not believe that the plausibility or otherwise of one or the other of the suggestions that I labeled 'models' (more below) makes any significant difference to any central points of Christian doctrine.

One motivation in proposing such models is, as Loren Wilkinson correctly points out, to provide resources to those Christians who have a problem with evolution, illustrating the various ways in which biblical truths, central to the faith, can happily (and consistently) be maintained by those, such as myself, who have all their lives been passionate Darwinians. That is not to say that I view such models merely as utilitarian tools to persuade creationists to embrace mainstream science. I do actually believe that some models are more plausible than others and, as a matter of fact, haven't read anything in the ensuing discussion that seems to me to render the *Homo divinus* model any less plausible than it was before, although I do think that there are some misunderstandings on what the various models do or do not claim.

American Atheists and the Use of Language

In this context one might have imagined that evolutionary biologists interested in education, either atheist or theist, would be extremely pleased to find fellow biologists helping to break down unnecessary barriers preventing people from embracing contemporary science. Indeed, as someone rather well-known for my critique of Intelligent Design, I have often been teamed up with atheists in debates and panel discussions on the subject, and find such educational opportunities useful. To his credit Richard Dawkins has, on more than one occasion, exhorted religious communities to engage in such enterprises, and has himself teamed up with the Bishop of Oxford to talk about evolution in the public sphere. Let us not forget that the very first written response to Darwin's *Origin of Species* on record was effusive in its praise, a letter to Darwin written by an Anglican cleric, his friend the Revd Charles Kingsley, on 18th November 1859. Kingsley was one of many clerics who through his lecturing and writings helped to get evolution widely disseminated in the 1860s and onwards.³

In this respect I think that Jerry Coyne⁴, may be somewhat out on a limb even within his own atheist community in his apparent refusal to engage in any kind of sensible intellectual dialogue. Loren Wilkinson has drawn attention to the intemperate language that characterizes his web-page. In the academic circles in which I move and have my being, there is generally deemed to be an inverse relationship between pejorative language and intellectual content. Using excitable words to keep repeating the assertion that one disagrees with someone else's position can too readily become a substitute for thought, and ends up being merely boring. In the general verbal froth, factual accuracy also tends to go out the window. In this respect I note that in Coyne's comments I have been promoted to being a 'physicist' (by the way, I am sure that Coyne knows that the word 'physicist' was invented by another nineteenth century Victorian cleric,

William Whewell). Whilst believing that physics is an honorable and worthy profession, to put the record straight let me just say that I have been in the biological research community for the past four decades, finally retiring from active science and closing my lab in 2008 to engage full-time in the work of The Faraday Institute. What I suspect may prove to be my last scientific research paper appeared on Christmas Day, 2008, in the *New England Journal of Medicine*.⁵

Sociologically I actually find the intemperate language of certain commentators on the US science-religion debate, such as Coyne, quite intriguing. I come to the US to speak on science and religion fairly often. For a European the polarized nature of the contemporary public debate in the US is rather striking. Most European countries, including Britain, are far more secular than the US, which is currently one of the more religious countries in the world by any measure. The point is made by taking a look at the 26th British Social Attitudes Survey report (January 2010) which revealed three populations: first, those who believe, identify with a religion and attend services at least occasionally (i.e. three traits present in one individual); second, the non-religious who don't believe and never attend services; and third, the "fuzzy" middle, who either believe, or attend services occasionally, but not both together. The religious category in the US is 70%, compared to 26% in the UK; the "fuzzy group" is 24% for the UK, 36% for the US; and the non-religious group is only 4% for the US, but 31% for the UK. Most pertinent of all for our present discussion, when asked for agreement with the statement "I don't believe in God", a tiny 3% of the US population agrees, compared to 18% in the UK, and Elaine Ecklund's survey data summarized in her fine book *Science vs. Religion: What Scientists Really Think* make clear that elite US scientists are heavily over-represented within this tiny 3%.⁶

There are clearly many different reasons for the polarized and somewhat grumpy nature of the science-religion debate in the US at the present time, but the fact that only 3% of the US population declares itself as atheist has to be one of the factors in the equation. Minorities tend to be more strident; they feel they have to shout more loudly to make themselves heard in the public domain, to engage in confrontational politicking in order to catch the ear of the media. And in the present socio-political context, in which US society finds itself particularly factious, with some disastrous outcomes, it becomes too easy for all forms of disagreement to be cast within the framework of rhetorical posturing in place of calm reflection. Coupled with this is the obvious fact, to return to the immediate topic, that if more than 40% of your population disbelieves (for religious reasons) the theory of evolution, which as a matter of fact provides the integrating framework for all contemporary biological sciences, then at the very least this is frustrating. On this point I have to say that my sympathies are rather with Jerry Coyne, though if he genuinely wants to reduce that 40% figure, then adopting confrontational attitudes is not going to help.

I also think that there is too often an assumption in the US that because something happens to be the case there, *ipso facto* it must be the case in all other parts of the world. But every country is unique in its history, and in its religious and cultural *mores*. Take creationism, for example. Until recently I think it is fair to say that in Europe it remained virtually unknown. As a Christian studying biochemistry in the Oxford of the mid 1960s I had never heard of it, nor had any of my former student colleagues (I have checked); creationism, if it existed, was invisible. Since that time it has been exported from the US and now has some presence, albeit small.

