

Methodological Naturalism Under Attack

Michael Ruse

Department of Philosophy
Florida State University
Tallahassee, FL 32306-1500
USA

E-mail: mruse@mailier.fsu.edu

Abstract

Methodological naturalism is the assumption or working hypothesis that understanding nature (the physical world including humans and their thoughts and actions) can be understood in terms of unguided laws. There is no need to suppose interventions (miracles) from outside. It does not commit one to metaphysical naturalism, the belief that there is nothing other than nature as we can see and observe it (in other words, that atheism is the right theology for the sound thinker). Recently the Intelligent Design movement has been arguing against methodological naturalism, and in this project they have been joined by the Christian philosopher Alvin Plantinga. In this paper I examine Plantinga's arguments and conclude not only that they are not well taken, but that he does no good service to his religion either.

In the last decade, Biblical literalism especially the version known as “Creationism”, concerned with denying evolution and affirming the truth of the early chapters of Genesis, has shown considerable vigor. Moreover, it has gained a remarkable respectability, for whereas previously the supporters of Creationism – although often qualified in various areas of science or the humanities – had little standing in the academic community, now we find enthusiasts among people of deservedly renowned prestige from the very best institutions. With this rise in status has come a new way of approaching the problem. A new way which I suspect is part cause, and part effect of the rise. Twenty years ago, the Creationists' chief appeal was to their understanding of the facts of science: the fossil record, homologies, and so forth, but now philosophy has come to the fore.

It is true that this is not an entirely new phenomenon. Indeed, in the celebrated Arkansas Creation Trial of 1981, when a federal judge ruled that Creationism could not be taught in the biology classes in publically funded schools in the United States, I myself – a professional historian and philosopher of science – was an expert witness for the plaintiffs. After the event, I felt thus encouraged to put together a collection on the philosophical issues in the dispute – *But Is It Science? The Philosophical Issue in the Creation/Evolution Controversy* (1988) – showing among other things that philosophical questions were being raised even before Charles Darwin published his *On the Origin of Species* in 1859. Yet, truly, philosophy was but a side issue. Now, however, the new infusion of Creationists have taken up the philosophical issues in a major way and in many respects it is these that are at the front of the dispute.

In particular, perhaps realising that a straight frontal scientific approach will not succeed – although, as you will learn, ultimately I am not sure that the science is now quite as absent as everyone pretends – the new Creationists are making much of the claim that *the* essential difference between evolutionists on the one hand and Creationists or “theists” (as they prefer to call themselves) on the other is one of conflicting philosophies (Johnson 1991, 1995). Evolutionists, supposedly, are committed to the secular atheistic materialistic philosophy of *naturalism* and from this evolution follows as a consequence. Creationists, on the other hand, are committed to some form of spiritual or religious philosophy of *theism* and from this follows their commitment to a Genesis-based world perspective. (To be fair, most of the new Creationists seem willing to forsake a very young earth. But they stand rock firm on such things as the instantaneous miraculous creation of life from non-life, to a denial of evolution, and particularly to a special and privileged place for the arrival and status of human life. Unlike earlier Creationists, one hears little about the Flood. This may be because the new Creationists tend not to be Dispensationalists and hence feel no need for an earlier catastrophe balancing the predicted Armageddon. See Numbers 1992 for more on the significance of the Flood in traditional literalist thinking.)

Evolutionists do not speak with a unified voice, but my impression is that generally, in important respects, they are inclined to agree with their opponents: they do think that naturalism, somehow defined, is indeed an important underpinning to their position. However, where they disagree with the Creationists is in the implication that this means that evolutionism is simply a manifestation of an atheistic world philosophy. At least, those concerned with the fight between evolution and Creationism are unwilling to make this concession. There are evolutionists – notably Richard Dawkins (1995, 1996), Daniel Dennett (1995) and William Provine (1989) – who are materialists, atheists, naturalists and evolutionists, and who see everything as a united package deal. But these men do not speak for all evolutionists or all naturalists. Those of us – for I am one – who are unwilling to be pinned into the corner of atheistic evolutionism point historically to the fact that there have been distinguished evolutionists who were practicing Christians. In this century, notably the two leading evolutionists Sir Ronald Fisher (1950) in England and Theodosius Dobzhansky (1967) in America were both absolutely and completely committed to the idea of Jesus as their Savior. Philosophically, those of us who would separate atheism and evolutionism suggest that simply using a catch-all term “naturalism” conceals subtleties in peoples’ approaches. Once these subtleties are uncovered, the clash between evolution and Creationism is no longer seen to be the simple black and white philosophical matter that the Creationists claim.

Picking up on this last point, evolutionists who want to divorce their science from supposedly atheistic implications invite one to draw a distinction between two forms of naturalism. On the one hand, one has what one might call “metaphysical naturalism”: this indeed is a materialistic, atheistic view, for it argues that the world is as we see it and that there is nothing more. On the other hand, one has a notion or a practice that can properly be called “methodological naturalism”: although this is the working philosophy of the scientist, it is in no sense atheistic as such. The methodological naturalist is the person who assumes that the world runs according to unbroken law; that humans can understand the world in terms of this law; and that science involves just such understanding without any reference to extra or supernatural forces like God. Whether there are such forces or beings is another matter entirely, and simply not ad-

dressed by methodological naturalism. Hence, although indeed evolution as we understand it is a natural consequence of methodological naturalism, given the facts of the world as they can be discovered, in no sense is the methodological naturalist thereby committed to the denial of God's existence. It is simply that the methodological naturalist insists that, inasmuch as one is doing science, one avoid all theological or other religious references. In particular, one denies God a role in creation.

