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WHAT'S WRONG WITH METHODOLOGICAL NATURALISM?

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Abstract: The compatibility of Darwinism with religious beliefs has been the subject of vigorous debate from 1859 to the present day. Darwin himself did not think that there was any incompatibility between his theory of natural selection and the existence of God. However, he did not think that appeals to the direct or indirect activity of a Creator substantially increased our understanding of any natural phenomenon. In effect, Darwin endorsed what we would today label as "methodological naturalism,' roughly the view that the only legitimate elements of the explanation of natural phenomena must appeal only to natural processes, natural laws and natural regularities.

In section 2, Darwin's commitment to methodological Darwinism is documented. Section 3 addresses the question of whether methodological naturalism does or does not rule out belief in a divine Creator. Section 4 raises the question of whether methodological naturalists are also metaphysical naturalists. Finally, section 5 assesses the warrant for expanding the scope of 'science' to include non-naturalistic factors.

Keywords: methodological and metaphysical naturalism; theistic science; secondary causation view.

Introduction

2009 is the 150th anniversary of the birth of Charles Darwin and the 100th anniversary of the publication of the *Origin of Species*. In his time, Darwin was concerned about the reception of his work by religiously minded thinkers. He was not concerned for nothing. The publication of the *Origin* generated a firestorm of criticism that has not abated to this day despite the almost universal acknowledgment among the scientific community that the theory of natural selection and its associated theory of common descent that Darwin proposed is, in broad outline, the best scientific account we have of the evolutionary history of life on this planet and of the ramifications of that history.

The compatibility of Darwinism with religious beliefs has been the subject of vigorous debate from 1859 to the present day. Darwin himself was inclined to the view that there was no incompatibility between his theoretical account and the belief in a divine Creator. In fact, his published writings are scattered through with references to the Creator although Darwin is at pains to insist that the appeal to the direct actions of a Creator does not substantially increase our understanding of any natural phenomenon. In effect, Darwin endorsed what we would today label as "methodological naturalism," roughly the view that the only legitimate elements of the explanation of natural phenomena must appeal only to natural processes, natural laws and natural regularities.

In section 2, Darwin's commitment to methodological Darwinism is documented. Section 3 addresses the question of whether methodological naturalism does or does not rule out belief in a divine Creator. Section 4 raises the question of whether methodological naturalists are also metaphysical naturalists. Finally, section 5 assesses the warrant for expanding the scope of 'science' to include non-naturalistic factors.

Darwin's Challenge

I take methodological naturalism to be the view that explanations of natural phenomena should only appeal to natural facts and natural laws. In particular, appeals to divine or supernatural causes are ruled out of court as irrelevant and uninformative. Charles Darwin was a lifelong adherent to this view. In this section, I want to document this commitment.

The road to Darwin's theory of natural selection and common descent began in 1831 with his five year journey on the HMS Beagle. From 1836 to the publication of the *Origin of Species* in 1859, Darwin was working on the development of his theory and the accumulation of the evidence to support it. During the period from 1836 to 1858, Darwin was working on what came to known as the "Big Book," a meticulous and detailed presentation of the massive amounts of data that supported the theory of common descent by means of natural selection (Stauffer 1975). In 1842 he wrote a short essay detailing his ideas and this was expanded in an essay written in 1844. His main concern was to give a naturalistic explanation of the origin of species—what he called the "mystery of mysteries—and at the same time provide an explanation for the apparent design found in nature and exemplified by the fit between organisms and their environments as well as the fact that organisms seemed to fall naturally into orders, genera, species and the like.