The importance of historical and cultural contexts

A further contribution to the present polarization of science-religion interactions in the US comes, I think, from the lack of awareness by the scientific community of the historical roots of their disciplines. I

should hasten to say that ignorance of the history and philosophy of their disciplines is an equally striking characteristic of many UK scientists. The difference in the European context is simply that scientists often live and work within or near historical environments that act as implicit if not explicit reminders of their roots.

Some years ago I remember being in an immunology conference in France that happened to be located in a fine old convent as its venue, a tiny corner of the convent still being occupied by nuns. Before his talk, one of the US speakers made a quip implying that ‘modern science’ was displacing ‘backward religion’. In this audience of largely European scientists, nobody laughed. I am sure this was not because they were any less secular than their US counterparts, in fact probably more so. I suspect rather that, apart from being in rather bad taste (the nuns were, after all, our hosts), it is difficult to avoid the Christian roots of science if you are living and working in one of Europe’s older universities, be it Padua, Paris, Leuven, Heidelberg, Amsterdam, Oxford or Cambridge (and of course dozens of others).

As I ride my bike every week around Cambridge (the quickest way to navigate streets designed for horse and cart), I pass places such as the Old Cavendish Laboratories (the host of 29 Nobel prize-winners) where a verse from Psalm 111:2 is engraved over the entrance in Latin (“Great are the works of the LORD; they are pondered by all who delight in them”). The inscription was approved by the committed Christian, James Clerk Maxwell, director of the Cavendish, as it was being built in the 1870s. In 1973 when the Cavendish was moving to its new site the same verse was inscribed over the new entrance, only this time in English. As I continue on my bike down the road I pass Trinity College, where one of the founding fathers of modern biology, John Ray, used to give lectures on natural history in its chapel, believing that these were just as much an act of worship as that provided by the choristers. A few years later we find the passionate albeit somewhat unconventional theist Isaac Newton in the same College, who wrote far more on biblical interpretation than he ever did about science. Round the corner on my bike and jumping a century we come to Christ’s College where Charles Darwin read divinity, later recalling in his autobiography how his study of the natural theology of William Paley during his student days was his main source of intellectual stimulation. Though drifting into agnosticism in his later years (he was never an atheist), Darwin always retained cordial and polite relationships with his many clerical friends and correspondents.

I could go on, but you get the point. “Yes,” I hear you say, “but isn’t it the case that today the UK is home to some fire-breathing scientist-atheists whose fame has spread throughout the world?” True, the way the media works does give huge scope for the dissemination of extremism, but the point in this case is that the number of such ultra-enthusiastic scientist-atheists is really small, to be counted on the fingers of one hand. They are retired elderly professors, with time on their hands, and to be frank my secular colleagues tend to treat them as slightly odd. What’s the point in getting all hot under the collar in crusading for a belief system that, in essence, just represents a disbelief in someone else’s belief system? That does seem a bit pointless. In a postmodern culture it is far more common, in my experience, for one’s faith to be treated with polite respect: “Oh, so you go to church on Sundays, that’s really nice for you, I play golf.” In a multi-cultural society extremism in all its forms is treated with deep suspicion within the academic community, and indeed without.

Ironically – ironically, that is, in light of the lack of penetration of their publications into the US scientific community – it is US historians and philosophers of all people who have done the most to subvert the so-called ‘conflict model’ of the relationship between science and religion. It was the historian F.M. Turner (who sadly died recently) who promoted the idea, since widely adopted, that the roots of the conflict model, in the English speaking world at least, may be found in the professionalization of science

that took place in the late nineteenth century.⁷ As another fine US historian of science, Steven Shapin, remarks:

In the late Victorian period it was common to write about ‘the warfare between science and religion’ and to presume that these two bodies of culture must always have been in conflict. However, it has been a very long time since these attitudes have been held by historians of science.⁸

Clearly the scientific community needs to do some catching up with the historians on such matters.

Models

Talk of the conflict model brings us to the comments made by Eric MacDonald⁸ (where, again, I find myself promoted to the status of ‘physicist’ – it is wonderful how mutations spread). If one can get past all the polemical huffing and puffing, then MacDonald seems to be disagreeing with three points. First, he does not like the idea of ‘integration’ of science and theology, an expressed aim of the BioLogos website. Second, he does not like the use of terms such as “models” and “data-sets” outside of science. And, third, he thinks my biblical hermeneutics is wrong.

On the first point, I’m inclined to agree that the word “integration” is ambiguous. In its strong form, it could be made to mean that the aim is to somehow mingle theological discourse with that of scientific practice. I am certainly against that, and I don’t think that’s what BioLogos is about. Each academic discipline has its own integrity, its own specialized language and its own criteria for assessing its truth claims. Mingling different forms of disciplinary discourse can readily lead to confusion. Fortunately, however, there is a weaker meaning of “integration” which simply refers to the attempt to relate two bodies of knowledge together in a coherent kind of way. In the context of the science-religion discussion, this is often labeled the “complementary model” for understanding the relationship between science and theology. The scientific and theological narratives provide complementary perspectives on the same reality viewed through different windows. The narratives are concerned with different kinds of question.