This is not to say that God did not have a role in creation. Simply that, *qua* science, that is *qua* an enterprise formed through the practice of methodological naturalism, there is no place for talk of God. Just as, for instance, if one were to go to the doctor one would not expect any advice on political matters, so if one goes to a scientist one does not expect any advice on or reference to theological matters. The physician may indeed have very strong political views, which she may or may not share. But politics are irrelevant to medicine. Similarly, the scientist may or may not have very strong theological views, which one may or may not share. But inasmuch as one is going to the scientist for science, theology can be and must be ruled out as irrelevant.

Naturally enough the new Creationists have responded to this line of argumentation. The way taken by the well-known critic of Darwinism, Phillip Johnson (1995) – an academic lawyer on the faculty at Berkeley – denies that one can thus separate methodological and metaphysical naturalism; at least, Johnson thinks that any such separation is bound to be unstable. In his opinion, methodological naturalism – however well-intentionally formulated – inevitably collapses within a very short time into metaphysical naturalism. Hence, even though one may claim that evolutionism has no materialistic, atheistic, philosophical underpinnings, in fact it is impossible to keep such underpinnings out of the picture.

Frankly, intellectually, I am not sure about the depth of this response. Certainly, those of us with philosophical training and inclinations ask for more. And this we do now have, thanks particularly to America's most distinguished philosopher of religion, Alvin Plantinga (1991a, b, c, 1993, 1994, 1995). Although serving on the Notre Dame faculty, Plantinga is a reformed Christian, a Calvinist who believes strongly that evolutionism is resting on shaky philosophical foundations. The appeal to methodological naturalism fails, and Plantinga has therefore taken it upon himself to expose its inadequacy. It is this attack which is the focus of discussion here: a focus given a personal savor by the fact that I am one of the chief objects of Plantinga's attack.

1. Methodological naturalism as incoherent

Plantinga has a number of critiques of methodological naturalism, one of the first of which – directed directly against me – is of the very coherence of the notion of methodological naturalism. I have characterised the notion – as I did above, as indeed I did in the Arkansas Creation Trial (and as was picked up by the judge in that trial, and used as a support of his judgment against Creationism)— as an approach to the empirical world that demands understanding in terms of unbroken law (Ruse 1982, 1984, 1996, 1988, 1995). That is to say, understanding in terms of regularities, which in some way or another we feel are more than mere contingencies, but rather part of the necessary succession of the empirical world. Neither I, nor anyone else, has ever insisted in our characterisation of methodological naturalism that the necessity of law be interpreted in and only in some particular way. I myself have endorsed a neo-Humean position, seeing the necessity of laws as a natural regularity on which one imposes an evolutionarily derived psychological construction. But were someone to see the neces-

sity in some other (non-god-invoking) way, I would not deny them the status of methodological naturalist.

Plantinga objects to this characterisation on a number of grounds, one of which involves repeatability. He writes as follows:

But take repeatability, and consider this passage by Andrei Linde: speaking of the Big Bang, he says, "One might think it very difficult to extract useful and reliable information from the unique experiment carried out about 10 years ago. According to Linde, the Big Bang is unique and therefore, presumably, unrepeatable—at any rate it *might* turnout to be unrepeatable. If so, would we be obliged to conclude that contemporary cosmological inquiries into the nature of the Big Bang and into the early development of the universe are not really part of science? (Plantinga 1997, 146)

As a matter of fact, Plantinga here is raising an objection which has often been raised by critics of the claim that scientific understanding involves reference to law. His point, as was theirs, is that there are many unique events that science must surely try to cover and understand, but that given the uniqueness of these events, in some sense this precludes lawful understanding. But, as many critics of the critics have countered, there surely has to be something wrong with this argument. Take for instance the demise of the dinosaurs at the end of the Cretaceous. This was in itself a unique phenomenon and unrepeatable; but, uniqueness notwithstanding, the demise was made up of many factors which can individually be brought beneath lawful understanding. Today, it seems most probable that an asteroid or a comet or some such thing hit the earth. This was no unique phenomenon, nor was the hitting of the earth by the asteroid or comet such that the normal laws of nature – that is to say Galileo's laws of motion – could not be applied. Then, it is believed that there was a huge dust cloud raised and the earth became dark. Again, even if this was a unique phenomenon – and the dust cloud in the last century after the explosion of Krakatau makes one doubt this – one can still apply laws. One has all sorts of experience of dusk causing darkness; then of darkness cutting off photosynthesis of plants and of the dying of plants; and then of the consequent starvation of animals which are part of the ecological food chain depending on plants. In other words, although the dinosaurs existed only once and will never reappear – so their demise was certainly something unique – the various components involved in the extinction of the dinosaurs are such that they can be brought beneath regularity. In principle, we have nothing different from any frequently repeatable phenomenon, like the death of annual plants at the end of every growing season. Hence, here, Plantinga does not offer us reason to give up on methodological naturalism.

Nor does Plantinga's second objection carry a great deal of weight. He argues that the whole notion of scientific "law" is itself in some sense untenable. He writes: "Bas van Fraassen, for example, has given an extended and formidable argument for the conclusion that there are no natural laws. There are *regularities*, of course, but a regularity is not yet a law; a law is what is supposed to *explain* and *ground* a regularity. Furthermore, a law is supposed to hold with some kind of *necessity*, typically thought to be less stringent than broadly logical necessity, but necessity nonetheless". Plantinga goes on to suggest that maybe the whole notion of law is just an unfortunate legacy of the Enlightenment and that perhaps it can be given up.

Now, whilst I am the last person to belittle the formidable philosophical powers of Bas van Fraassen – as eminent in the field of the philosophy of quantum mechanics as Plantinga is in the field of the philosophy of religion – what is being extrapolated here is far stronger than van Fraassen or anyone else would want (should want) to claim. Certainly there are questions about how one might interpret the necessity of laws: I myself have allowed that already. But neither van Fraassen, nor anyone else is going to deny that there are certain sorts of regularities of some kind and that these are presupposed in the activity of science. At least, if this denial is at the heart of van Fraassen's thinking, then I can only say that the response of the average scientist will be: “News to me!”

