Supplemental Contents

When Faith and Reason Clash: Evolution and the Bible.

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My question is simple: how shall we Christians deal with apparent conflicts between faith and reason, between what we know as Christians and what we know in other ways, between teaching of the Bible and the teachings of science? As a special case, how shall we deal with apparent conflicts between what the Bible initially seems to tell us about the origin and development of life, and what contemporary science seems to tell us about it? Taken at face value, the Bible seems to teach that God created the world relatively recently, that he created life by way of several separate acts of creation, that in another separate act of creation, he created an original human pair, Adam and Eve, and that these our original parents disobeyed God, thereby bringing ruinous calamity on themselves, their posterity and the rest of creation.

According to contemporary science, on the other hand, the universe is exceedingly old-some 15 or 16 billion years or so, give or take a billion or two. The earth is much younger, maybe 4 ½ billion years old, but still hardly a spring chicken. Primitive life arose on earth perhaps 3 ½ billion years ago, by virtue of processes that are completely natural if so far not well understood; and subsequent forms of life developed from these aboriginal forms by way of natural processes, the most popular candidates being perhaps random genetic mutation and natural selection.

Now we Reformed Christians are wholly in earnest about the Bible. We are people of the Word; *Sola Scriptura* is our cry; we take Scripture to be a special revelation from God himself, demanding our absolute trust and allegiance. But we are equally enthusiastic about reason, a God-given power by virtue of which we have knowledge of ourselves, our world, our past, logic and mathematics, right and wrong, and God himself; reason is one of the chief features of the image of God in us. And if we are enthusiastic about reason, we must also be enthusiastic about contemporary natural science, which is a powerful and vastly impressive manifestation of reason. So this is my question: given our Reformed proclivities and this apparent conflict, what are we to do? How shall we think about this matter?

I. When Faith and Reason Clash

If the question is simple, the answer is enormously difficult. To think about it properly, one must obviously know a great deal of science. On the other hand, the question crucially involves both philosophy and theology: one must have a serious and penetrating grasp of the relevant theological and philosophical issues. And who among us can fill a bill like that? Certainly I can't. (And that, as my colleague Ralph McInerny once said in another connection, is no idle boast.) The scientists among us don't ordinarily have a sufficient grasp of the relevant philosophy and theology; the philosophers and theologians don't know enough science; consequently, hardly anyone is qualified to speak here with real authority. This must be one of those areas where fools rush in and angels fear to tread. Whether or not it is an area where angels fear to tread, it is obviously an area where fools rush in. I hope this essay isn't just one more confirmation of that dismal fact.

But first, a quick gesture towards the history of our problem. Our specific problem-faith and evolution-has of course been with the church since Darwinian evolution started to achieve wide acceptance, a little more than a hundred years ago. And this question is only a special case of two more general questions, questions that the Christian Church has faced since its beginnings nearly two millennia ago: first, what shall we do when there appears to be a conflict between the deliverances of faith and the deliverances of reason? And another question, related but distinct: how shall we evaluate and react to the dominant teachings, the dominant intellectual motifs, the dominant commitments of the society in which we find ourselves? These two questions, not always clearly distinguished, dominate the writings of the early church fathers from the second century on.

Naturally enough, there have been a variety of responses. There is a temptation, first of all, to declare that there really can't be any conflict between faith and reason. The no-conflict view comes in two quite different versions. According to the first, there is no such thing as truth *simpliciter,* truth just as such: there is only truth from one or another perspective. An extreme version of this view is the medieval two-truth theory associated with Averroes and some of his followers: some of these thinkers apparently held that the same proposition can be true according to philosophy or reason, but false according to theology or faith; true as science but false as theology. Thinking hard about this view can easily induce vertigo: the idea, apparently, is that one ought to affirm and believe the proposition as science, but deny it as theology. How you are supposed to do that isn't clear. But the main problem is simply that truth isn't merely truth with respect to some standpoint. Indeed, any attempt to explain what *truth from a standpoint* might mean inevitably involves the notion of truth *simpliciter.*

A more contemporary version of this way of thinking-the truth-from-a-standpoint way of thinking-takes its inspiration from contemporary physics. To oversimplify shamelessly, there is a problem: light seems to display both the properties of a wave in a medium and also the properties of something that comes in particles. And of course the problem is that these properties are not like, say, *being green* and *being square,* which can easily be exemplified by the same object; the problem is that it looks for all the world as if light *can't* be both a particle and a wave. According to Niels Bohr, the father of the Copenhagen interpretation of quantum mechanics, the solution is to be found in the idea of *complementarity.* We must recognize that there can be descriptions of

the same object or phenomenon which are both true, and relevantly complete, but nonetheless such that we can't see how they could both hold. From one point of view light displays the particle set of properties; from another point of view, it displays the wave properties. We can't see how both these descriptions can be true, but in fact they are. Of course the theological application is obvious: there is the broadly scientific view of things, and the broadly religious view of things; both are perfectly acceptable, perfectly correct, even though they appear to contradict one another.[1] And the point of the doctrine is that we must learn to live with and love this situation.

But this view itself is not easy to learn to love. Is the idea that the properties in question *really are* inconsistent with each other, so that it isn't possible that the same thing have both sets of properties? Then clearly enough they *can't* both be correct descriptions of the matter, and the view is simply false. Is the idea instead that while the properties are *apparently* inconsistent, they aren't really inconsistent? Then the view might be correct, but wouldn't be much by way of a *view,* being instead nothing but a redescription of the problem.

Perhaps a more promising approach is by way of territorial division, like that until recently between East and West Germany, for instance. We assign some of the conceptual territory to faith and Scripture, and some of it to reason and science. Some questions fall within the jurisdiction of faith and Scripture; others within that of reason and science, but none within both. These questions, furthermore, are such that their answers can't conflict; they simply concern different aspects of the cosmos. Hence, so long as there is no illegal territorial encroachment, there will be no possibility of contradiction or incompatibility between the teachings of faith and those of science. Conflict arises only when there is trespass, violation of territorial integrity, by one side or the other. A limited version of this approach is espoused by our colleague Howard van Till in *The Fourth Day.* Science, he says, properly deals only with matters *internal* to the universe. It deals with the properties, behavior and history of the cosmos and the objects to be found therein; but it can tell us nothing about the *purpose* of the universe, or about its *significance,* or its *governance,* or its *status;* that territory has been reserved for Scripture. The Bible addresses itself only to questions of external relationships, relationships of the cosmos or the things it contains to things beyond it, such as God. Scripture deals with the status, origin, value, governance and purpose of the cosmos and the things it contains, but says nothing of their properties, behavior or history.

Now van Till means to limit these claims to the *prehistory* (i.e., history prior to the appearance of human beings) of the cosmos; he does not hold that science and Scripture cannot both speak on matter of *human* history, for example.[2] This means that his view doesn't give us a general approach to *prima facie* conflicts between science and Scripture; for it says nothing about such apparent conflicts that pertain to matters of human history, or to matters concerning how things have gone in the cosmos since the appearance of human beings. Van Till limits his approval of this approach for very good reason; taken as a *general* claim, the contention that Scripture and

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[1] Perhaps the shrewdest contemporary spokesman for this view is the late Donald MacKay in *The Clockwork Image. A Christian Perspective on Science* (London: Intervarsity Press, 1974) and "'Complementarity' in Scientific and Theological Thinking" in *Zygon,* Sept. 1974, pp. 225 ff.