And there’s the rub: MacDonald, as Wilkinson points out, is an old-fashioned positivist who doesn’t believe that theology does express “knowledge” in any shape or form. It’s difficult to relate two bodies of knowledge if you don’t think that one represents “knowledge” anyway. I will not critique positivism here as Wilkinson has already carried out that task very effectively. Suffice it to say that whereas positivism as a formal philosophy went extinct many decades ago now, hoist by its own petard (meaning ‘subverted by its own weapon’ – you may recognize the phrase from Shakespeare’s *Hamlet*), its offspring scientism continues to survive in certain ecological niches. One of the characteristics of people who think that there is only one form of reliable knowledge and, furthermore, that they possess it, is a kind of strident certainty that casts a withering scorn upon all lesser mortals who do not share their particular opinion (“I am embarrassed even to write this”). Such a tightly constrained understanding of what counts as true knowledge no doubt provides a considerable degree of psychological comfort to the community who share the same view. But, like all forms of fundamentalist certainty, such a stance does not take sufficiently seriously the sheer complexity of human ways of knowing, nor the many different ways in which reliable knowledge are acquired in different disciplines.

As it happens, I could easily have presented the views expressed in my paper without any recourse to the language of “models” and “data”; none of the arguments presented depend on the use of that

particular language. Nevertheless, I do want to discuss the use of such terms in science and other disciplines briefly, because I think that also might help positivists to see that the acquisition of scientific knowledge is quite a complicated process, let alone other forms of knowledge. MacDonald and several bloggers point out that models in science can be tested and refuted (or not) by the acquisition of data in a proper kind of Popperian manner. True, in many scientific disciplines this approach works rather well. The double-helical model of DNA really does fit the data better than a triple-helical model (although, as it happens, triple-helices can exist). But now contrast that with the physicist Brian Greene's recent book *The Hidden Reality: Parallel Universes and the Deep Laws of the Cosmos*.¹⁰ In his book, Greene expounds no less than nine different rival cosmological models to explain the existence of our present universe. These range from various versions of inflationary theory, to string theory, to the idea that the universe is a holographic projection. Great fun as these are as ideas, there is just one catch: not a single one of these models is testable, even in principle. As the cosmologist George Ellis points out in his review of the book in the current issue of *Nature* (current as I write): "we cannot make direct observations of domains beyond the observational horizon – the greatest distance that light can have traveled toward us since the universe became transparent to radiation 300,000 years after the Big Bang".¹¹ As Ellis further comments: "The multiverse argument is a well-founded philosophical proposal but, as it cannot be tested, it does not belong fully in the scientific fold," and "Scientists are beginning to confuse science with science fiction".

Lest those from other disciplines begin to feel a little smug at this point, on the assumption that *their* forms of enquiry wouldn't lead to such an exotic proliferation of untestable ideas, one only has to look at the rival models for the origins of religion in anthropology or in evolutionary biology, to realize just how many different models can flourish for so long, all without exception being heavily under-determined by the data. Clearly these particular examples are not in the same category as those from cosmology, because at least further data could come along that could help to distinguish between them, but for the present they remain to a large extent untestable ideas (well, what *were* the religious beliefs, if any, of people living in Herto, Ethiopia, 160,000 years ago?).

So, should we therefore ban all forms of speculative model-building in science because, at least in our present state of knowledge, we can see no conceivable way of determining which, if any, of the rival models might be the correct one? Personally I don't think so - otherwise a lot of the fun and intellectual curiosity would be sucked out of science, although it is important also for the scientist to distinguish carefully in their writings between wild speculations and solid testable models. In practice they do not always do so, and because the media are rather partial to whacky ideas, the public then ends up absorbing the speculations as if they were serious science.

But the point in our present context is that the use of the language of "models" in science is often ambiguous, and models may be happily proposed, as in this case, in the complete absence of any kind of data that would discriminate the models (which could all be wrong anyway). Yet the speculative approach is often how progress in science is made. How many times in the discussion sections of scientific papers (or in conference talks) have we heard the words "It is tempting to speculate that...." Scientific ideas are always moving well beyond the data, and no one minds that – as long the data catch up in the end.

The language of "models" and "data" is in any case not confined to science, but crops up all over the place, in history, philosophy, economics, theology, and other disciplines. Its application in history and philosophy comes somewhat closer to the way in which I was using the terms in my paper. Try Googling *Historians+Models* and you will get about four million hits. Many of the papers posted are indeed by historians presenting various rival models for their views on intellectual history or on how to interpret

particular historical periods. Having said that, most historians probably steer clear of such language; the return of narrative means that historians are often suspicious of descriptive words that might imply static models of causation. The data of historical research are clearly distinct from those of (most) scientific disciplines, arising as they do from unique and unrepeatable events, although the similarities become closer with the ‘historical sciences’ such as geology and, for that matter, evolutionary biology. In the context of history, data are simply those items of observation or discovery that need to be reckoned with in model construction. As in science, so in history, the data require a very large degree of interpretation.