Nor is it particularly helpful to try to belittle the appeal to law by connecting it with the Enlightenment, or – as Plantinga does specifically – to Enlightenment deism. Perhaps the notion of scientific law did indeed originate in such deism (a conclusion which would have shocked deeply Christian philosophers and scientists of the past two hundred years), but here surely the fallacy of “psychologism” – the confusion of the context of discovery with the context of justification – has some bite. The most venerable of scientific concepts – for instance, work, force, and cause – have theological backgrounds. Indeed, if the eminent historian of physics Richard S. Westfall (1982) is correct, Newtonian gravitation has its roots in alchemic speculations. But today, one can use these notions without in any sense having to confess that they are still theological or alchemical. In the same way, even if indeed it is the case that law does have its roots in Enlightenment deism, there is absolutely no reason why we cannot ourselves today use in an entirely secular way: the way of the methodological naturalist. Here again, Plantinga's objections fall to the ground.

A third objection that Plantinga brings to my characterisation of methodological naturalism is that, at some level, it is unacceptably fuzzy or loose: to such a degree that it really is unworkable.

First, energy has been expended, for at least several centuries, on the “demarcation problem”: the problem of giving necessary and sufficient conditions for distinguishing science from other human activities. This effort has apparently failed; but if in fact there *were* a definition of the sort Ruse is appealing to, then presumably there would be available a set of necessary and sufficient conditions for something as being science. Ruse does not address the many and (I think) successful arguments for the conclusion that there is no such set of necessary and sufficient conditions, let alone such a definition of the term “science”; he simply declares that by definition science has the properties he mentions. (145)

Again, I fail to see that this is an effective counter. It is certainly the case that there are subjects that are on the borderline between science and non-science, judged from the perspective of methodological naturalism. Indeed, I myself have spent the last ten years on a massive study of the history of evolutionary theory, through the two and a half centuries of its life. A major theme of my now-published labours, *Monad to Man: The Concept of Progress in Evolutionary Biology* (1996), is that evolutionism grew up from being a pseudoscience, through being a popular science, to being what I term a mature or “professional” science. At various stages along this process, one sees a transformation as evolution does become more subject to the strict dictates of methodological naturalism. But, of course, part of my thesis is that evolutionism itself has

evolved, and there are times when really it sits or rather sat on the fence between something which really would satisfy the criteria of good science, and something which would not.

In other words, what I argue is that there were times when one really could not bring forward absolutely tight conditions showing that evolution was in or out of the category of good science or even genuine science at all. But this does not mean that the notion of good science – and evolutionism being in or out of this notion – it is thereby rendered otiose or impossible to apply. The point is there were borderline cases here, as elsewhere in life: the fact that there is no clean demarcation between science and non-science is no argument against the very idea of methodological naturalism.

(There is much more that could be said on this particular issue. Let me just simply say that Plantinga is simply mistaken when he says: “Ruse does not address the many and (I think) successful arguments for the conclusion that there is no such set of necessary and sufficient conditions” (145) for methodological naturalism. In fact, in the collection I have already mentioned, *But Is It Science? The Philosophical Question in the Creation/Evolution Controversy*, from which Plantinga is himself drawing my discussion, I do offer arguments. I may not be successful in my counter-reply, but I certainly take them up and would refer the interested reader to these.)

2. Augustinian science

Let us move on to the second round of objections that Plantinga has to methodological naturalism. Plantinga objects to my very attempt to characterize science as something which is marked by the methodological naturalistic approach. He writes:

Ruse suggests that methodological naturalism is true by definition of the term “science” one supposes; Ruse apparently holds there is a correct definition of “science”, such that from the definition it follows that science deals only with what is natural, repeatable, and governed by law. (Note that this claim does not bear on the suggestions that a Christian scientist can propose hypotheses involving such “religious” doctrines as, say, original sin, and can evaluate the epistemic probability of a scientific hypothesis relative to background belief that includes Christian belief.) Ruse's claim apparently rules out hypotheses that include references to God: God is a supernatural being, hypotheses referring to him therefore deal with something besides the natural; hence hypotheses cannot be part of science. (145)

Then he faults me here, saying that I simply have no right to invoke a mere definition to achieve my end. He writes:

The... puzzling thing about Ruse's claim: it is hard to see how anything like a reasonably serious dispute about what is and is not science could be settled just by appealing to a *definition*. One thinks this would work only if the original query were really a *verbal* question a question like, “*Is the English word science properly applicable to a hypothesis that makes reference to God?*” But that was not the question: the question is instead, “*Could a hypothesis that makes reference to God be part of science?*” That question cannot be answered just by citing a definition. (146)

It is true that there is something puzzling here, but not necessarily my argument. It would indeed be very odd were I simply trying to characterise “science” as something that, by definition, employs methodological naturalism: and then simply leaving things

like that. My victory would be altogether too easy to achieve. Apart from anything else, I would simply be ruling religion out of science by fiat. But, this is not what I am doing now or have done in the past. I am certainly not trying to offer an analytic definition of what one means by “science”, just as for instance one might offer an analytic definition of what one means by (to use the philosopher's old favourite) “grue” meaning “green before time *t* and blue after time *t*.” This is a definition which is analytic or stipulative. What I am trying to do is to offer a lexical definition: that is to say, I am trying to characterise the use of the term “science.” And my suggestion is simply that what we mean by the word “science” in general usage is something that does not make reference to God and so forth, but that is marked by methodological naturalism.