[2] *The Fourth Day* (Grand Rapids: Wrn. B. Eerdmans Publishing Co., 1986), p. 195.

science never speak on the same topic is obviously much too simple. First, there are many questions such that both science (taken broadly) and the Bible purport to answer them: for example, *Was there such a person as Abraham? Was Jesus Christ crucified? Has anyone ever caught fish in the Sea of Galilee? Do ax heads ever float?* Indeed, even if we restrict or limit the claim, in van Till's way, to the prehistory of the cosmos, we still find questions that both Scripture and science seem to answer: for example, *Has the cosmos existed for an infinite stretch of time?*

Further, it is of the first importance to see that when we remove that limitation (and here, of course, van Till would agree), then it isn't true at all that the Bible tells only about status, value, purpose, origin, and the like. It tells us about Abraham, for example, and not only about his status and purpose; it tells us he lived in a certain place, made the long journey from Ur to Canaan, had a wife Sarah who had a son when she was really much too old, proposed at one time to sacrifice Isaac in obedience to the Lord, and so on. Even more important, the Bible tells us about Jesus Christ, and not simply about his origin and significance. It *does* tell us about those things, and of course they are of absolutely crucial importance to its central message; but it also tells us much else about Christ. We learn what he did: he preached and taught, drew large crowds, performed miracles. It tells us that he was crucified, that he died, and that he rose from the dead. Some of the teachings most central to Scripture and to the Christian faith tell us of concrete historical events; they therefore tell us of the history and properties of things within the cosmos. Christ died and then rose again; this tells us much about some of the entities within the cosmos. It tells us something about the history, properties, and behavior of his body, for example: namely, that it was dead and then later on alive. It thus tells us that some of the things in the cosmos behaved very differently on *this* occasion from the way in which they *ordinarily* behave. The same goes, of course, for the Ascension of Christ, and for the many other miracles reported in Scripture.

So we can't start, I think, by declaring that the teachings of contemporary science cannot conflict with the deliverances of the faith; obviously they can. We can't sensibly decide in advance what topics Scripture can or does speak on: instead we must look and see. And in fact it speaks on an enormous variety of topics and questions-some having to do with origin, governance, status and the like, but many more having to do with what happened within the cosmos at a particular place and time, and hence with what also falls within the province of science. It speaks of history, of miracles, of communications from the Lord, of what people did and didn't do, of battles, healings, deaths, resurrections, and a thousand other things.

Let's look a little deeper. As everyone knows, there are various intellectual or cognitive powers, belief-producing mechanisms or powers, various sources of belief and knowledge. For example, there are perception, memory, induction, and testimony, or what we learn from others. There is also reason, taken narrowly as the source of logic and mathematics, and reason taken more broadly as including perception, testimony and both inductive and deductive processes; it is reason taken this broader way that is the source of science. But the serious Christian will also take our grasp of Scripture to be a proper source of knowledge and justified belief. just how does Scripture work as a source of proper belief? An answer as good as any I know was given by John Calvin and endorsed by the Belgic Confession: this is Calvin's doctrine of the Internal Testimony of the Holy Spirit. This is a fascinating and important contribution that doesn't get nearly the

attention it deserves; but here I don't have time to go into the matter. Whatever the mechanism, the Lord speaks to us in Scripture.

And of course what the Lord proposes for our belief is indeed what we should believe. Here there will be enthusiastic agreement on all sides. Some conclude, however, that when there is a conflict between Scripture (or our grasp of it) and science, we must reject science; such conflict automatically shows science to be wrong, at least on the point in question. In the immortal words of the inspired Scottish bard William E. McGonagall, poet and tragedian,

When faith and reason clash,
Let reason go to smash.

But clearly this conclusion doesn't follow. *The Lord* can't make a mistake: fair enough; but *we* can. Our grasp of what the Lord proposes to teach us can be faulty and flawed in a thousand ways. This is obvious, if only because of the widespread disagreement among serious Christians as to just what it is the Lord *does* propose for our belief in one or another portion of Scripture. Scripture is indeed perspicuous: what it teaches with respect to the way of salvation is indeed such that she who runs may read. It is also clear, however, that serious, well-intentioned Christians can disagree as to what the teaching of Scripture, at one point or another, really is. Scripture is inerrant: the Lord makes no mistakes; what he proposes for our belief is what we ought to believe. Sadly enough, however, our grasp of what he proposes to teach is fallible. Hence we cannot simply identify the teaching of Scripture with our grasp of that teaching; we must ruefully bear in mind the possibility that we are mistaken. "He sets the earth on its foundations; it can never me moved," says the Psalmist.[3] Some sixteenth-century Christians took the Lord to be teaching here that the earth neither rotates on its axis nor goes around the sun; and they were mistaken.

So we can't identify our understanding or grasp of the teaching of Scripture with the teaching of Scripture; hence we can't automatically assume that conflict between what we see as the teaching of Scripture, and what we seem to have learned in some other way must always be resolved in favor of the former. Sadly enough, we have no guarantee that on every point our grasp of what Scripture teaches is correct; hence it is possible that our grasp of the teaching of Scripture be corrected or improved by what we learn in some other way-by way of science, for example. But neither, of course, can we identify either the current deliverances of reason or our best contemporary science (or philosophy, or history, or literary criticism, or intellectual efforts of any kind) with the truth. No doubt what reason, taken broadly, teaches is by and large reliable; this is, I should think, a consequence of the fact that we have been created in the image of God. Of course we must reckon with the fall and its noetic effects; but the sensible view here, overall, is that the deliverances of reason are for the most part reliable. Perhaps they are most reliable with respect to such common everyday judgments as that there are people here, that it is cold outside, that the pointer points to 4, that I had breakfast this morning, that 2+1=3, and so on; perhaps they are less reliable when it comes to matters near the limits of our abilities, as with certain questions in set theory, or in areas for which our faculties don't seem to be primarily

[3] Ps. 104 vs. 5.

designed, as perhaps in the world of quantum mechanics. By and large, however, and over enormous swatches of cognitive territory, reason is reliable.

Still, we can't simply embrace current science (or current anything else either) as the truth. We can't identify the teaching of Scripture with our grasp of it because serious and sensible Christians disagree as to what Scripture teaches; we can't identify the current teachings of science with truth, because the current teachings of science change. And they don't change just by the accumulation of new facts. A few years back, the dominant view among astronomers and cosmologists was that the universe is infinitely old; at present the prevailing opinion is that the universe began some 16 billion years ago; but now there are straws in the wind suggesting a step back towards the idea that there was no beginning.[4] Or think of the enormous changes from nineteenth- to twentieth-century physics. A prevailing attitude at the end of the nineteenth century was that physics was pretty well accomplished; there were a few loose ends here and there to tie up and a few mopping up operations left to do, but the fundamental lineaments and characteristics of physical reality had been described. And we all know what happened next.