Philosophy provides another rich hunting ground for those interested in the use of the language of “models” and “data” in different disciplines. This time Google delivers a mere 3.4 million hits (for “Philosopher+Model”) and many of those are about the philosophy of the use of these terms in science. There is also a branch of philosophy called “model theory” which involves the formal interpretation of languages. But the use of the language of rival “models” in the sense in which we are using it here crops up often enough in philosophical discourse. Take, for example, the various rival models in the discussion about free will: libertarian, compatibilist, determinist etc. Are there data that can count for or against one explanatory model or another? Certainly. For example it is possible to measure whether Heisenbergian uncertainty could, in principle, make any difference to synaptic function, a topic of interest to libertarians. But in our present state of knowledge it seems very unlikely that any data or arguments will come along that will enable a definitive answer as to which model might be correct. New data can tip the interpretation slightly in one direction more than another, but all the models are likely to keep flourishing for a long time to come yet.

If that is the case with free will, how much more with rival models concerning the status and meaning of consciousness? There are those who, like Roger Penrose from Oxford¹², cast doubt on the idea that the conscious mind will ever be properly explained. There are those who think that it already has!¹³ The reality is that no one really has much if any idea as to how qualia and brain inter-relate. But that in itself surely shouldn’t stop thousands of flowers blossoming whilst the discussion continues. My point here is that rival models, theories, call them what you will, can continue on for decades, even centuries, in different disciplines, without any realistic hope of resolution, but that in itself shouldn’t act as a brake on the process of argument and enquiry. They might get sorted out one day, and in the interim the discussion is at least intellectually stimulating (and useful for student exam papers).

And that is one reason why positivism foundered as a formal philosophy. If you keep telling people that the perfectly valid questions they pose are really invalid because they cannot be answered by science, even in principle, so any statements you make are like writing on paper and nothing appears, then in the end people will just tell you to shut up and not be so boring and lacking in intellectual curiosity. And basically that’s what happened to positivism although, as mentioned above; more formally it was hoist by its own petard, because of course if positivism is true, then it must be false.

When it comes to theology, as one blogger in this discussion pointed out, there has been a rich use of the notion of models going back many decades. And in the arena of science and religion the use of models is prolific.¹⁴ I have myself written a short Faraday Paper on some of the models available for thinking about the relationship between science and religion.¹⁵ The whole point of the paper, to prevent any misunderstanding, is that there is certainly no one model that is satisfactory as some kind of overarching meta-narrative for the relationship between science and religion.

Now, as already mentioned, I don’t think it’s at all necessary to use the language of ‘models’ and ‘data’ when considering, for example, the relationship between scientific insights and biblical theology.

Nothing of any importance hinges on such usage. But equally I can't see any reason not to use such language either – it's more a matter of convenience. Those who don't like its use in this context might prefer to use the language of "inference to the best explanation" (IBE), the instinctive task that we all carry out in the course of our daily lives to infer that, given x , y and z , such-and-such is most likely the case.¹⁶ Scientific discourse is saturated with IBE-type language, not least in the discourse of evolutionary biology. Inferring what might have been the case based on x , y and z is certainly what the current discussion in this essay is about, but I find talking about different models is simpler (and yes I know that Peter Lipton, an Associate of The Faraday Institute before his untimely death a few years ago, was a realist in science but not in religion, but that is another discussion).

Hermeneutics

One of the areas in which I think we all broadly agreed in this discussion is on the subject of hermeneutics. As Wilkinson states in his correction of comments by Coyne, it is simply not the case that 'liberals' interpret the early chapters of Genesis metaphorically whereas 'evangelicals' interpret them in a wooden literalistic kind of way. The most conservative readings of the texts, be they from the Early Church Fathers, early Jewish commentators, or the reformer Calvin, have always taken these chapters to express theological truths using figurative and metaphorical language. The modernistic tendency by young earth creationists to read the texts as literalistic history, or even as scientific texts, is particularly characteristic of the late twentieth century, and it is surely no accident that the enthusiasm by many Muslims to find science in the Qu'ran has come to prominence over the same period. One could, indeed, blame positivism for this tendency. If the only "real" truths are scientific truths, then presumably my holy book must contain science, otherwise its status is somehow lowered, or so the thinking goes. Such thinking is a typical product of modernism.

My personal view, as I have argued at some length in *Creation or Evolution – Do We Have to Choose?*, is that the early chapters of Genesis are expressing theological truths using figurative language. If pressed, I would want to call this genre of literature a 'theological essay'. These chapters are certainly not history in the sense in which we generally use the word today, although let us not forget that a text can describe something that happens "in history", even though the text itself is "non-historical". Equally clearly the chapters are not science, for the simple reason that scientific literature as we now understand it, with its focus on the specialized meanings of technical words, did not exist at the time. And I certainly do not think that we should use contemporary science in our attempt to interpret the texts, a strategy known as concordism, which I am against. Rather our understanding of the texts has been hugely assisted by a study of their cultural and literary contexts, as Wilkinson points out, and as I have argued, again at some length, in my 2003 book published by Zondervan, *Rebuilding the Matrix*.