I am not saying anything at all about whether or not God exists, or has any role in the world or anything like that. I am simply saying that science does not allow for this possibility, judged *qua* science. I think I am on pretty strong grounds and I am comforted to find that my opinion is shared by Ernan McMullin, who is not only an eminent philosopher of science, but a Roman Catholic Priest also. One cannot accuse him of being unsympathetic to religion! In the course of a discussion (incidentally directed against Plantinga), McMullin concurs completely with my understanding of the meaning of “science”. Of Plantinga's claim that one should not restrict “science” simply to that which is governed by methodological naturalism, and that one should allow a more extended “science” which perhaps tries to understand not only in terms of law, but also in terms of God's intervention – what Plantinga at that point called “theistic science” – McMullin writes as follows:

I do not think ... that theistic science should be described *as* science. It lacks the universality of science, as that term has been understood in the later Western tradition. It also lacks the sort of warrant that has gradually come to characterize a properly ‘scientific’ knowledge of nature, one that favours systematic observation, generalisation, and the testing of explanatory hypotheses. Theistic science appeals to a specifically Christian belief, one that lays no claim to assent from a Hindu or an agnostic. It requires faith, and faith (we are told) is a gift, a grace, from God. To use the term ‘science’ in this context seems dangerously misleading; it encourages expectations that cannot be fulfilled. (McMullin 1991, reprinted in Hull and Ruse 1998)

McMullin's point is precisely mine, namely that we should not use the word “science” for activities that go beyond the bounds of methodological naturalism, however worthy such activities and their products may be.

But here now we come to what I think is the important part of Plantinga's position. He is certainly too good a philosopher to think that everything is just a matter of definition. I suspect that he does not really think that even I think it is all just a question of definition. Rather, Plantinga believes that whether or not conventional science (judged by adherence to methodological naturalism) is satisfactory, you should open up the inquiry to something broader. We ought to open it up to an understanding of the world that allows, not only working through law, but also the intervention of God in various ways: ways that, in conventional language, we would characterise as “miraculous”. This is Plantinga's “theistic science”; although now he prefers the term “Augustinian science”, because he thinks that this is something that would be acceptable to Saint Augustine. (I am not sure that he is right here, but one quibble about the use of terms per discussion is all I can handle.)

One's initial response is that, if Plantinga wants to extend his understanding of the notion of science beyond what we can call "science" without qualification to some kind of "science" that includes reference to miracles, that which he calls "Augustinian science", then he is at perfect liberty to do so. Indeed who can or should quarrel with what he is doing? One may not feel the extension is a particularly useful one, but that is another matter entirely. The point is that science without qualification is left untouched. But, of course, there is more at issue here: the significant fact is that Plantinga wants to go on using the term "science", whether he puts in the qualification or not. He does not want to speak simply of Augustinian knowledge or some such thing, but of Augustinian *science*.

As McMullin points out, this is a significant move, because clearly at some level Plantinga wants to give his extended science the status or authenticity of science without qualification. He wants to suggest that, in some way, his science is as good (in fact he would want to say probably much better) as science without qualification. His science therefore ought to be eligible for such things as grants, and university support, not to mention be permitted to be put in classrooms during science courses. (Plantinga does not draw out all of these consequences explicitly, although he does make mention of grants and so forth. The line of argument is there, nevertheless, and even if he were not to pick it up personally, one can see how it could be used as a tool for fighting on the evolution/creation front.)

The question now is whether this extended enterprise – what Plantinga calls "Augustinian science" has any right to the name of "science", in some sense or another. Here, Plantinga goes beyond definition and offers an argument. He suggests that the reason why people (including Christians) are uncomfortable with extending the notion of "science" beyond that which is discovered using methodological naturalism, to that which may involve God's direct action in His Creation, is because it seems like a move of desperation. In particular, it seems like an invocation of so-called "God-of-the-gaps" theology. One supposes that the laws of nature go along as best they can, but that every now and then the laws break down, and so (*faute de mieux*) one has to plug in God. Supposedly, this strategy goes back to Newton, who thought that his laws of motion would not do everything that was needed to keep the planets running as they undoubtedly do, and so invoked God's help every now and then to give things a bit of a shove or an adjustment. Clearly, there is something rather desperate about this tactic: both scientifically and theologically. God apparently could not do the job properly through laws, so has to keep tinkering with His Creation. This is no happy assumption for either scientist or theologian.

As it happens, Plantinga agrees with those who would deny the extension of the name of "science" on the grounds of a God-of-the-gaps type of argument. However, he argues that, as a Christian, one has no need for such an argument at all. I quote him again:

God-of-the-gaps theology is worlds apart from serious Christian theism. This is evident at (at least) the following points. First and most important, according to serious theism, God is constantly, immediately, intimately, and directly active in his creation: he constantly upholds it in existence and providentially governs it. He is immediately and directly active in everything from the Big Bang to the sparrow's fall. Literally nothing happens without his upholding hand. Second, natural laws are not in any way independent of God, and are perhaps best thought of as regularities in the ways in which he treats the stuff he has made,

or perhaps as counterfactuals of divine freedom. (Hence there is nothing in the least untoward in the thought that on some occasions God might do something in a way different from his usual way e.g., raise someone from the dead or change water into wine.) Indeed, the whole *interventionist* terminology speaking of God as *intervening* in nature, or *intruding* into it, or *interfering* with it, or *violating* natural law all this goes with God-of-the-gaps theology, not with serious theism. According to the latter, God is already and always intimately acting in nature, which depends from moment to moment for its existence upon immediate divine activity; there is not and could not be any such thing as his “intervening” in nature. (Plantinga 1997, 149)

Plantinga's position is that, properly understood theologically, God's interventions and the running of law are a seamless whole of the same logical type. Therefore, from a Christian theistic point of view, there is absolutely no reason to deny the possibility of miraculous interventions.