As I said above, we can't automatically assume that when there is a conflict between science and our grasp of the teaching of Scripture, it is science that is wrong and must give way. But the same holds vice *versa;* when there is a conflict between our grasp of the teaching of Scripture and current science, we can't assume that it is our interpretation of Scripture that is at fault. It could be that, but it doesn't *have* to be; it could be because of some mistake or flaw in current science. The attitude I mean to reject was expressed by a group of serious Christians as far back as 1832, when deep time was first being discovered; "If sound science appears to contradict the Bible," they said, "we may be sure that it is our interpretation of the Bible that is at fault." [5] To return to the great poet McGonagall,

When faith and reason clash,
'Tis faith must go to smash.

This attitude-the belief that when there is a conflict, the problem must inevitably lie with our interpretation of Scripture, so that the correct course is always to modify that understanding in such a way as to accommodate current science-is every bit as deplorable as the opposite error. No doubt science can correct our grasp of Scripture; but Scripture can also correct current science. If, for example, current science were to return to the view that the world has no beginning, and is infinitely old, then current science would be wrong.

So what, precisely, must we do in such a situation? Which do we go with faith or reason? More exactly, which do we go with, our grasp of Scripture or current science? I don't know of any infallible rule, or even any pretty reliable general recipe. All we can do is weigh and evaluate the relative warrant, the relative backing or strength, of the conflicting teachings. We must do our best to apprehend both the teachings of Scripture and the deliverances of reason; in either case we will have much more warrant for some apparent teachings than for others. It may be hard to see just what the Lord proposes to teach us in the Song of Solomon or Old Testament

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[4] See Stephen Hawking, *A Brief History of Time* (New York: Bantam Books, 1988), pp. 115 ff.

[5] *Christian Observer 1832, p. 437.*

genealogies; it is vastly easier to see what he proposes to teach us in the Gospel accounts of Christ's resurrection from the dead. On the other side, it is clear that among the deliverances of reason is the proposition that the earth is round rather than flat; it is enormously harder to be sure, however, that contemporary quantum mechanics, taken realistically, has things right.[6] We must make as careful an estimate as we can of the degrees of warrant of the conflicting doctrines; we may then make a judgment as to where the balance of probability lies, or alternatively, we may suspend judgment. After an, we don't *have* to have a view on all these matters.

Let me illustrate from the topic under discussion. Consider that list of apparent teachings of Genesis: that God has created the world, that the earth is young, that human beings and many different kinds of plants and animals were separately created, and that there was an original human pair whose sin has afflicted both human nature and some of the rest of the world. At least one of these claims-the claim that the universe is young-is very hard to square with a variety of types of scientific evidence: geological, paleontological, cosmological and so on. Nonetheless a sensible person might be convinced, after careful and prayerful study of the Scriptures, that what the Lord teaches there implies that this evidence is misleading and that as a matter of fact the earth really is very young. So far as I can see, there is nothing to rule this out as automatically pathological or irrational or irresponsible or stupid.

And of course this sort of view can be developed in more subtle and nuanced detail. For example, the above teachings may be graded with respect to the probability that they really are what the Lord intends us to learn from early Genesis. Most clear, perhaps, is that God created the world, so that it and everything in it depends upon him and neither it nor anything in it has existed for an infinite stretch of time. Next clearest, perhaps, is that there was an original human pair who sinned and through whose sinning disaster befell both man and nature; for this is attested to not only here but in many other places in Scripture. That humankind was separately created is perhaps less clearly taught; that many other kinds of living beings were separately created might be still less clearly taught; that the earth is young, still less clearly taught. One who accepted all of these theses ought to be much more confident of some than of others-both because of the scientific evidence against some of them, and because some are much more clearly the teachings of Scripture than others. I do not mean to endorse the view that all of these propositions are true: but it isn't just silly or irrational to do so. One need not be a fanatic, or a Flat Earther, or an ignorant Fundamentalist in order to hold it. In my judgment the view is mistaken, because I take the evidence for an old earth to be strong and the warrant for the view that the Lord teaches that the earth is young to be relatively weak. But these judgments are not simply obvious, or inevitable, or such that anyone with any sense will automatically be obliged to agree.

II. Faith and Evolution

So I can properly correct my view as to what reason teaches by appealing to my understanding of Scripture; and I can properly correct my understanding of Scripture by appealing to the teachings of reason. It is of the first importance, however, that we correctly *identify* the relevant teachings of reason. Here I want to turn directly to the present problem, the apparent disparity between

[6] Here the work of Bas van Fraassen is particularly instructive.

what Scripture and science teach us about the origin and development of life. Like any good Christian Reformed preacher, I have three points here. First, I shall argue that the theory of evolution is by no means religiously or theologically neutral. Second, I want to ask how we Christians should in fact think about evolution; how probable is it, all things considered, that the Grand Evolutionary Hypothesis is true? And third, I want to make a remark about how, as I see it, our intellectuals and academics should serve us, the Christian community, in this area.

A. Evolution religiously neutral?

According to a popular contemporary myth, science is a cool, reasoned, wholly dispassionate attempt to figure out the truth about ourselves and our world, entirely independent of religion, or ideology, or moral convictions, or theological commitments. I believe this is deeply mistaken. Following Augustine (and Abraham Kuyper, Herman Dooyeweerd, Harry Jellema, Henry Stob and other Reformed thinkers), I believe that there is conflict, a battle between the *Civitas Dei,* the City of God, and the City of the World. As a matter of fact, what we have, I think, is a three-way battle. On the one hand there is Perennial Naturalism, a view going back to the ancient world, a view according to which there is no God, nature is all there is, and mankind is to be understood as a part of nature. Second, there is what I shall call 'Enlightenment Humanism': we could also call it 'Enlightenment Subjectivism' or 'Enlightenment Antirealism': this way of thinking goes back substantially to the great eighteenth-century enlightenment philosopher Immanuel Kant. According to its central tenet, it is really we human beings, we men and women, who structure the world, who are responsible for its fundamental outline and lineaments. Naturally enough, a view as startling as this comes in several forms. According to Jean Paul Sartre and his existentialist friends, we do this world-structuring freely and individually; according to Ludwig Wittgenstein and his followers we do it communally and by way of language; according to Kant himself it is done by the transcendental ego which, oddly enough, is neither one nor many, being itself the source of the one-many structure of the world. So two of the parties to this three-way contest are Perennial Naturalism and Enlightenment Humanism; the third party, of course, is Christian theism. Of course there are many unthinking and ill-conceived combinations, much blurring of lines, many cross currents and eddies, many halfway houses, much halting between two opinions. Nevertheless I think these are the three basic contemporary Western ways of looking at reality, three basically *religious* ways of viewing ourselves and the world. The conflict is real, and of profound importance. The stakes, furthermore, are high; this is a battle for men's souls.

Now it would be excessively naive to think that contemporary science is religiously and theologically neutral, standing serenely above this battle and wholly irrelevant to it. Perhaps *parts* of science are like that: mathematics, for example, and perhaps physics, or parts of physics- although even in these areas there are connections.[7] Other parts are obviously and deeply involved in this battle: and the closer the science in question is to what is distinctively human, the deeper the involvement.

[7] As with the intuitionist and constructivist mathematics, idealistic interpretations of quantum mechanics, and Bell theoretical questions about information transfer violating relativistic constraints on velocity.