Given this broad agreement on hermeneutics, I was somewhat puzzled by the implication by some commentators that I thought otherwise. Upon reflection, I suspect that this is in itself a commentary on the different assumptions that arise from varying cultural and geographical contexts. Given the huge slice of the US population (around 40%) that identifies with various versions of creationism, and the enormous literature that attempts to "reconcile the early chapters of Genesis with modern science", I suppose it was inevitable that a paper written about Adam and Eve, in the same breath talking about anthropology, would be taken as yet another offering of that kind of literature. The paper for BioLogos was also in essence a brief Abstract of my 382 page book *Creation or Evolution – Do We Have to Choose?*, and the scope for misunderstandings is always greater when reading an Abstract than when reading the book.

Personally I have never thought that the early chapters of Genesis need any kind of ‘reconciliation’ with science for the simple reason that they are not about science. You might as well ask whether English cricket can be ‘reconciled’ with American football – they are just about two different kinds of thing.

So what are we actually trying to do when we speak of the models that seek to relate biblical theology to contemporary understandings of human evolutionary history? Some further clarifications appear to be in order.

Revisiting the Retelling and *Homo divinus* Models

The comments so far are really by way of introduction so that we can get going again with the main topic. But a few more general points still need to be highlighted in the context of comparing these two particular models:

First, it should, I hope, be clear by now that I don’t think there is any problem with using the language of “data” and “models” in this context, providing that we don’t start thinking that we’re using the terms as they’re generally used in everyday science. Since such terms are used, as we have seen, in a wide range of disciplines, there seems no particular reason not to use them here. If pressed, then I would say that their use in our present context is somewhat akin to the various models posited to provide evolutionary explanations for the origin of music.¹⁷ In other words, it is quite possible to generate plausible models for things which are consistent with various kinds of data and argument, including in this case a good deal of aesthetic insight, yet without any realistic hope of deciding between different models in the foreseeable future. If someone would prefer to label the Retelling Model and the *Homo divinus* Model, ‘informed speculations’, then I have no problem with that at all, except to say that in the end even speculation A may be more plausible than speculation B, so it comes to the same thing in the end. Carrying out thought experiments is the way that human knowledge expands.

Speaking of knowledge takes me to a second point, this one for the positivists. In many ways this particular discussion is one internal to the Christian community, a point that will become even more apparent below. Clearly models that discuss the possible ways in which humans first came to know God are not going to gain much traction in the minds of those who do not believe that God exists. So I wouldn’t blame atheists at all for thinking that even discussing such models is a bit of a waste of time. If I was trying to present arguments to atheists for belief in God, then this is certainly not where I would start! But my intention here is not to present arguments for belief in God, but instead to present some reflections for the world-wide community of around two billion Christians, who do as a matter of fact believe in God and, in their various ways, do believe that God can be known, and who, one presumes, do believe that theological knowledge counts as real knowledge.

Thirdly, it is important in discussing models to make it clear what they are trying to explain, and what they are not. The temptation in generating models is to try and make them do too many things all at once. The models that work best are those that try and join up a few points reasonably clearly rather than lots of points less clearly. Having said that, it is certainly not the case that the simplest model must by definition (due to its simplicity) be the best one. In science the best explanations are often provided by models that are actually quite complex, especially in the biological sciences. It all depends what you’re trying to explain.

What the Models are Not About

So let me emphasize here what I *don't* think the present Models under discussion are about. In his recent article posted on the Huffington Post site¹⁸, Michael Ruse was having a bit of a go at Alvin Plantinga's views on original sin and, *en passant*, took a swipe for good measure at my BioLogos paper. Now Plantinga is well equipped to defend his patch, so I will leave that to him, but Ruse's passing comment concerning the *Homo divinus* Model was, as it happens, based on a wrong assumption. Personally I do not believe, as Ruse seems to assume, in Augustine's theory of original sin, which suggests that somehow we inherit the guilt of Adam's original act of disobedience (but I suspect that Ruse has not read my *Creation or Evolution – Do We Have to Choose?*, so there is no reason why he should have known that). I find such a notion nowhere in Scripture, which is insistent that whilst it is certainly the case that, as a matter of fact, all do sin (Romans 3:23), yet each person is responsible for their own actions and their own sin (Deut. 24:16; Jer. 31:30; Ezek. 18:18-20; Matt. 12:36; Rom. 14:12; Hebr. 4:13 etc.). Romans 5:12 makes it clear that death came to all people by them actually sinning, not by inherited guilt.

This is why I mentioned above that I do not think any basic Christian doctrines hang upon the outcome of the various models under consideration. Christ's atoning work upon the cross was for the redemption of all sinners (John 3:16) who repent of their own sin and put their trust in Christ for their salvation (Acts 2:38). Christ died for our sin, not for inherited sin. So when Michael Ruse calls the idea that there was an original human couple who sinned and whose sin was then inherited by the whole of humankind "silly" (thank you Michael), I am inclined to agree, although there might have been a politer word to express the disagreement that turns out not to be a disagreement after all.