From the very beginning, Darwin was reluctant to credit any appeal to the 'will of the Creator' as explanatory of anything. In the 1842 manuscript, discussing the view that organisms were individually created, he says "I may premise, that according to the view ordinarily received, the myriads of organisms peopling this world have been created by so many distinct acts of creation. As we know nothing of the <illegible> will of a Creator,—we can see no reason why there should exist any relation between the organisms thus created; or again, they might be created according to any scheme. But it would be marvellous if this scheme should be the same as would result from the descent of groups of organisms from [certain] the same parents, according to the circumstances, just attempted to be developed. With equal probability did old cosmogonists say fossils were created, as we now see them, with a false resemblance to living beings; what would the Astronomer say to the doctrine that the planets moved <not> according to the law of gravitation, but from the Creator having willed each separate planet to move in its particular orbit? I believe such a proposition (if we remove all prejudices) would be as legitimate as to admit that certain groups of living and extinct organisms, in their distribution, in their structure and in their relations one to another and to external conditions, agreed with the theory and showed signs of common descent, and yet were created distinct." The comparison of the theory of natural selection with Kepler's laws of planetary motion is a recurrent theme throughout Darwin's work (F. Darwin, 1909, 22).[1]

[1] All the citations from Darwin's writings are from the complete works of Charles Darwin Online to be found at http://darwin-online.org.uk/.

In the 1844 manuscript, Darwin writes that we

> must here premise that, according to the view ordinarily received, the myriads of organisms, which have during past and present times peopled this world, have been created by so many distinct acts of creation. It is impossible to reason concerning the will of the Creator, and therefore, according to this view, we can see no cause why or why not the individual organism should have been created on any fixed scheme. That all the organisms of this world have been produced on a scheme is certain from their general affinities; and if this scheme can be shown to be the same with that which would result from allied organic beings descending from common stocks, it becomes highly improbable that they have been separately created by individual acts of the will of a Creator. For as well might it be said that, although the planets move in courses conformably to the law of gravity, yet we ought to attribute the course of each planet to the individual act of the will of the Creator. It is in every case more conformable with what we know of the government of this earth, that the Creator should have imposed only general laws. As long as no method was known by which races could become exquisitely adapted to various ends, whilst the existence of species was thought to be proved by the sterility of their offspring, it was allowable to attribute each organism to an individual act of creation. But in the two former chapters it has (I think) been shown that the production, under existing conditions, of exquisitely adapted species, is at least *possible*. Is there then any direct evidence in favour <of> or against this view? I believe that the geographical distribution of organic beings in past and present times, the kind of affinity linking them together, their so-called "metamorphic" and "abortive" organs, appear in favour of this view. On the other hand, the imperfect evidence of the continuousness of the organic series, which, we shall immediately see, is required on our theory, is against it; and is the most weighty objection. The evidence, however, even on this point, as far as it goes, is favourable; and considering the imperfection of our knowledge, especially with respect to past ages, it would be surprising if evidence drawn from such sources were not also imperfect (Darwin, 1909, 133).

Later in that manuscript, in the context of summarizing the facts about the distribution of living and extinct organisms, Darwin writes:

> Now these several facts, though evidently all more or less connected together, must by the creationist (though the geologist may explain some of the anomalies) be considered as so many ultimate facts. He can only say, that it so pleased the Creator that the organic beings of the plains, deserts, mountains, tropical and temperature forests, of S. America, should all have some affinity together; that the inhabitants of the Galapagos Archipelago should be related to those of Chile; and that some of the species on the similarly constituted islands of this archipelago, though most closely related, should be distinct; that all its inhabitants should be totally unlike those of the similarly volcanic and arid Cape de Verde and Canary Islands; that the plants on the summit of Teneriffe should be eminently peculiar; that the diversified island of New Zealand should have not many plants, and not one, or only one, mammifer; that the mammifers of S. America, Australia and Europe should be clearly related to their ancient and exterminated prototypes; and so on with other facts. But it is absolutely opposed to every analogy, drawn from the laws imposed by the Creator on inorganic matter, that facts, when connected, should be considered as ultimate and not the direct consequences of more general laws (Darwin, 1909, 182).

In the first edition of the *Origin of Species* there are several allusions to the epistemic value (or lack of value) of appeals to the Creator to account for patterns and phenomena in the organic world.