To turn to the bit of science in question, the theory of evolution plays a fascinating and crucial role in contemporary Western culture. The enormous controversy about it is what is most striking, a controversy that goes back to Darwin and continues full force today. Evolution is the regular subject of courtroom drama; one such trial-the spectacular Scopes trial of 1925-has been made the subject of an extremely popular film. Fundamentalists regard evolution as the work of the Devil. In academia, on the other hand, it is an idol of the contemporary tribe; it serves as a shibboleth, a litmus test distinguishing the ignorant and bigoted fundamentalist goats front the properly acculturated and scientifically receptive sheep. Apparently this litimus test extends far beyond the confines of this terrestrial globe: according to the Oxford biologist Richard Dawkins, "If superior creatures from space ever visit earth, the first question they will ask, in order to assess the level of our civilization, is: 'Have they discovered evolution yet?... Indeed many of the experts-for example, Dawkins, William Provine, Stephen Gould-display a sort of revulsion at the very idea of special creation by God, as if this idea is not merely not good science, but somehow a bit obscene, or at least unseemly; it borders on the immoral; it is worthy of disdain and contempt. In some circles, confessing to finding evolution attractive will get you disapproval and ostracism and may lose you your job; in others, confessing doubts about evolution will have the same doleful effect. In Darwin's day, some suggested that it was all well and good to discuss evolution in the universities and among the *cognoscenti;* they thought public discussion unwise, however; for it would be a shame if the lower classes found out about it. Now, ironically enough, the 'shoe is sometimes on the other foot; it is [he devotees of evolution who sometimes express the fear that public discussion of doubts and difficulties with evolution could have harmful political effects.[8]

So why all the furor? The answer is obvious: evolution has deep religious connections; deep connections with how we understand ourselves at the most fundamental level. Many evangelicals and fundamentalists see in it a threat to the faith; they don't want it taught to their children, at any rate as scientifically established fact, and they see acceptance of it as corroding proper acceptance of the Bible. On the other side, among the secularists, evolution functions as a *myth,* in a technical sense of that term: a shared way of understanding ourselves at the deep level of religion, a deep interpretation of ourselves to ourselves, a way of telling us why we are here, where we come from, and where we are going.

It was serving in this capacity when Richard Dawkins (according to Peter Medawar, "one of the most brilliant of the rising generation of biologists") leaned over and remarked to A. J. Ayer at one of those elegant, candle-lit, bibulous Oxford dinners that he couldn't imagine being an atheist before 1859 (the year Darwin's *Origin of Species was* published); "although atheism might have been logically tenable before Darwin," said he, "Darwin made it possible to be an intellectually fulfilled atheist." [9] (Let me recommend Dawkins' book to you: it is brilliantly written, unfailingly fascinating, and utterly wrongheaded. It was second on the British best-seller list for some considerable time, second only to Mamie Jenkins' *Hip and Thigh Diet.)* Dawkins goes on:

> All appearances to the contrary, the only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way. A true watchmaker has foresight: he designs his cogs and springs, and plans their

[8] Thus according to Anthony Flew, to suggest that there is real doubt about evolution is to corrupt the youth.

[9] Richard Dawkins, *The Blind Watchmaker* (London and New York: W. W. Norton and Co., 1986), pp. 6 and 7.

> interconnections, with a future purpose in his mind's eye. Natural selection, the blind, unconscious automatic process which Darwin discovered, and which we now know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind. It has no mind and no mind's eye. It does not plan for the future. It has no vision, no foresight, no sight at all. If it can be said to play the role of watchmaker in nature, it is the *blind* watchmaker (p. 5).

Evolution was functioning in that same mythic capacity in the remark of the famous zoologist G. G. Simpson: after posing the question "What is man?" he answers, "The point I want to make now is that all attempts to answer that question before 1859 are worthless and that we will be better off if we ignore them completely." [10] Of course it also functions in that capacity in serving as a litmus test to distinguish the ignorant fundamentalists from the properly enlightened *cognoscenti;* it functions in the same way in many of the debates, in and out of the courts, as to whether it should be taught in the schools, whether other views should be given equal time, and the like. Thus Michael Ruse: "the fight against creationism is a fight for all knowledge, and that battle can be won if we all work to see that Darwinism, which has had a great past, has an even greater future." [11]

The essential point here is really Dawkins' point: Darwinism, the Grand Evolutionary Story, makes it possible to be an intellectually fulfilled atheist. What he means is simple enough. If you are Christian, or a theist of some other kind, you have a ready answer to the question, how did it all happen? How is it that there are all the kinds of floras and faunas we behold; how did they all get here? The answer, of course, is that they have been created by the Lord. But if you are not a believer in God, things are enormously more difficult. How did all these things get here? How did life get started and how did it come to assume its present multifarious forms? It seems monumentally implausible to think these forms just popped into existence; that goes contrary to all our experience. So how did it happen? Atheism and Secularism need an answer to this question. And the Grand Evolutionary Story gives the answer: somehow life arose from nonliving matter by way of purely natural means and in accord with the fundamental laws of physics; and once life started, all the vast profusion of contemporary plant and animal life arose from those early ancestors by way of common descent, driven by random variation and natural selection. I said earlier that we can't automatically identify the deliverances of reason with the teaching of current science because the teaching of current science keeps changing. Here we have another reason for resisting that identification: a good deal more than reason goes into the acceptance of such a theory as the Grand Evolutionary Story. For the nontheist, evolution is the only game in town; it is an essential part of any reasonably complete nontheistic way of thinking; hence the devotion to it, the suggestions that it shouldn't be discussed in public, and the venom, the theological odium with which dissent is greeted.

B. The Likelihood of Evolution

Of course the fact that evolution makes it possible to be a fulfilled atheist doesn't show either that the theory isn't true or that there isn't powerful evidence for it. Well then, how likely is it that this theory is true? Suppose we think about the question from an explicitly theistic and Christian

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[10] Quoted in Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, *1976), p. 1,*

[11] *Darwinism Defended,* pp. *326-327.*

perspective; but suppose we temporarily set to one side the evidence, whatever. exactly it is, from early Genesis. From this perspective, how good is the evidence for the theory of evolution?