Having cleared one misunderstanding out of the way, we now have to deal with one other. Since I agree with 90% or more of Loren Wilkinson's two helpful articles¹⁹, I am somewhat relieved to find the odd point where I disagree, otherwise the discussion might have got boring. Wilkinson seems to think that the *Homo divinus* model is about the notion of when humankind first started being made in God's image. In practice I have been careful not to try and include that important theological notion within the model; otherwise I fear that we might be trying to make it do too much work. Now it is certainly the case that commentators such as Prof. R.J. Berry – someone who was certainly promoting the *Homo divinus* model long before I started writing anything about it – have gone much more in this direction, so I don't blame Wilkinson for not picking up on the distinction.²⁰

The reason for not trying to include the notion of 'image of God' in the model is just that I don't think it works very well. The language of 'image of God' first appears in Genesis 1, a chapter which I see more like manifesto kind of literature that lays down the principles and framework within which the rest of Scripture must be understood. 'Image of God' theology is a rich and diverse vein that runs like an undercurrent through the Old Testament, but which becomes much more explicit in the New, where we find that it is Christ who is the perfect image of God (Col. 1:15; 2 Cor. 4:4) and as we clothe ourselves with the "new self" we find ourselves being renewed in that image (Col. 3:10; 2 Cor. 3:18). For me a key point in the concept is that it is humankind that is made in God's image – the whole of humankind – "male and female He created them" – without exception (Gen. 1: 26-28). The manifesto provides a basis for the way in which we should treat all people, irrespective of color, creed or nationality. Everyone has a value that is independent of their genetic or other endowments.

So personally I don't think it's so easy to conceptualize such a profound doctrine as being like a 'thing' that can suddenly be bestowed upon someone, though I certainly respect those who wish to build the model in that direction. I suppose I see it as more akin to the phrase "All men are created equal" in the

US Declaration of Independence. They are endowed by their Creator with “certain unalienable Rights” and it seems to me that belongs more to manifesto literature. It is not that “unalienable Rights” began with Jefferson, just that this declaration encapsulated something deemed to be true for humanity in general, but (hopefully) to become especially relevant for this nation in particular.

What the Models Are About

Instead I start with a somewhat different set of questions when thinking about models such as the Retelling and *Homo divinus* models. Taking the corpus of Biblical literature as a whole, here we have a ‘grand narrative’ of creation, alienation from God due to human sin and disobedience, redemption through Christ, and a new heavens and a new earth. We have the possibility of fellowship with God through freely willed choice. Our nearest cousins, chimps and bonobos, to the best of our knowledge, do not. So the curious Christian is likely to ask at least some time during their lives, “Well, when did that possibility first begin? When did people first start knowing the one true God in such a way that they could pray, walk with God, and be responsible to God? When could they first be judged by God because they had sinned?” It is those kinds of questions that the Retelling and *Homo divinus* type of models are interested in addressing. Did all this happen rather slowly, as in the first model, or rather fast, as in the second? Notice that the questions raised are not to do with the origins of religion (however defined), which is another kind of discussion altogether, but with the origins of spiritual life, knowledge of God, the time when humans first became answerable to God for their actions. Notice also that the questions would still be there even if we had in our hands only the New Testament. It is not Genesis that poses the questions, though Genesis is clearly relevant, but rather the Christian theology of creation, sin and redemption. The themes of creation, sin and redemption keep replaying like a musical *répétitif* through the biblical symphony. The early chapters of Genesis is where the *répétitif* is first introduced, and so attracts our attention, but let us not forget the *répétitif* in the rest of the biblical texts.

There is another point where again I rather part company with Wilkinson’s view, because he seems very clear that one type of model must be right (the Retelling Model) and the other wrong (the *Homo divinus* Model). But I just don’t think it’s that clear. I have often remarked that I maintain the first Model on Mondays and Tuesdays, and the second Model the rest of the week. I think it’s a bit like libertarian and compatibilist views on free-will. I know in which direction I lean on that particular question, but at the same time I could give a pretty strong defense of the position I personally don’t believe. And when Wilkinson says he doesn’t like the *Homo divinus* Model because it’s “too complicated”, to an immunologist that’s like a red rag to a bull! All the best immunological models are actually rather complex because what they’re seeking to explain is rather complex and, as mentioned already, the best models are those that provide the best explanation, not necessarily the simplest. I realize that we’re not talking about immunology here, but life is complex.

Furthermore, when Wilkinson speaks of the ‘Retelling Model’ I don’t think we’re really talking about the same thing. Wilkinson wishes to draw attention to the non-historical nature of the early chapters of Genesis and remind us that they recount the story of ‘every man’. We are all God’s earth-keepers who have fallen short of caring for God’s earth properly due to our sin and failure to listen to God’s commands. That’s fine, we’re all agreed on that. But it’s not what the Retelling Model is about (and its label may not be helpful at this point). Instead the Model is seeking to speculate about when and how humans first came to know God. I can easily see how that question might not even interest those whose days are filled mainly with literary pursuits, but it does interest those of us who spend our days reading evolutionary biology, evolutionary psychology, anthropology, cognitive psychology, and so forth. Models that fail to at least take

this literature into consideration don't really count as models in my book.

So the only commitment that I'd recommend is to be committed to the strengths (and weaknesses) of both positions – or you can simply kick the ball into Barthian touch and refuse to ask the questions. However, I do think that most Christians find themselves asking these kinds of questions at some point in their lives, even though they might not think (as I don't think) that the fact that we don't know the answers is that important (and for the foreseeable future we'll never be sure either way, though you never know when unexpected data might come along in the far future, so the golden rule is "never say never").