In chapter 13 on Classification (Darwin 1859, 413), Darwin wonders what naturalists had in mind when they proposed the 'Natural System' of classification. Some, he points out, meant nothing more than a convenient way of organizing living beings in a convenient way on the basis of common characters. But some, he notes, take the Natural System to be evidence of the Creator's work in the natural world. They believe, that is, "that it reveals the plan of the Creator." However, Darwin maintains that "unless it be specified whether order in time or space, or what else is meant by the plan of the Creator, it seems to me that nothing is thus added to our knowledge."

There are several comments about the significance of appeals to the Creator in Chapter 6, "Difficulties of the Theory." In that chapter, Darwin attempts to anticipate and defuse some objections that might be raised against the theory of natural selection and common descent. One potential objection concerns the transitions from one form of organism to another which is alleged to be its descendent. On Darwin's view, slight or extreme variations from the norm in the structures and habits of individuals of a given species can and do, under the right circumstances, lead to the development of new species. For those who believe in special and separate creation, these instances of 'outriders' are attributed to the pleasure of the creator. They say, according to Darwin, that "in these cases it has pleased the Creator to cause a being of one type to take the place of one of another type." But, Darwin objects, "this seems to me only restating the fact in dignified language" (Darwin 1859, 185f.). The appeal to the druthers of the Creator, in effect, adds nothing to our understanding of the matter. To someone who endorses the theory of natural selection and the attendant principle of the struggle for existence, however, the explanation for the continued existence of these atypical individuals lies in the fact the natural circumstances are such that they have a competitive advantage over their more typical conspecifics.

Darwin also addresses the difficulty posed by what he calls "organs of extreme perfection (Darwin 1859, 187ff)". The eye is the example that Darwin focuses on. This example, of course, has an honored place in the history of the interpretation of the significance of organic structures. It was held up by William Paley and an exemplary piece of evidence in favor of the supernatural design of living organisms. For Darwin, of course, such an account is unacceptable. He agrees that "It is scarcely possible to avoid comparing the eye to a telescope. We know that this instrument has been perfected by the long-continued efforts of the highest human intellects; and we naturally infer that the eye has been formed by a somewhat analogous process" (Darwin 1859, 188). But, Darwin suggests, perhaps this is presumptuous in the sense that just because we perfect instruments in a certain way that is no reason to suppose that the Creator did as well. Of course, part of Darwin's consistent litany against invoking the Creator and his plan as part of an explanation of natural phenomena is just that we have no empirically grounded reason to assume that the Creator would do things in one way rather than another. Darwin's selectionist account, on the other hand, involves assuming that the properties of the eye that we consider to be 'perfect' adaptations are the result of a slow process of the selection of organisms that possess tissues that ever so more sensitive to light than those of their conspecifics. Darwin concludes, "may we not believe that a living optical instrument might thus be formed as superior to one of glass, as the works of the Creator are to those of man?" (Darwin 1859, 189)

Immediately following the discussion of this example is the famous challenge that Darwin makes to the effect that "[i]f it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down" (Darwin 1859, 189). This, of course, is the challenge picked up by modern "Intelligent Design" theorists. But, as Darwin himself noted in the following

passages, it is one thing not to have an adequate natural explanation of the evolution of some character or trait and quite another to conclude that no such natural explanation is forthcoming. Indeed, Darwin's account of the possible evolution of the modern eye is just that—a *possible* explanation. It is, in fact, merely a 'just so' story and much more would need to be said to single out some variation of Darwin's account as correct as opposed to any alternative *naturalistic* account that might be offered. The bottom line is that the inadequacy of a naturalistic account is not, in itself, for supposing that there might be a non-naturalistic or super-naturalistic account that is preferable. In order to establish the latter, one would have to show that no naturalistic account, in principle, could explain the phenomenon in question. And, as I shall argue later, there are good reasons for thinking that this is not a viable possibility.

In the chapter on Morphology, Chapter 13, Darwin remarks on the fact that species fall into groups that that share certain common structural features. How are we to explain this fact?