The first thing to see is that a number of *different* large-scale claims fall under this general rubric of evolution. First, there is the claim that the earth is very old, perhaps some 4.5 billion years old: The *Ancient Earth Thesis,* as we may call it. Second, there is the claim that life has progressed from relatively simple to relatively complex forms of life. In the beginning there was relatively simple unicellular life, perhaps of the sort represented by bacteria and blue green algae, or perhaps still simpler unknown forms of life. (Although bacteria are simple compared to some other living beings, they are in fact enormously complex creatures.) Then more complex unicellular life, then relatively simple multicellular life such as seagoing worms, coral, and jelly fish, then fish, then amphibia, then reptiles, birds, mammals, and finally, as the culmination of the whole process, human beings: the *Progress Thesis,* as we humans may like to call it (jelly fish might have a different view as to where to whole process culminates). Third, there is the *Common Ancestry Thesis:* that life originated at only one place on earth, all subsequent life being related by descent to those original living creatures-the claim that, as Stephen Could puts it, there is a "tree of evolutionary descent linking all organisms by ties of genealogy." [12] According to the Common Ancestry Thesis, we are literally cousins of all living things-horses, oak trees and even poison ivy-distant cousins, no doubt, but still cousins. (This is much easier to imagine for some of us than for others.) Fourth, there is the claim that there is a (naturalistic) *explanation* of this development of fife from simple to complex forms; call this thesis *Darwinism,* because according to the most popular and well-known suggestions, the evolutionary mechanism would be natural selection operating on random genetic mutation (due to copy error or ultra violet radiation or other causes); and this is similar to Darwin's proposals. Finally, there is the claim that life itself developed from non-living matter without any special creative activity of God but just by virtue of the ordinary laws of physics and chemistry: call this the *Naturalistic Origins Thesis.* These five theses are of course importantly different from each other. They are also logically independent in pairs, except for the third and fourth theses: the fourth entails the third, in that you can't sensibly propose a mechanism or an explanation for evolution without agreeing that evolution has indeed occurred. The combination of all five of these theses is what I have been calling 'The Grand Evolutionary Story'; the Common Ancestry Thesis together with Darwinism (remember, Darwinism isn't the view that the mechanism driving evolution is just what Darwin says it is) is what one most naturally thinks of as the Theory of Evolution.

So how shall we think of these five theses? First, let me remind you once more that I am no expert in this area. And second, let me say that, as I see it, the empirical or scientific evidence for these five different claims differs enormously in quality and quantity. There is excellent evidence for an ancient earth: a whole series of interlocking different kinds of evidence, some of which is marshaled by Howard van Till in *The Fourth Day.* Given the strength of this evidence, one would need powerful evidence on the other side-from Scriptural considerations, say in order to hold sensibly that the earth is young. There is less evidence, but still good evidence in the fossil record for the Progress Thesis, the claim that there were bacteria before fish, fish before reptiles, reptiles before mammals, and mice before men (or wombats before women, for the feminists in the crowd). The third and fourth theses, the Common Ancestry and Darwinian These, are what is

[12] "Evolution as Fact and Theory" in *Hen's Teeth and Horse's Toes* (New York Norton, 1983).

commonly and popularly identified with evolution; I shall return to them in a moment**.** The fourth thesis, of course, is no more likely than the third, since it includes the third and proposes a mechanism to account for it. Finally, there is the fifth thesis, 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.[13]

Now return to evolution more narrowly so-called: the Common Ancestry Thesis and the Darwinian Thesis. Contemporary intellectual orthodoxy is summarized by the 1979 edition of the *New Encyclopedia Britannica,* according to which "evolution is accepted by all biologists and natural selection is recognized as its cause.... Objections ... have come from theological and, for a time, from political standpoints" (Vol. 7). It goes on to add that "Darwin did two things; he showed that evolution was in fact contradicting Scriptural legends of creation and that its cause, natural selection, was automatic, with no room for divine guidance or design." According to most of the experts, furthermore, evolution, taken as the Thesis of Common Ancestry, is not something about which there can be sensible difference of opinion. Here is a random selection of claims of certainty on the part of the experts. Evolution is certain, says Francisco J. Ayala, as certain as "the roundness of the earth, the motions of the planets, and the molecular constitution of matter." [14] According to Stephen J. Gould, evolution is an established fact, not a mere theory; and no sensible person who was acquainted with the evidence could demur.[15] According to Richard Dawkins, the theory of evolution is as certainly true as that the earth goes around the sun. This comparison with Copernicus apparently suggests itself to many; according to Philip Spieth, "A century and a quarter after the publication of the Origin of Species, biologists can say with confidence that universal genealogical relatedness is a conclusion of science that is as firmly established as the revolution of the earth about the sun." [16] Michael Ruse, trumpets, or perhaps screams, that "evolution is Fact, FACT, **FACT!"** If you venture to suggest doubts about evolution, you are likely to be called ignorant or stupid or worse. In fact this isn't merely *likely; you* have already been so-called: in a recent review in the *New York Times,* Richard Dawkins claims that "It is absolutely safe to say that if you meet someone who claims not to believe in evolution, that person is ignorant, stupid or insane (or wicked, but I'd rather not consider that)."

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[13] Let me refer you to the following books: *The Mystery of Life's Origins,* by Charles Thaxton", Walter Bradley and Roger Olsen; *Origins,* by Robert Shapiro, *Evolution, Thermodynamics, and Information: Extending the Darwinian Program,* by Jeffrey S. Wicken, *Seven Clues to the Origin of Life* and Genetic Takeover and the Mineral Origins of Life, by A. G. Cairns-Smith, and *Origins of Life,* by Freeman Dyson; see also the relevant chapters of Michael Denton, *Evolution: A Theory in Crisis* (Further publication data on these books, if desired, is to be found in the bibliography). The authors of the first book believe that God created life specially, the authors of the others do not.

[14] "The Theory of Evolution: Recent Successes and Challenges," in *Evolution and Creation*, ed. Eman McMullin (Notre Dame: University of Notre Dame Press, 1985), p. 60.

[15] "Evolution as Fact and Theory" in *Hen's Teeth and* Horse's Toes (New York: W. W. Norton and Company, 1980), pp. 254-55.

[16] "Evolutionary Biology and the Study of Human Nature," presented at a consultation on Cosmology and Theology sponsored by the Presbyterian (USA) Church in Dec. 1987.

(Dawkins indulgently adds that "You are probably not stupid, insane or wicked, and ignorance is not a crime....")

Well then, how should a serious Christian think about the Common Ancestry and Darwinian Theses? The first and most obvious thing, of course is that a Christian holds that all plants and animals, past as well as present, have been created by the Lord. Now suppose we set to one side what we take to be the best understanding of early Genesis. Then the next thing to see is that God could have accomplished this creating in a thousand different ways. It was entirely within his power to create life in a way corresponding to the Grand Evolutionary scenario: it was within his power to create matter and energy, as in the Big Bang, together with laws for its behavior, in such a way that the outcome would be first, life's coming into existence three or four billion years ago, and then the various higher forms of life, culminating, as we like to think, in humankind. This is a *semi*deistic view of God and his workings: he starts everything off and sits back to watch it develop. (One who held this view could also hold that God constantly sustains the world in existence-hence the view is only *semi*deistic-and even that any given causal transaction in the universe requires specific divine concurrent activity.)[17] On the other hand, of course, God could have done things very differently. He has created matter and energy with their tendencies to behave in certain ways-ways summed up in the laws of physics-but perhaps these laws are not such that given enough time, life would automatically arise. Perhaps he did something different and special in the creation of life. Perhaps he did something different and special in creating the various kinds of animals and plants. Perhaps he did something different and special in the creation of human beings. Perhaps in these cases his action with respect to what he has created was different from the ways in which he ordinarily treats them.