Indeed, Plantinga's position rather is that, as a Christian, one ought to expect God to be intervening: not out of a failure to do the job properly in the first place, but because God is always sustaining His Creation. Elsewhere, Plantinga has added to this argument by pointing out that Christians believe miracles are ongoing all of the time. For instance, Catholics believe that in the mass there is the miraculous transubstantiation of the bread and wine into the body and blood of Christ. Similar miracles occur when human souls are created individually, whether you believe this occurs when a person is conceived or when a person is born. So, since miracles are common phenomena, there is no real reason to deny that they may be occurring continuously in other cases, for instance with the origination of new species. (See Plantinga 1991a, b, reprinted in Hull and Ruse 1998.)

Let me make three points in connection with Plantinga's argument. First, not all Christians believe that God's constant sustaining of His creation means that one should expect God to be intervening with miracles on a regular basis. McMullin points out that there is a whole tradition, going back at least to Augustine, that looks upon the world as developing from potentials set by God. Not that Augustine was a biological evolutionist, or anything like that. But certainly his position was that God prefers to work through some sort of developmental, probably law-bound process, rather than through breaking off every now and then from His sustaining laws and doing things by hand as it were. Hence, argues McMullin, there is little reason to think that there is some sort of presumption, from a Christian perspective, that God would combine law with miracle. (Note how important this claim is for Plantinga. If he can establish the case that law and miracle are of the same logical type, then his hoped-for extension of science goes through much more readily than otherwise. Already in “science” without qualification, one has God's action of one kind. Simply extending that to “Augustinian science” is not demanding actions of a logically different kind. One has less a qualitative shift, as it were, and more a quantitative shift.)

Casting the discussion specifically in terms of our thinking about the origin of new organisms, with respect to the Genesis story, McMullin writes as follows:

The issue, be it noted, is not whether God *could* have intervened in the natural order; it is presumably within the power of the Being who holds the universe at every moment in existence to shape that existence freely. The issue, is rather, whether it is antecedently *likely* that God would do so, and more specifically

whether such intervention would have taken the form of special creation of ancestral living kinds. Attaching a degree of *likelihood* to this requires a reason; despite the avowed intention not to call on Genesis, there might appear to be some sort of residual linkage here. In the absence of the Genesis narrative, would it appear likely that the God of the salvation story would also act in a special way to bring the ancestral living kinds into existence? It hardly seems to be the case. (McMullin 1991, in Hull and Ruse 1998, 712)

McMullin's point is that Plantinga is only arguing that miracles are, at some level, as likely as laws because he has in the first place made a fairly literalistic reading of the Bible. But this now raises a second objection: it is by no means obvious to one working from a Christian position that one must agree that God works almost indifferently through law and through miracle. First, it is only if one has already made *a priori* a fairly literalistic reading of the Bible that one would think that God's miracles are going to be as frequent as Plantinga rather implies. If one interprets, let us say the Abraham and Isaac story, not so much as a literal case of rather difficult relations between father and son, but of symbolic in some sense of Israel's faith towards the law, then the whole question of frequent miracles by God becomes rather more problematic. Second, one can (as McMullin and others point out) make a distinction between the order of nature and the order of grace. That is, between what is known as "cosmic history" and what is known as "salvation history". To quote McMullin again:

The train of events linking Abraham to Christ is not to be considered an analogue for God's relationship to creation generally. The Incarnation and what led up to it were unique in their manifestation of God's creative power and a loving concern for the created universe. To overcome the consequences of human freedom, a different sort of action on God's part was required, a transformative action culminating in the promise of resurrection of the children of God, something that (despite the immortality claims of the Greek philosophers) lies altogether outside the bounds of nature.

The story of salvation is a story about men and women, about the burden and the promise of being human. It is about free beings who sinned and who therefore *needed* God's intervention. Dealing with the human predicament 'naturally', so to speak, would not have been sufficient on God's part. But no such argument can be used with regard to the origins of the first living cells or of plants and animals. The biblical account of God's dealings with humankind provides no warrant whatever for supposing that God would have brought the ancestors of the various kinds of plants and animals to be outside the ordinary order of nature. (725-6)

One has no expectations from God's use of miracle in a certain special set of events that God will be using miracles as frequently or indifferently as Plantinga rather implies.

Third, surely there is an intellectual slight of hand in Plantinga's highlighting of the miracles that supposedly are occurring frequently today. Plantinga knows as well as anybody else, that transubstantiation is not supposed at all to be a miracle that in any way violates, or goes as an alternative, to the ordinary course of nature. If one cuts up the bread and wine after the mass, one is not going to see bleeding flesh oozing blood. The change is in the essence of the substance, rather than in the accidental properties. The same is true of the soul, whether or not one believes this to be an entirely coherent notion or indeed just a throwback to preChristian Platonic ideas. One is not going to

find souls as material phenomena. Certainly, the ongoing creation or insertion of souls, if indeed this be true, is not something which goes as an alternative to law – in the sense of either one or the other but not both. Hence, here again, one has no reason for accepting Plantinga's extension of the notion of “science”.

All in all, therefore, one can say that Plantinga has not made his case about the likelihood of miracles occurring as often as laws for the Christian theist.