> Nothing can be more hopeless than to attempt to explain this similarity of pattern in members of the same class, by utility or by the doctrine of final causes. The hopelessness of the attempt has been expressly admitted by Owen in his most interesting work on the 'Nature of Limbs.' On the ordinary view of the independent creation of each being, we can only say that so it is;—that it has so pleased the Creator to construct each animal and plant (Darwin 1859, 435).

Darwin's own account, that similar species are the products of changes due to natural selection of slight variations in common ancestors, makes it clear why we should expect such cluster groupings. And it perhaps a propos at this point to remind ourselves that one of the virtues of Darwin's (or any) viable naturalistic account is that it provides directives for further research in ways that accounts to the effect that "That's just the way it is" do not.

This is reinforced by Darwin's remarks in the conclusion to the effect that although many

> authors of the highest eminence seem to be fully satisfied with the view that each species has been independently created. To my mind it accords better with what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes, like those determining the birth and death of the individual. When I view all beings not as special creations, but as the lineal descendants of some few beings which lived long before the first bed of the Silurian system was deposited, they seem to me to become ennobled (Darwin 1859, 488f).

Ennobled or not, the fact is that the theory of natural selection and descent with modification suggests that the future will belong "to the larger and dominant groups, which will ultimately prevail and procreate new and dominant species" (Darwin 1859, 489). A clear prediction that puts the account at risk and in the process ennobles it.

The explicit rejection of appeals to the will or act of a Creator as relevant factors of explaining features of the biological world continues throughout Darwin's published writings (Darwin 1862, 2, 306; Darwin 1868, 431ff.; Darwin 1871, 230, 395; Darwin 1872a, 238; 1872b, 383; 1883). That said, Darwin remained agnostic about the existence of a Creator (Darwin, 1881; Aveling 1883).

We can summarize Darwin's commitment to methodological naturalism as follows. Appeals to divine agency are ruled out on the grounds that they do not advance our understanding of natural phenomena in any way. They explain nothing and do not provide us with any grounds for making predictions about anything. That said, Darwin is content to allow that the natural laws that we do discover may be 'secondary causes' that ultimately depend on the will of a Creator. However, as scientists, we are limited to investigating those 'secondary causes' and what, if

anything, their ground might be is beyond our ability to investigate and is therefore nothing more than fodder for fruitless speculation since there is no evidence that makes a difference to how we understand the structure and workings of nature that would allow us to single out one speculation from another.

The Compatibility of Science and Religion

As we have seen, Darwin did not see his theory of evolution as ruling out the existence of a divine Creator. Some recent commentators on the import of Darwinism have not been so sanguine (Dawkins 2008, Hitchens 2007). Other commentators have argued for the compatibility of Darwinism and religion (Ruse 2004, Gould 1997).

Gould's 1997 article was a response to a 1996 Catholic encyclical by Pope John Paul which touched on the proper relationship between religion, as understood by the Catholic Church, and the theory of evolution. What the Pope had said, in essence, was that not only was the theory of evolution consistent with Catholic doctrine but, in addition, it was very like true. This was congenial to Gould's own view was that there was no serious conflict between religion and science because the respective spheres of interest of the two [their respective "magisteria," as it were] were "non-overlapping." What Gould (1997) said was that

> The lack of conflict between science and religion arises from a lack of overlap between their respective domains of professional expertise—science in the empirical constitution of the universe, and religion in the search for proper ethical values and spiritual meaning of our lives.