How shall we decide which of these is initially the more likely? That is not an easy question. It is important to remember, however, that the Lord has not merely left the Cosmos to develop according to an initial creation and an initial set of physical laws. According to Scripture, he has often intervened in the working of his cosmos. This isn't a good way of putting the matter (because of its deistic suggestions); it is better to say that he has often treated what he has created in a way different from the way in which he ordinarily treats it. There are miracles reported in Scripture, for example; and, towering above all, there is the unthinkable gift of salvation for humankind by way of the life, death, and resurrection of Jesus Christ, his son. According to Scripture, God has often treated what he has made in a way different from the way in which he ordinarily treats it; there is therefore no initial edge to the idea that he would be more likely to have created life in all its variety in the broadly deistic way. In fact it looks to me as if there is an initial probability on the other side; it is a bit more probable, before we look at the scientific evidence, that the Lord created life and some of its forms-in particular, human life-specially.

From this perspective, then, how shall we evaluate the evidence for evolution? Despite the claims of Ayala, Dawkins, Gould, Simpson and the other experts, I think the evidence here has to be rated as ambiguous and inconclusive. The two hypotheses to be compared are (1) the claim that God has created us in such a way that (a) all of contemporary plants and animals are related

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[17] The issues here are complicated and subtle and I can't go into them; instead I should like to recommend my colleague Alfred Freddoso's powerful piece, "Medieval Aristotelianism and the Case Against Secondary Causation in Nature," in *Divine and Human Action*, edited by Thomas Morris (Ithaca: Cornell University Press, 1988).

by common ancestry, and (b) the mechanism driving evolution is natural selection working on random genetic variation and (2) the claim that God created mankind as well as many kinds of plants and animals separately and specially, in such a way that the thesis of common ancestry is false. Which of these is the more probable, given the empirical evidence and the theistic context? I think the second, the special creation thesis, is somewhat more probable with respect to the evidence (given theism) than the first.

There isn't the space, here, for more than the merest hand waving with respect to marshalling and evaluating the evidence. But according to Stephen Jay Gould, certainly a leading contemporary spokesman,

> Our confidence that evolution occurred centers upon three general arguments. First, we have abundant, direct observational evidence of evolution in action, from both field and laboratory. This evidence ranges from countless experiments on change in nearly everything about fruit flies subjected to artificial selection in the laboratory to the famous populations of British moths that became black when industrial soot darkened the trees upon which the moths rest .... [18]

Second, Gould mentions homologies: "Why should a rat run, a bat fly, a porpoise swim, and I type this essay with structures built of the same bones," he asks, "unless we all inherited them from a common ancestor?" Third, he says, there is the fossil record:

> Transitions are often found in the fossil record. Preserved transitions are not common... but they are not entirely wanting.... For that matter, what better transitional form could we expect to find than the oldest human, Australopithecus afrarensis, with its apelike palite, its human upright stance, and a cranial capacity larger than any ape's of the same body size but a full 1000 cubic centimeters below ours? If God made each of the half-dozen human species discovered in ancient rocks, why did he create in an unbroken temporal sequence of progressively more modem features, increasing cranial capacity, reduced face and teeth, larger body size? Did he create to mimic evolution and test our faith thereby? [19]

Here we could add a couple of other commonly cited kinds of evidence: (a) we along with other animals display vestigial organs (appendix, coccyx, muscles that move ears and nose); it is suggested that the best explanation is evolution. (b) There is alleged evidence from biochemistry: according to the authors of a popular college textbook, "All organisms ... employ DNA, and most use the citric acid cycle, cytochromes, and so forth. It seems inconceivable that the biochemistry of living things would be so similar if all life did not develop from a single common ancestral group." [20] There is also (c) the fact that human embryos during their development display some of the characteristics of simpler forms of life (for example, at a certain stage they display gill-like structures). Finally, (d) there is the fact that certain patterns of geographical distribution-that there are orchids and alligators only in the American south and in China, for example-are susceptible to a nice evolutionary explanation.

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[18] *op. cit.*, p. 257.

[19] *op. cit.*, pp. 258-259.

[20] Claude A. Villee, Eldra Pearl Solomon, P. William Davis, Biology, Saunders College Publishing 1985, p. 1012. Similarly, Mark Ridley *(The Problems of Evolution* (Oxford: Oxford University Press, 1985*)* takes the fact that the genetic code is universal across all forms of life as proof that life originated only once; it would be extremely improbable that life should have stumbled upon the same code more than once.

Suppose we briefly consider the last four first. 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 probably on the hypothesis of special creation, hence not much by way of evidence against it, hence not much by way of evidence for evolution.

Turning to the evidence Gould develops, it too is suggestive, but far from conclusive; some of it, furthermore, is seriously flawed. First, those famous British moths didn't produce a new species; there were both dark and light moths around before, the dark ones coming to predominate when the industrial revolution deposited a layer of soot on trees, making the light moths more visible to predators. More broadly, while there is wide agreement that there is such a thing as microevolution, the question is whether we can extrapolate to macroevolution, with the claim that enough microevolution can account for the enormous differences between, say, bacteria and human beings. There is some experiential reason to think not; there seems to be a sort of envelope of limited variability surrounding a species and its near relatives. Artificial selection can produce several different kinds of fruit flies and several different kinds of dogs, but, starting with fruit flies, what it produces is only more fruit flies. As plants or animals are bred in certain direction, a sort of barrier is encountered; further selective breeding brings about sterility or a reversion to earlier forms. Partisans of evolution suggest that, in nature, genetic mutation of one sort or another can appropriately augment the reservoir of genetic variation. That it can do so sufficiently, however, is not known; and the assertion that it does is a sort of Ptolemaic epicycle attaching to the theory.

Next, there is the argument from the fossil record; but as Gould himself points out, the fossil record shows very few transitional forms. "The extreme rarity of transitional forms in the fossil record," he says, "persists as the trade secret of paleontology. The evolutionary trees that adorn our textbooks have data only at the tips and nodes of their branches; the rest is inference, however reasonable, not the evidence of fossils." [21] Nearly all species appear for the first time in the fossil record fully formed, without the vast chains of intermediary forms evolution would suggest. Gradualistic evolutionists claim that the fossil record is woefully incomplete. Gould, Eldredge and others have a different response to this difficulty: punctuated equilibriumism, according to which long periods of evolutionary stasis are interrupted by relatively brief periods of very rapid evolution. This response helps the theory accommodate some of the fossil data, but at the cost of another Ptolemaic epicycle.[22] And still more epicycles are required to account for puzzling discoveries in molecular biology during the last twenty years.[23] And as for the argument from homologies, this too is suggestive, but far from decisive. First, there are of course many

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[21] *The* Panda's *Thumb* (New York. 1980), p. 181. According to George Gaylord Simpson *(1953):* "Nearly all categories above the level of families appear in the record suddenly and are not led up to by known, gradual, completely continuous transitional sequences."

[22] And even so it helps much less than you might think. It does offer an explanation *of* the absence of fossil forms intermediate with respect to closely related or adjoining species; the real problem, though, is what Simpson refers to in the quote in the previous footnote: the fact that nearly all categories above the level of families appear in the record suddenly, without the gradual and continuous sequences we should expect. Punctuated equilibriumism does nothing to explain the nearly complete absence, in the fossil record, of intermediates between such major divisions as, say, reptiles and birds, or fish and reptiles, or reptiles and mammals.