3. Science stopping

A third and final argument offered by Plantinga strikes at what I suspect many defenders of methodological naturalism would take to be its strongest point: the pragmatic argument that nothing succeeds like success. Let us grant that methodological naturalism (so says its supporter) is an approach or an attitude, rather than something which is necessarily true *a priori*. Why then should one endorse it? Why in particular should one insist always on going with methodological naturalism, even when (as is surely the case) there are unsolved problems? Why, to take a particularly difficult problem, should one assume that there must be a naturalistic account for life's origins? Everything we know about life is incredibly complex. However it started, there must have been a number of intricate moves of a kind which one would not normally expect to find happening naturally. Why then persist in believing in the natural origins of life, simply because this is demanded from the methodologically naturalistic position, when *prima facie* such a natural origin seems so very non-obvious? Why in particular should one refuse to rule out miracles and an intervention by God? That is to say, why should we assume that methodological naturalism is so very successful, so very important that we must go with it, even in the face of challenge?

The answer that the methodological naturalist gives here is that, in the past, the methodologically naturalistic approach yielded fantastic dividends. As Thomas Kuhn (1962) says about paradigms, because scientists have persisted in taking a methodologically naturalistic approach, problems which hitherto seemed insoluble have eventually given away to solutions. Take an example from biology. For many years, indeed ever since Darwin, there was much debate about how insect sociality could have evolved. How is it that the worker ants, for instance, devote their whole lives to the nest, despite the fact that they do not reproduce themselves? People had no answer but did not give up. They persisted, and finally in the early 1960s the then graduate student, William Hamilton (1964a, b), provided an explanation (invoking what came to be known as “kin selection”) showing how one can explain insect sociality in terms of individual genetic selfishness. (Briefly, the answer is that in the hymenoptera – the bees, the ants, and the wasps – females are more closely related to sisters than they are to daughters. Thus, they improve their genetic success by raising fertile sisters, rather than by raising fertile daughters.) The methodological naturalist says that this is a moral for us all: although there are indeed many unsolved problems, notably the origin of life, past experience suggests that these problems will be solved eventually by a methodologically naturalistic approach. Therefore, one should persist, no matter how improbable the finding of a solution seems today.

Plantinga challenges this. Whilst he agrees that giving up on methodological naturalism is in some sense what he calls a “science stopper” – something which brings methodologically naturalistic science to an end – as Christians, we have no reason to think that such science stopping events do not happen.

The claim that God has directly created life, for example may be a science stopper; it does not follow that God *did not* directly create life. Obviously we have no guarantee that God has done everything by way of employing secondary causes, or in such a way as to encourage further scientific inquiry, or for our convenience as scientists, or for the benefit of the National Science Foundation. Clearly we cannot sensibly insist in advance that whatever we are confronted with is to be explained in terms of something *else* God did; he must have done *some* things directly. It would be worth knowing, if possible, which things he *did* do directly; to know this would be an important part of a serious and profound knowledge of the universe. The fact that such claims are science stoppers means that as a general rule they will not be helpful; it does not mean that they are never true, and it does not mean that they can never be part of a proper scientific theory. (And of course it does not even bear on the other ways in which Christianity or Christian theism can be relevant to science.) It is a giant and unwarranted step from the recognition that claims of direct divine activity are science stoppers to the insistence that science must pretend that the created universe is just there, refusing to recognize that it is indeed *created* (Plantinga 1997, 152-53).

Let me make two points in response to this argument. First, Plantinga is making his case from an already-established theistic position. Already, he accepts that there are going to be exceptions to laws, or at least that there have been such exceptions. Hence, it is at least possible that there will be such exceptions in the future. If he did not make this assumption, at best one would have ignorance. In which case, the methodological naturalist will say that one simply does not know whether methodological naturalism will work all the way. It is just that as a matter of general policy one has no choice but to go with it – in the light of the fact that, in the past, employing methodological naturalism has been a very successful strategy. To argue otherwise, to argue as does Plantinga, is to assume the very theism whose necessity is at issue in the first place.

Second, Plantinga altogether underestimates the power and success of methodological naturalism. He can be so slighting of its potential only because he does not take modern science seriously. This is a strong claim to make and I am sure that Plantinga would challenge it vigorously. It is true, nevertheless. In his writings over the past decade, Plantinga has frequently made reference to evolutionary theory and to its supposed inadequacies. The ways in which he has done this show unambiguously that Plantinga's mind has been made up before he starts. Certainly the kinds of arguments he brings against science, particularly against the science of animal and plant origins, are the kinds that, were similar ones brought in a philosophical context, he himself would agree that the proponent should not be taken seriously. Or at least that the person putting forward these arguments has already made a prior commitment to their falsity.

To make this point, let me refer you to an extended discussion of evolutionary theory offered by Plantinga at the beginning of the previous decade. About some parts of the evolutionist's thesis, broadly construed, Plantinga is so far from offering argument that he is just contemptuously dismissive. For instance, about the claim that life may have originated from non-life, Plantinga has only the following to say:

Finally, there is the ... the Naturalistic Origins Thesis, the claim that life arose by naturalistic means. This seems to me to be for the most part mere arrogant

bluster; given our present state of knowledge, I believe it is vastly less probable, on our present evidence, than is its denial. Darwin thought this claim very chancy; discoveries since Darwin, and in particular recent discoveries in molecular biology, make it much less likely than it was in Darwin's day. I can't summarize the evidence and the difficulties here. (Plantinga 1991, in Hull and Ruse 1998:685)

I simply do not see that this is an argument at all. Suppose I recast it in philosophical terms. Suppose, following Plantinga, I said:

Finally there is the ontological argument, the claim that the definition of God yields his existence. This seems to me to be for the most part mere arrogant bluster. Given our present state of knowledge I believe it is vastly less probable, on our present evidence, than is its denial. Aquinas thought this claim very chancy, discoveries since Aquinas, and in particular recent discoveries in modal logic, make it much less likely than it was in Aquinas's day. I cannot summarize the evidence and the difficulties here.

I expect Plantinga would at least smile, even a scornful smile, at this argument. A blush would be more appropriate. He is offering no more himself.