Another way to put this is that science, on Gould's view, deals with facts, whereas religion deals with values. There are undoubtedly a large number of scientists and religionists who are happy with this compromise. However, the situation is not as clear cut as Gould's position would have us suppose. For starters, religious doctrines are not limited to the endorsement of values and the spiritual life of human beings. Religions offer creation stories that conflict with the stories told by scientists and they offer views about the relationships of human beings and the world we live in to divine purposes and divine actions that are often alleged to be inaccessible by the methods and devices of the empirical sciences. It is possible, of course, to accommodate some of these conflicts by appealing to metaphorical or allegorical readings of central religious texts and by invoking appeals to "secondary causation" and the like. In this way, for instance, the tension between religious believers in divine creation and Darwin's theory of evolution can be defused by allowing that the world and everything in it was ultimately created by a divine presence but in such a way that human beings evolved from non-human forms rather than being created by God directly. On this view, evolution is just God's way of creating human beings (and other biological beings as well). This view is, of course, in apparent conflict with biblical traditions but here the conflict can be resolved by appealing to allegorical readings of the bible. There are many passages in Darwin endorsing this "secondary causation view" (e.g., F. Darwin 1909, 254; Darwin 1859, 488; Darwin 1862, 2). It goes without saying that this compromise is not to everyone's taste.

On the other hand, some people interpret the progress of science as gradually eroding the significance and importance of appeals to divine presence in understanding the workings of our world. In the 17th century, Isaac Newton constructed a physical theory that over the subsequent 250 years developed into a powerful descriptive and explanatory tool for understanding the workings of physical systems. Yet, at the beginning, there were anomalous features of the

system that were 'fixed' by an appeal to direct intervention by God. One, which dealt with the problem of gravitational collapse, was not resolved until the middle of the last century. Basically, the problem is that if every material object in the universe is gravitationally attracted to every other material object, then given enough time, everything in the universe ought to come together in a huge spherical ball of stuff. Yet, to the naked eye, the heavens seemed remarkable stable and the stars, at least, seemed to present the same configurations in 1660 as they had in ancient times. Another problem dealt with the planetary orbits. Johannes Kepler in the early 1600's had induced empirical generalizations that described inherent regularities in the orbits of the planets and Newton's physical theory had provided an explanation, invoking universal gravitation, of those regularities. The problem was that, while Kepler's laws were reasonably accurate when one considered a single planet revolving around the sun, in fact there were 5 planets (not to mention their moons) in the solar system each of which was gravitationally disturbing the motion of the others. The mathematics of these motions is extremely complex and was beyond even the tremendous powers of Newton. The net effect was that Newton thought that the gravitational interaction of the planets would de-stabilize them and eventually all the planets would fall into the sun. Again, this theoretical conclusion was belied by the observed stability of the planetary system at least since ancient times. In both these cases, Newton supposed that God, at opportune moments, would intervene to re-stabilize the universe and the orbits of the planets and so prevent an ultimate collapse. In 1800, when Laplace established that the planetary perturbations cancelled out and the stability of the solar system was established, Napoleon is reputed to have asked him "Where is God in your system?" and Laplace is reputed to have answered "I have no need for that hypothesis."

Such episodes gave rise to the idea that the progress of science drove the importance of God into the "gaps" left by our incomplete scientific understanding of the workings of the natural world. The implication seemed to be that the role of God in understanding natural processes was increasingly marginalized as our scientific understanding of those processes increased. Darwin complained constantly of the fact that no one asks astronomers to add an appeal to the actions of a Creator when explaining the motions of planets using Kepler's laws yet naturalists were put upon to do so when there were perfectly respectable naturalistic accounts available to explain the structures, distribution and history of living organisms (e.g., F. Darwin and Seward 1903, 192; F. Darwin 1909, 154, 192). Another metaphor Darwin was fond of compared natural selection to a human architect: just as no one thought an appeal to the maker of the architect was relevant to understanding how the architect designed the structures that he did, so it seemed to Darwin an appeal to the 'Creator' of natural selection was not relevant to understand how natural selection worked to shape the biotic environment (e.g., Darwin 1868, 430; F. Darwin and Seward 1903, 103, 154).

Of course these considerations leave untouched the moral or ethical dimensions and some might well take comfort in the view that God has an important moral role to play in the universe. However, the philosopher James Rachels, in his book *Created from Animals: The Moral implications of Darwinism*, argued that the progress of science does have implications about the role of God in matters moral.