[23] Here see Michael Denton, *Evolution: A Theory* in Crisis (London: Burnet Books, *1985),* chapter 12.

examples of architectural similarity that are not attributed to common ancestry, as in the case of the Tasmanian wolf and the European wolf; the anatomical givens are by no means conclusive proof of common ancestry. And secondly, God created several different kinds of animals; what would prevent him from using similar structures?

But perhaps the most important difficulty lies in a slightly different direction. Consider the mammalian eye: a marvelous and highly complex instrument, resembling a telescope of the highest quality, with a lens, an adjustable focus, a variable diaphragm for controlling the amount of and optical corrections for spherical and chromatic aberration. And here is the problem: how does the lens, for example, get developed by the proposed means-random genetic variation and natural selection-when at the same time there has to be development of the optic nerve, the relevant muscles, the retina, the rods and cones, and many other delicate and complicated structures, all of which have to be adjusted to each other in such a way that they can work together? Indeed, what is involved isn't, of course, just the eye; it is the whole visual system, including the relevant parts of the brain. Many different organs and suborgans have to be developed together, and it is hard to envisage a series of mutations which is such that each member of the series has adaptive value, is also a step on the way to the eye, and is such that the last member is an animal with such an eye.

We can consider the problem a bit more abstractly. Think of a sort of space, in which the points are organic forms (possible organisms) and in which neighboring forms are so related that one could have originated from the other with some minimum probability by way of random genetic mutation. Imagine starting with a population of animals without eyes, and trace through the space in question all the paths that lead from this form to forms with eyes. The chief problem is that the vast majority of these paths contain long sections with adjacent points such that there would be no adaptive advantage in going from one point to the next, so that, on Darwinian assumptions, none of them could be the path in fact taken. How could the eye have evolved in this way, so that each point on its path through that space would be adaptive and a step on the way to the eye? (Perhaps it is possible that some of these sections could be traversed by way of steps that were not adaptive and were fixed by genetic drift; but the probability of the population's crossing such stretches will be much less than that of its crossing a similar stretch where natural selection is operative.) Darwin himself wrote, "To suppose that the eye, with all its inimitable contrivances ... could have been formed by natural selection seems absurd in the highest degree." "When I think of the eye, I shudder" he said (3-4). And the complexity of the eye is enormously greater than was known in Darwin's time.

We are never, of course, given the actual explanation of the evolution of the eye, the actual evolutionary history of the eye (or brain or hand or whatever). That would take the form: in that original population of eyeless life forms, genes A,-A_n mutated (due to some perhaps unspecified cause), leading to some structural and functional change which was adaptively beneficial; the bearers of A,-A_n thus had an advantage and came to dominate the population. Then genes B,-B_n mutated in an individual or two, and the same thing happened again; then gene C,-C_n.. etc. Nor are we even given any possibilities of these sorts. (We couldn't be, since, for most genes, we don't know enough about their functions.) We are instead treated to broad brush scenarios at the macroscopic level: perhaps reptiles gradually developed feathers, and wings, and warm-bloodedness, and the other features of birds. We are given possible evolutionary histories, not of

the detailed genetic sort mentioned above, but broad macroscopic scenarios: what Gould calls "just-so stories."

And the real problem is that we don't know how to evaluate these suggestions. To know how to do *that* (in the case of the eye, say), we should have to start with some population of animals without eyes; and then we should have to know the rate at which mutations occur for that population; the proportion of those mutations that are on one of those paths through that space to the condition of having eyes; the proportion of *those* that are adaptive, and, at each stage, given the sort of environment enjoyed by the organisms at that stage, the rate at which such adaptive modifications would have spread through the population in question. Then we'd have to compare our results with the time available to evaluate the probability of the suggestion in question. But we don't know what these rates and proportions are. No doubt we *can't* know what they are, given the scarcity of operable time-machines; still, the fact is we don't know them. And hence we don't really know whether evolution is so much as biologically possible: maybe there is no path through that space. It is *epistemically* possible that evolution has occurred: that is, we don't know that it hasn't; for all we know, it has. But it doesn't follow that it is *biologically* possible. (Whether every even number is the sum of two primes is an open question; hence it is epistemically possible that every even number is the sum of two primes, and also epistemically possible that some even numbers are not the sum of two primes; but one or the other of those epistemic possibilities is in fact mathematically impossible.) Assuming that it is biologically possible, furthermore, we don't know that it is not prohibitively improbable (in the statistical sense), given the time available. But then (given the Christian faith and leaving to one side our evaluation of the evidence from early Genesis) the right attitude towards the claim of universal common descent is, I think, one of a certain interested but wary skepticism. It is *possible* (epistemically possible) that this is how things happened; God could have done it that way; but the evidence is ambiguous. That it is *possible is* clear; that it *happened is* doubtful; that it is *certain,* however, is ridiculous.

But then what about all those exuberant cries of certainty from Gould, Ayala, Dawkins, Simpson and the other experts? What about those claims that evolution, universal common ancestry, is a rock-ribbed certainty, to be compared with the fact that the earth is round and goes around the sun? What we have here is at best enormous exaggeration. But then what accounts for the fact that these claims are made by such intelligent luminaries as the above? There are at least two reasons. First, there is the cultural and religious, the mythic function of the doctrine; evolution helps make it possible to be an intellectually fulfilled atheist. From a naturalistic point of view, this is the only answer in sight to the question "How did it all happen? How did all this amazing profusion of life get here?" From a nontheistic point of view, the evolutionary hypothesis is the only game in town. According to the thesis of universal common descent, life arose in just one place; then there was constant development by way of evolutionary mechanisms from that time to the present, this resulting in the profusion of life we presently see. On the alternative hypothesis, different forms of life arose independently of each other; on that suggestion there would be many different genetic trees, the creatures adorning one of these trees genetically unrelated to those on another. From a nontheistic perspective, the first hypothesis will be by far the more probable, if only because of the extraordinary difficulty in seeing how life could arise even once by any ordinary mechanisms which operate today. That it should arise many different times and at different levels of complexity in this way, is quite incredible. From a naturalist

perspective, furthermore, many of the arguments for evolution are much more powerful than from a theistic perspective. (For example, *given* that life arose naturalistically, it is indeed significant that all life employs the same genetic code.) So from a naturalistic, nontheistic perspective the evolutionary hypothesis will be vastly more probable than alternatives. Many leaders in the field of evolutionary biologists, or course, *are* naturalists-Gould, Dawkins, and Stabbings, for example; and according to William Provine, "very few truly religious evolutionary biologists remain. Most are atheists, and many have been driven there by their understanding of the evolutionary process and other science." [24] If Provine is right or nearly right, it becomes easier to see why we hear this insistence that the evolutionary hypothesis is certain. It is also easy to see how this attitude is passed on to graduate students, and, indeed, how accepting the view that evolution is certain is itself adaptive for life in graduate school and academia generally.