Plantinga is not much better when he looks at the bulk of evolutionary theorising. As he himself seems to be aware, the real claim for the fact of evolution (as opposed to the mechanisms of evolution) is the consilience that Darwin offers: the argument that many different areas of biology: embryology, animal instinct, biogeography, paleontology, systematics all point to the fact of evolution, and conversely are given meaning through this fact. But, aware or not of this consilience, Plantinga makes absolutely nothing of it whatsoever.

The arguments from vestigial organs, geographical distribution, and embryology are suggestive, but of course nowhere near conclusive. As for the similarity in biochemistry of all life, this is reasonably probable on the hypothesis of special creation, hence not much by way of evidence against it, hence not much by way of evidence for evolution. (689)

Again, I convert this into its philosophical equivalent.

The arguments from miracles, causes, and ontology are suggestive, but of course nowhere near conclusive. As for the similarity in biochemistry of all life, this is reasonably probable on the hypothesis of evolution, hence not much by way of evidence against it, hence not much by way of evidence for God.

Once again, one assumes that Plantinga would shudder at this kind of argumentation. Why therefore should one not feel the same way about his treatment of the case for evolution?

I could continue. For instance, there is Plantinga's naive and somewhat arrogant attitude towards the fossil record. Deliberately, he turns his back on some of the strongest pieces of evidence, as given through the fossil record, in favour of evolution. One thinks of the detailed connections now discovered linking the marine mammals to land precursors. Or the evolution of humankind. A hundred years ago, no one had very much knowledge of human evolution: in particular, as to whether brains got big before humans got up on their hind legs, or conversely. Now, however, thanks to fabulous finds in East Africa – most particularly, Lucy (*Australopithecus afarensis*) – we know that human beings started walking before their brains grew up in size. And from

Australopithecus afarensis, some 3 or 4 million years ago, we have a very detailed record: from *Homo habilis* to *Homo erectus*, and from *Homo erectus* to our own species, *Homo sapiens* (Johanson and Edey 1981; Ruse 1982). To say that the fossil record is not adequate to support evolution is to show ignorance – or more.

There are times when I do think more than ignorance is involved. Consider Plantinga on the question of the Cambrian explosion; that huge increase in life just over half a billion years ago.

There is the Cambrian explosion. The fossil record displays unicellular life going all the way back, so they tell us, to 3 or 3.5 billion years ago—only a billion years or so after the formation of the Earth itself, and much less than a billion years after the Earth cooled sufficiently to permit life. There is no fossil record of skeletal animals until about 530 million years ago, 2.5 or 3 billion years after the appearance of uni-cellular life. Then there is a veritable explosion of invertebrate life, a riot of shapes and anatomical designs, with ancestors of the major contemporary forms and all the marine invertebrate phyla represented, together with a lot of forms wholly alien in the contemporary context. None of this was known in Darwin's day, and would surely have given him pause. And now in a recent issue of *Science* we learn that the time during which this explosion took place was much shorter than previously thought; it all happened during a period of no more than 5 or 10 million years ..., a period that seems much too short to accommodate such furious evolutionary creativity, at least with respect to any known mechanisms. On balance, it is likely that if Darwin knew what we now know about the complexity of such organs as the mammalian eye and the human brain, the enormous intricacy revealed by biochemistry and molecular biology (including the astonishing complexity of the simplest forms of life), the Cambrian explosion, the lack of closure in the fossil record, and so on, he would have been neither a Darwinian nor a devotee of [The Common Ancestry Thesis]. (753)

In fact Darwin did know about the Cambrian explosion and he did as a matter of fact worry about it. (It was known in his day as the bottom of the Silurian system.) Today however, we have a much more detailed knowledge of the explosion and possible suggestions have been put forward to account for it. Most notably the American paleontologist, J. John Sepkoski Jr., has shown through computer simulation that the Cambrian explosion is just the kind of exponential growth that we would expect given the rates of speciation that are known to have been occurring at that time. Sepkoski has been able to map exactly the explosion itself against his computer models and has reduced the whole problem to one of readily understandable and acceptable mathematics. It may of course be the case that Sepkoski is wrong, or that his position will need modifying, but this is as it may be. The point is that he and other paleontologists have been putting forward answers to explain the explosion. The answers which are highly plausible, given modern paleontology and modern mathematics. (See Sepkoski 1978, 1979, 1984; Ruse 1999.)

Plantinga has no knowledge whatsoever of this and ploughs on regardless. Once again, using the philosophical analogy, how would he feel if one were simply to say that the ontological argument is as worrisome as it was back at the time of Aquinas, because everybody knows that existence is not a predicate. And if this claim were made in total ignorance of the kinds of arguments that, for the past three decades,

Plantinga and other sophisticated philosophers of religion have been putting forward in favour of the ontological and related arguments. It is not a question of whether or not Plantinga and others are right in their thinking about the ontological argument and its fellows. It is rather that competent scholarship requires that one take note of this, and this holds even if one is working outside one's own field. One must not simply dismiss carefully thought-out positions, with a sneer, from a position of ignorance.

I am sorry if I sound indignant about all of this, but if one is going to argue about important issues – and Plantinga and I are certainly united in thinking that these are important issues – then one ought to take the opposition seriously. This Plantinga does not do, and it is why I am not convinced by his third argument against methodological naturalism. It may be indeed that methodological naturalism does not succeed in doing everything that it sets out to do. It may be that it never will. But to assume that there are going to be “science stoppers”, and that this should lead one to pull back from a commitment of methodological naturalism, is to reveal that one has another agenda. We know that Plantinga's agenda is Christianity. That is fair enough. But it is an agenda backed by a deliberate ignorance of work which is going on today in science. Plantinga is able to talk so confidently about science stoppers, only because he has not and apparently will not look at what scientists are saying and achieving. These people may not be right, but they do deserve more of a hearing than Plantinga gives them.