Rachels' book is one long argument to the effect that Darwinism undermines the concept of human dignity and enjoins us to reassess the moral status of human beings among the other animals. Rachels takes what he calls the traditional concept of human dignity to be the presumption that the primary purpose of morality is the "protection of human beings and their rights and interests" (Rachels 1990, 4). This presumption is supported by certain factual (or quasi-factual) assumptions about human nature. Two basic claims emerge from this factual

base and support the sanctity of human dignity. One is the presumption that human beings were created (as special) in the image of God. The second is the presumption that human beings alone among the animals are rational beings. It does not follow logically from these presumptions that human dignity is or ought to be the lynch pin of morality. But, Rachels argues, the primacy of human dignity does rest on and is supported by these presumptions. They serve as it were as the rationale for putting human concerns ahead of all others in matters of morals.

Darwinism indirectly undermines the primacy of human dignity by undermining the presumptions that support the doctrine. The Darwinian perspective marginalizes God as the creator of human beings as special. Although Darwinism does not entail that God did not create human beings as special, it renders the story superfluous or suspect. From the Darwinian perspective, humans are just one among the animals. The Darwinian theory of common descent suggests that all organisms are interrelated. Darwinian gradualism suggests that differences between species are often matters of degree and not matters of kind. These implications undermine the status of human beings as special and in so doing undermine the traditional moralities which are based on that explicit or implicit assumption.

More recently Richard Dawkins has argued that Darwinism entails or supports the idea that God does not exist. This is a bit strong since even if one argued that evolutionary theory renders the presence of God irrelevant for understanding how nature works or for deciding what kind of morality human beings ought to adopt, it is still open to the religious believer to retreat to a "God behind the scenes" view where God is the ultimate Creator but does not directly affect what goes on in the world. Of course, many Christians and other believers are not going to be satisfied with this but my point has not been to argue that any of these intellectual forays is conclusive one way or another but rather to call doubt on the simplistic view that we can resolve the tension between science and religion by appealing to Gould's conception of science and religion as "non-overlapping magisterial." The borders are fuzzy and subject to periodic encroachments by both sides.

Methodological versus Metaphysical Naturalism

A more sophisticated challenge to the autonomy of science by the Christian philosopher Alvin Plantinga suggests that science excludes religious consideration only by an unwarranted presumption of "methodological naturalism." A related but stronger view has been labeled "metaphysical naturalism." Metaphysical naturalism is the view that the *only* processes and beings that exist are those that are amenable to scientific explanation. It goes without saying that one can be a methodological naturalist without being a metaphysical naturalist.

We can use an exchange between Alvin Plantinga and Ernan McMullin as the basis for an assessment of the legitimacy of Plantinga's charge that the assumption by scientists of methodological naturalism is unwarranted. Alvin Plantinga's "When Faith and Reason Clash: Evolution and the Bible," raises the question of how a believing Christian is to reconcile belief in the word of the bible with an acceptance of the reasoned results of modern science. This carefully reasoned inquiry raises fundamental questions about the scope and limits of natural science and the certainty with which scientists allegedly conclude that a broadly Darwinian perspective is more probably correct than a theistic creation view. Plantinga's strategy is to challenge the grounds for what he calls the "Grand Evolutionary Hypothesis." The Grand Evolutionary Hypothesis is the conjunction of five distinct theses: (1) The earth is ancient; (2) Evolution is progressive; (3) The thesis of common descent; (4) The evolution of life has a naturalistic explanation; and (5) The thesis that life has a naturalistic origin (Plantinga