Since either model can be incorporated equally comfortably within the current understanding of human evolution, preference for one model or the other is likely to be made on theological and aesthetic grounds, and on one's own sense, informed by Scripture, of their plausibility/implausibility, coupled with one's reading and understanding of the various scientific disciplines already mentioned. *Contra* Wilkinson, I do not think discussion of predestination is going to help us much here. Think of the Retelling Model. Here in this context it is imagined that a population of early humans at some unspecified time come to an awareness of God as creator and of (at least some of) their responsibilities toward God, but reject the light that they have received. This is perceived to happen as a process over a long period of time, maybe thousands or even tens of thousands of years. In the case of the *Homo divinus* Model, such 'spiritual enlightenment' is seen as occurring less as a process, more as a saltation, again in a small human community or even in a single couple. In either case, it is clear that God at some stage begins to hold people responsible to Himself. So is that 'predestination'? That hardly seems to be the best description for what is going on here. Throughout the Old Testament God calls people for particular tasks to fulfill His will – Abraham, Moses, Isaiah, Jeremiah, and on the list could go. Is that predestination? I don't think that's the right language. God can call whom He wants. And whatever Model you may hold to regarding the origins of spiritual life, you have to accept that the people coming before that did not experience such spiritual life of whatever kind you envisage. And here is where the biology comes in useful, because it simply won't do to identify your 'spiritual life model' with the first group of *Homo sapiens*, because the emergence of a new hominin species most likely takes tens of thousands of years. So where are you going to draw your before/after line? 'Saltations' might work in spiritual experience, but they certainly don't work in mammalian evolutionary biology.

Comparing the Two Models

Once you understand that these Models represent faith seeking understanding as to the origins of real human spiritual life, with its attendant responsibilities towards God, then you can see why I tend to lean more towards the *Homo divinus* type of model. For it is easy to conceptualize beings that have no moral responsibilities toward God, so cannot be judged. Likewise it is easy to comprehend that beings have been given sufficient knowledge of God and His claims upon their lives such that they are now truly responsible to God. What is less easy to conceptualize is some kind of half-way house between the two, which is what a lengthy process would entail. Either you're responsible for something or you're not. Now the fact that we find the half-way house position difficult to conceptualize doesn't rule it out of court; we might just be limited in our comprehension (and you can always invoke the partial responsibility of young children in the spirit of Irenaeus), but in my book it does make the Retelling Model look less coherent.

Since it happens to be a Friday as I write this, and not a Monday, let me also say that I think the Retelling Model doesn't do a very good job on the biblical notion of sin. Now there is no one single biblical definition of sin, but rather an ensemble of key ideas that together comprise the notion. But certainly

important elements of sin include the idea of broken fellowship with God and alienation from His presence, consequent upon failing to give God the glory and placing oneself in the position that only God can rightfully hold, the creature seeking to become like the creator, a story vividly recounted for us in Genesis 3. This is difficult to conceptualize with the Retelling Model, much easier so with the *Homo divinus* Model. I think it is no accident that as versions of the Retelling Model (although it may not be called that) gain traction, so the tendency is to think of sin more as unfortunate sociobiology, poor humans in thrall to the dictates of their genes, but fortunately ‘saved’ by evolutionary theories of altruism. I have a feeling that Michael Ruse would like Christians to go in that direction because it makes it easier to ‘naturalize’ the language of sin. But I think such accounts are profoundly deficient from a theological perspective. In biblical thought, sin is a theological concept which only makes sense in relation to God and to God’s will. If there is no God then there is certainly no sin, and what you’re left with is human misbehavior, certainly not ‘evil’ except as a socially convenient label.

Whichever model you hold to (if any!), you still have the problem of interpreting how the first reality of sin impacts upon humankind as a whole. This is where I don’t think Wilkinson has really grasped the nettle. In the *Homo divinus* Model I have the first sin impacting upon the world not through inheritance (as in Augustine), but via the theological notion of Federal Headship, involving a lateral rather than a linear fall-out. This is an aspect of the Model that is somewhat arm-waving, I freely admit, but I don’t think the Retelling Model does much better, unless you want to push the Model right back to the emergence of *Homo sapiens* somewhere around 200,000 years ago and locate spiritual life and its subsequent rejection within a community of a few hundred breeding pairs, their innate rejection of God’s purposes then becoming the pattern for all who were to follow. The problem with that scenario is the uncertainty about the linguistic and creative capacities of the first humans, about which we know nothing. Some anthropologists continue to highlight the ‘cultural revolution’ in human tool-use and, possibly, linguistic and other cultural capabilities, that appear to have occurred during human development about 50 million years ago as part of the so-called Upper Paleolithic Revolution. Others prefer to highlight the continuity in cultural development over this period and before. Whatever the outcome of that particular discussion, it does impact to some degree on the Retelling Model. If humanity did not yet have a sufficiently developed theory of mind, together with other cognitive capacities, to be in a position to be responsible to God for their actions until the era of the Upper Paleolithic Revolution, then the Retelling Model has to cope with the fact that there were many different communities of humans within Africa by that stage, and humanity was already well on its way in the Great Trek out of Africa to populate the rest of the world. So at the least Retelling Models have to take such factors into account in their discourse on sin, and, to be frank, at this point in the discussion the notion of the transmission of sin – either lateral or vertical – becomes as arm-waving as in the *Homo divinus* Model. In other words, it is not that the *Homo divinus* Model has a problem on this point which the Retelling Model does not – both Models are in the same boat; both Models have to give account as to how/why/when sin entered the world and in what sense sin ‘spread’ or ‘became relevant’ to the rest of humanity.