4. Conclusion

These then are the arguments that Plantinga brings against methodological naturalism and my responses to him. I would argue that he has given us no reasons to give up on methodological naturalism, or inasmuch as he has it has been only because of his prior commitment to his own version of Christian theism. So I see no reason why one should not continue to draw the distinction between methodological and metaphysical naturalism; to argue that the two can be separated; and to argue that, whatever may be the philosophical and theological basis underlying metaphysical naturalism, it is not the case that the methodological naturalist has to adopt the same position. This all being so then, although I am happy to accept that methodological naturalism leads today to a belief in evolution, I am not prepared to accept that methodological naturalism is a philosophy opposed to theism. I see no reason at all to deny the Christian access to methodological naturalism, saying that it is untenable for the Christian to insist that in our understanding of the natural world one employ only the methodologically naturalistic approach. Evolution and Christianity should not be separated in this way.

Bibliography

- Box, J.F. 1978. *R.A. Fisher: The Life of a Scientist*. New York: Wiley.
- Dawkins, R. 1995. *A River out of Eden*. New York: Basic Books.
- 1996. *Climbing Mount Improbable*. New York: Norton.
- Dennett, D.C. 1995. *Darwin's Dangerous Idea*. New York: Simon and Schuster.
- Dobzhansky, T. 1967. *The Biology of Ultimate Concern*. New York: The New American Library, Inc.
- Fisher, R.A. 1950. *Creative Aspects of Natural Law. The Eddington Memorial Lecture*. Cambridge: University Press.

- Greene, J.C. and M Ruse. 1996. On the nature of the evolutionary process: the correspondence between Theodosius Dobzhansky and John C. Greene. *Biology and Philosophy* 11: 445-91.
- Hamilton, W.D. 1964a. The genetical evolution of social behaviour I. *Journal of Theoretical Biology* 7: 1-16.
- Hamilton, W D. 1964b. The genetical evolution of social behaviour II. *Journal of Theoretical Biology* 7: 17-32.
- Hull, D.L., and M. Ruse, editors. 1998. *Readings in the Philosophy of Biology: Oxford Readings in Philosophy*. Oxford: Oxford University Press.
- Johanson, D. and M. Edey. 1981. *Lucy: The Beginnings of Humankind*. New York: Simon and Schuster.
- Johnson, P.E. 1991. *Darwin on Trial*. Washington, D.C.: Regnery Gateway.
- 1995. *Reason in the Balance: The Case Against Naturalism in Science, Law and Education*. Downers Grove, Ill: InterVarsity Press.
- Kuhn, T. 1962. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- McMullin, E. 1991. Plantinga's defense of special creation. *Christian Scholar's Review* 21, no. 1: 55-79.
- Numbers, R. 1992. *The Creationists*. New York: A.A. Knopf.
- Plantinga, A. 1991a. An evolutionary argument against naturalism. *Logos* 12: 27-49.
- 1991b. Evolution, neutrality, and antecedent probability: a reply to Van Till and McMullin. *Christian Scholar's Review* 21, no. 1: 80-109.
- 1991b. When faith and reason clash: evolution and the Bible. *Christian Scholar's Review* 21, no. 1: 8-32.
- 1993. *Warrant and Proper Function*. New York: Oxford University Press.
- 1994. Naturalism defeated. *Unpublished Manuscript*.
- 1995. Methodological naturalism. *Facets of Faith and Science*. editor Van der Meer. Lanham, Md.: University Press of America.
- 1997. Methodological naturalism. *Perspectives on Science and Christian Faith* 49, no. 3: 143-54.
- Provine, W. 1989. Evolution and the foundation of ethics. *Science, Technology, and Social Progress*. Bethlehem, Pa.: Lehigh University Press.
- Ruse, M. 1975c. The relationship between science and religion in Britain, 1830-1870. *Church History* 44: 505-22.
- 1979. *The Darwinian Revolution: Science Red in Tooth and Claw*. Chicago: University of Chicago Press.
- 1982. *Darwinism Defended: A Guide to Evolutionary Controversies*. Reading, Mass.: Benjamin/Cummings Pub. Co.
- 1984. A philosopher's day in court. *Science and Creationism*. Editor A Montagu, 311-42. New York: Oxford University Press.
- 1986a. *Taking Darwin Seriously: A Naturalistic Approach to Philosophy*. Oxford: Blackwell.
- 1995. *Evolutionary Naturalism: Selected Essays*. London: Routledge.

- 1996. *Monad to Man: The Concept of Progress in Evolutionary Biology*. Cambridge, Mass.: Harvard University Press.
- 1999. *Mystery of Mysteries: Is Evolution a Social Construction?* Cambridge, Mass.: Harvard University Press.
- Ruse, M. 2000. *Can a Darwinian be a Christian? One Person's Answer*. Cambridge: Cambridge University Press.
- Sepkoski, J.J. 1978. A kinetic model of Phanerozoic taxonomic diversity I. Analysis of marine orders. *Paleobiology* 4: 223-51.
- 1979. A kinetic model of Phanerozoic taxonomic diversity II. Early Paleozoic families and multiple equilibria. *Paleobiology* 5: 222-52.
- 1984. A kinetic model of Phanerozoic taxonomic diversity III. Post-Paleozoic families and mass extinctions. *Paleobiology* 10: 246-67.
- Van Fraassen, B. 1989. *Laws and Symmetry*. Oxford : Oxford University Press.
- Westfall, R. S. 1982. *Never at Rest*. Cambridge: Cambridge University Press.

Copyright of South African Journal of Philosophy is the property of Philosophical Society of Southern Africa (PSSA) and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.