1998a, 684). The gist of his critique is to argue that whatever certainty scientists think they have achieved about these matters is not grounded in evidence but rather in a blind faith in "methodological naturalism" (Plantinga 1998a, 693). But, Plantinga asks, why should we take this to be the be-all and end-all of how to do science? Instead, he proposes the development of what he calls "theistic science" which would supplement hypotheses derived from and validated by methodological naturalism with theistic hypotheses derived from and validated by theistic-science methodology. When we expand our horizons in this way, Plantinga avers, we will conclude that theses (5) and (4) at least are highly problematic. In "Evolution and Special Creation," Ernan McMullin, a Catholic priest and Notre Dame colleague of Plantinga, takes exception to this call for a theistic science. In particular, he challenges Plantinga's conclusion that including considerations based on Christian faith would lead us to conclude that belief in special creation is more probable than not. Although McMullin, as a believing Christian, is not averse to introducing theistic considerations in order to develop a comprehensive world view, he vigorously resists Plantinga's suggestion that such extensions be called "science" (McMullin 1998, 703). In particular, he suggests that when special creation and evolution are construed as rival cosmological explanations, the end result is likely to be a series of "skirmishes" with the religious believer more likely to be the loser (McMullin 1998, 712f.). In his response to McMullin, Plantinga urges that pursuing what he calls "Augustinian" science, that is, science in service of a broadly religious vision of the world, does not necessarily lead to the skirmishes between faith and reason with faith more often than not the loser, as McMullin fears. But his response shows just what is wrong with "Augustinian" science. Consider the thesis of common descent or TCA as Plantinga labels it. Plantinga focuses on this as the core of evolutionary naturalism since it is often claimed to be as certain as anything science has established. The theist, according to Plantinga, has no vested interest in the truth or falsity of TCA (Plantinga 1998b, 741)! Whatever the evidence my finally lead us to, the accommodating theist can accept it and retain her faith as well. What this shows, I think, is that the theism is doing no intellectual work here. Plantinga may well be right that anti-theistical naturalists interpret the "certain" truth of TCA as evidence of the non-existence of God, but fallibilistic naturalists need not do so.

If we come across a phenomenon that we cannot understand within the current framework of a broadly naturalistic science, what should our stance be? Plantinga argues that, in such circumstances. An appeal to God's plan is better than no hypothesis at all. Any port in an intellectual storm, as it were. But, one reason naturalists reject such appeals and would rather invoke no hypothesis at all is because they see, with Darwin, the God hypothesis as *not* offering an alternative explanation. Appeals to God's plan are not alternative explanations because they are *not* explanations at all. This point is illustrated in the passage cited above that Plantinga offers as the saving grace of the Augustinian position. Any explanation worth its salt will account for why (or how) what happened did rather than something else. But, the God hypothesis is compatible with any alternative outcome and so explains none. TCA is shown to be true? Fine, it must be part of God's plan. TCA is shown to be false? Fine, again, it must be part of God's plan, properly understood.

Plantinga is surely right that nothing in our current understanding of evolutionary biology "decisively" rules out a divine creationist account. Equally, nothing demands or requires it either. If anything, the "methodological naturalism" that McMullin (and I) see as an essential aspect of modern *science*, urges us not to invoke divine creationist accounts. At this point, Plantinga raises a deeper question: why should we interpret science this way? Why should we accept methodological naturalism? Why, indeed?

Plantinga attempts to defuse naturalistic objections to the theistic rejection of TCA by arguing that the antecedent probability of TCA given either theism or naturalism is less than 2 (Plantinga 1998b, 746f.; cf. Fitelson and Sober 1998). Admittedly, these are guesstimates. But, even so, this is surely all smoke and mirrors. When we ask whether it is more or less antecedently probable that God did or did not act in one way rather than another, how are we supposed to even come up with a guess? Plantinga concedes that no "calculations" are proper here, but even so he thinks that the very possibility of alternatives somehow diminishes the certainty with which we are entitled to hold our hypotheses (Plantinga 1998b, 748). In the abstract, he is surely right again. If methodological naturalists were Cartesian epistemologists who held that "certainty" meant "incorrigibility", then the possibility that they might be mistaken would undermine all their science. But, methodological naturalists, at least the reasonable ones, are fallibilists whose claims to "certainty" are always hedged.