It is also worth pointing out that the notion of Federal Headship has not been arbitrarily invoked to help in this context, but has a long and respectable theological lineage stretching back to Calvin and before.²¹ We can also think of it as involving corporate responsibility, which is a difficult concept if you happen to have been raised in the individualistic West. Having lived in the Middle East for 15 years, one becomes acutely aware of how one is deemed to represent one’s perceived leader, however much (as an individualistic westerner) you might like to be perceived as just yourself. I was reminded of this during one of our many crossings over the ‘Green Line’ that separated West from East Beirut during our time spent in the Lebanon in

the early 1980s. The usual bearded militiaman holding the usual Kalashnikov put his head through the car window, checked my papers and then gave a big friendly smile with golden teeth shining: “Breetish!” he said “Margareet Thaatcher!” and then laughed uproariously. In his eyes I was the representative of the whole of Britain, the country headed up by a female Prime Minister, which must be some kind of joke. The point in the present context is that in Middle East culture Federal Headship is an ever present reality, even though you might not be that pleased (as in this case) to be identified with the ‘Head’ in question. Talk about corporate responsibility!

If talk of Federal Headship and corporate responsibility is not really helpful to you on this point (and for people not pre-soaked in a culture with different assumptions, it is a difficult notion), then why don’t we think of a metaphor based on cricket? I have deliberately chosen cricket because its rules are as arcane to most Americans as the rules of American football are to most Brits. Cricket was certainly being played in England by the mid-sixteenth century, although its roots go back much earlier. But for this thought experiment I want you to imagine two scenarios. In scenario one (which happens to be correct, but let that pass) the present rules of cricket develop slowly over a period of centuries. In scenario two, let us imagine that the present rules of cricket were created *de novo* all at once in the sixteenth century. Either way, notions such as “getting runs”, “losing a wicket” or being “run out” only make sense within the particular game labeled “cricket”. The terms have no meaning out of that context. Now imagine that in China at the same time (either for scenario one or two) there were people in Shanghai who had certainly never heard of cricket, but who regularly started playing around by throwing a ball at each other and trying to hit it with a stick, and were even judged to be “out” when the ball was caught. Were they playing “cricket”? Well, not really, because you can only play cricket if you play according to the rules, even though there might be some accidental similarities between the two games.

The point here is that the concept and status of being “caught out” (and therefore no longer being in the game, as a batsman at least) has to begin somewhere, in scenario one as a consequence of slow development, in scenario two rather abruptly. For the first time on planet earth, a new system has come into being that sheds a new light on the meaning of hitting balls with pieces of wood, and then catching the ball, a meaning that didn’t exist before. In analogous manner, the notion of “sin” only begins to be theologically meaningful once a new framework for its meaning has been established, at least somewhere in the world. Certain concepts, with their attendant language, only make sense once the framework is in place.

Now I have deliberately set up the story with two scenarios so that it can fit either the Retelling Model or the *Homo divinus* Model, because both Models have to face up to the same questions. And like most metaphorical stories it can only achieve maybe making one point at best (so please do not start blogging about Adam and Eve playing cricket...), but hopefully it might help on this one point, the idea that certain concepts only have meaning once the framework is in place that provides their meaning.

In terms of biblical theology, I do think that the *Homo divinus* Model does greater justice to New Testament teaching, in particular to the understanding of the first and second Adam as expounded in Romans 5 and 1 Corinthians 15. As already mentioned, it is the aim of Models to take into account the overall corpus of Biblical teaching, and I find it ironic that people think that the *Homo divinus* Model draws its inspiration from the early chapters of Genesis, when the reality is that it depends more on New Testament narratives. I realize that not all commentators think that the parallel between the ‘second and first Adams’ in Romans 5 and 1 Corinthians 15 needs to be taken too stringently, but I have to say that the parallel looks pretty stringent to me.²² This for me is certainly an important factor providing a nudge in the direction of the *Homo divinus* Model.

But do we really know what happened? Absolutely not! It is “tempting to speculate...”, but all we can be quite sure about is that the person who is quite certain they know the answer must definitely be wrong! As I said at the beginning of these comments, for me the discussion itself scores only 1, maybe a maximum of 2, on a scale of 1-10 in the list of items that Christians should be concerned about. And when it comes to writing about it, I’m quite sure that the number of words I’ve written on the topic is far less than 1% of all the words that I’ve written on other topics. But scoring 1 on a scale of 1-10 is not zero, and it’s fun to bat these ideas around with the hope that, one day, people might come up with much better models.

In the interim I do hold to one model more than another, and that not for merely utilitarian reasons, as I’ve already emphasized. And it is really important that Bible-believing Christians realize that there are conceptual resources that enable them to preserve essential Christian doctrines that are important for their faith without the need to worry that some new scientific findings are going to come and snatch them away. And passionate Christian Darwinians can go on happily being passionate Christian Darwinians, just as they have been since 1859.

Notes

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