Finally, Plantinga asks, why should we, with McMullin, think of God as a "classical artist, devoted to ideals of simplicity and elegance, economy and restraint" (Plantinga 1998b, 749)? Why not, he suggests, think of God as "a romantic artist with limitless resources, extravagant, prolific, fecund, overflowing with uproarious creative activity, disdaining restraint and economy of action" (Plantinga 1998b, 749). Why not, indeed. And here again one can see the problems with Augustinian *science.* When someone comes up with an alternative vision of what Christian theism is all about, the Augustinian scientist need only isolate the features God is presumed to have in that vision and ask: "Why think of God like that? Why not think of God in some way that is compatible with an alternative view on the antecedent probabilities of various evolutionary hypotheses?" And the answer must again be: "Why not, indeed." And here we see the nub of the uneasiness that evolutionary naturalists have in letting anything like the Augustinian point of view influence scientific debates. Unlike the debates amongst evolutionary naturalists over competing hypotheses (such as, for example, the proper phylogenetic relationship amongst a group of species) where there is at least some hope of coming to a resolution, the internecine conflicts amongst Augustinian scientists have no hope of resolution and must forever echo: Why? Why not?

What's Wrong with Methodological Naturalism?

Is there anything else to be said for preferring methodological naturalism over some alternative methodology that might allow for the relevance of religious input? Plantinga is certainly correct to insist that the methodological decision to adopt the naturalistic point of view is not something that can be said to be grounded either in empirical evidence or in scientific theory. The methodological principles we adopt are implicated in the decision about what counts as relevant evidence and what counts as a legitimate theory. Ultimately, the choices are pragmatic. Modern science has developed as a set of practices that places a premium on predictive success and heuristic fertility.

Darwin complained that adding God to the equation had no explanatory or heuristic value. Darwin's reservations were directed against those who held that natural phenomena, for example, the separate creation of species, were explained by the direct intervention of a divine Creator. Plantinga, although he might be said to favor such a view in light of his claim that the evidence for the TCA is not compelling, also endorses a wider role for a divine Creator, namely that of a sustaining presence even in cases where naturalistic accounts are deemed sufficient. My sense is that Darwin's response to Plantinga's endorsement of an "Augustinian science" with its commitment to the sustaining presence of a Christian God would echo his reservations

about appeals to supernatural direct intervention. Naturalistic explanations do not rule out the possibility of a sustaining presence but the addition of such a consideration contributes nothing to our understanding of the phenomena in the sense that our expectations with respect to experiential results will not be changed in any way.

For the working scientist whose aim is to understand how the world works, there is nothing wrong with methodological naturalism. At a minimum, science's commitment to methodological naturalism is a commitment to the demand that the explanatory features we adduce in attempting to account for the workings of the world are such that they give rise to certain expectations that we have some reason to believe will make a discernable difference to our intersubjective experiences. Appeals to super-natural forces or super-natural perspectives do not satisfy this demand and hence do not contribute to a scientific explanation of any natural phenomena. To the extent that they might do so, they would get incorporated into an expanded vision of the natural world. But, I take it that no Augustinian scientist would want to win the battle over the relevance of religion to science by naturalizing our conception of God.

There are, finally, the questions concerning the source and grounds of norms. Does methodological naturalism contain or support ethical norms? If methodological naturalism entailed metaphysical naturalism then one might argue that this puts it into potential conflict with faith based conceptions of science at least with respect to its normative implications. Either methodological naturalism entails metaphysical naturalism or it doesn't. If it does, then one either denies that norms have any non-instrumental validity or one might attempt to provide a naturalistic account that explains the emergence of norms and provides a justification for them. If it does not, the methodological naturalist is free to search for the source and grounds of norms in areas removed from the scientific understanding of natural processes. Either option faces vexing problems. The former leads either to the rejection of the very idea of norms or to accounts that are open to criticism on the grounds that they commit a 'naturalistic fallacy.' The latter leads to accounts that may trace the source of norms but leaves open their ground or justification. In any case, accounts that trace norms to religious convictions face problems first raised by Plato in the *Euthyphro.* The further exploration of either option must be left for another time and another place.

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