There is a second and related circumstance at work here. We are sometimes told that natural science is *natural* science. So far it is hard to object: but how shall we take the term 'natural' here? It could mean that natural science is science devoted to the study of nature. Fair enough. But it is also taken to mean that natural science involves a *methodological naturalism* or provisional atheism: [25] no hypothesis according to which God has done this or that can qualify as a *scientific* hypothesis. It would be interesting to look into this matter: is there really any compelling or even decent reason for thus restricting our study of nature? But suppose we irenically concede, for the moment, that natural science doesn't or shouldn't invoke hypotheses essentially involving God. Suppose we restrict our explanatory materials to the ordinary laws of physics and chemistry; suppose we reject divine special creation or other hypotheses about God as *scientific* hypotheses. Perhaps indeed the Lord has engaged in special creation, so we say, but that he has (if he has) is not something with which natural science can deal. So far as natural science goes, therefore, an acceptable hypothesis must appeal only to the laws that govern the ordinary, day-to-day working of the cosmos. As natural scientists we must eschew the supernatural-although, of course, we don't mean for a moment to embrace naturalism.

Well, suppose we adopt this attitude. Then perhaps it looks as if by far the most probable of all the properly scientific hypotheses is that of evolution by common ancestry: it is hard to think of any other real possibility. The only alternatives, apparently, would be creatures popping into existence fully formed; and that is wholly contrary to our experience. Of all the scientifically acceptable explanatory hypotheses, therefore, evolution seems by far the most probable. But if this hypothesis is vastly more probable than any of its rivals, then it must be certain, or nearly so.

But to reason this way is to fall into confusion compounded. In the first place, we aren't just given that one or another of these hypotheses is in fact correct. Granted: if we *knew* that one or another of those scientifically acceptable hypotheses were in fact correct, then perhaps this one would be certain; but of course we don't know that. One real possibility is that we don't have a very good idea how it all happened, just as we may not have a very good idea as to what terrorist organization has perpetrated a particular bombing. And secondly, this reasoning involves a confusion between the claim that of all of those *scientifically* acceptable hypotheses, that of

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[24] *op. cit.,* p. 28.

[25] "Science must be provisionally atheistic or cease to be itself." Basil Whiley "Darwin's Place in the History of Thought" in M. Banton, ed., *Darwinism and the Study of Society* (Chicago: Quadrangle Books, 1961).

common ancestry is by far the most plausible, with the vastly more contentious claim that of all the acceptable hypotheses *whatever* (now placing no restrictions on their kind) this hypothesis is by far the most probable. Christians in particular ought to be alive to the vast difference between these claims; confounding them leads to nothing but confusion.

From a Christian perspective, it is dubious, with respect to our present evidence, that the Common Ancestry Thesis is true. No doubt there has been much by way of microevolution: Ridley's gulls are an interesting and dramatic case in point. But it isn't particularly likely, given the Christian faith and the biological evidence, that God created all the flora and fauna by way of some mechanism involving common ancestry. My main point, however, is that Avala, Gould, Simpson, Stebbins and their coterie are wildly mistaken in claiming that the Grand Evolutionary Hypothesis is *certain.* And hence the source of this claim has to be looked for elsewhere than in sober scientific evidence.

So it could be that the best scientific hypothesis was evolution by common descent-i.e., of all the hypotheses that conform to methodological naturalism, it is the best. But of course what we really want to know is not which hypothesis is the best from some artificially adopted standpoint of naturalism, but what the best hypothesis is *overall*. We want to know what the *best* hypothesis is, not which of some limited class; is best-particularly if the class in question specifically excludes what we hold to be the basic truth of the matter. It could be that the best scientific hypothesis (again supposing that a scientific hypothesis must be naturalistic in the above sense) isn't even a strong competitor in *that* derby.

Judgements here, of course, may differ widely between believer in God and non-believers in God. What for the former is at best a methodological restriction is for the latter the sober metaphysical truth: her naturalism is not merely provisional and methodological, but, as she sees it, settled and fundamental. But believers in God see the matter differently. The believer in God, unlike her naturalistic counterpart, is free to look at the evidence for the Grand Evolutionary Scheme and follows it where it leads, revising that scheme if the evidence is insufficient. She has a freedom not available to the naturalist. The latter accepts the Grand Evolutionary Scheme because from a naturalistic point of view this scheme is the only visible answer to the question *what is the explanation of the presence of all these marvelously multifarious forms of life?* The Christian, on the other hand, knows that creation is the Lord's; and she isn't blinkered by *a priori* dogmas as to how the Lord must have accomplished it. Perhaps it was by broadly evolutionary means, but then again perhaps not. At the moment, 'perhaps not' seems the better answer.

Returning to methodological naturalism, if indeed natural science is essentially restricted in this way, if such a restriction is a part of the very essence of science, then what we need here, of course, is not natural science, but a broader inquiry that can include *all* that we know, including the truths that God has created life on earth and could have done it in many different ways. "Unnatural Science," "Creation Science," "Theistic Science"-call it what you will: what we need when we want to know how to think about the origin and development of contemporary life is what is most plausible from a Christian point of view. What we need is a scientific account of life that isn't restricted by that methodological naturalism.

C. What Should Christian Intellectuals Tell the Rest of Us

Alternatively, how can Christian intellectuals-scientists, philosophers, historians, literary and art critics, Christian thinkers of every sort-how can they best serve the Christian community in an area like this? How can they-and since we are they, how can we-best serve the Christian community, the Reformed community of which we are a part, and, more importantly, the broader general Christian community? One thing our experts can do for us is help us avoid rejecting evolution for stupid reasons. The early literature of Creation -Science, so called, is littered with arguments of that eminently rejectable sort. Here is such an argument. Considering the rate of human population growth over the last few centuries, the author points out that even on a most conservative estimate the human population of the earth doubles at least every 1000 years. Then if, as evolutionists claim, the first humans existed at least a million years ago, by now the human population would have doubled 1000 times. It seems hard to see how there could have been fewer than two original human beings, so at that rate, by the inexorable laws of mathematics, after only 60,000 years or so, there would have been something like 36 quintillion people, and by now there would have to be 2^{1000} human beings. 2^{1000} is a large number. It is more than 10^{300} with 300 zeros after it if there were that many of us the whole universe would be packed with us. Since, clearly, it isn't, human beings couldn't have existed fro as long as a million years; so the evolutionists are wrong. This is clearly a lousy argument; I leave as homework the problem of saying just where it goes wrong. There are many other bad arguments about evolution floating around and it is worth our while to learn that these arguments are indeed bad. We shouldn't reject contemporary science unless we have to and we shouldn't reject it for the wrong reasons. It is good thing for our scientists to point out some of these wrong reasons.

But I'd like to suggest, with all the diffidence I can muster, that there is something better to do here-or at any rate something that should be done in addition to this. And the essence of the matter is fairly simple, despite the daunting complexity that arises when we descend to the nitty-gritty level where the real work has to be done. The first thing to see, as I said before, is that Christianity is indeed engaged in a conflict, a battle. There is indeed a battle between the Christian community and the forces of unbelief. This contest rages in many areas of contemporary culture-the courts and in the so-called media-but perhaps most particularly in academia. And the second thing to see is that important cultural forces such as science are not neutral with respect to this conflict-though of course certain parts of contemporary science and many contemporary scientists might very well be. It is of the first importance that we discern in detail just how contemporary science-and contemporary history, literary criticism and so on-is involved in the struggle. This is a complicated many-sided matter; it varies from discipline to discipline, and from area to area within a given discipline. One of our chief tasks, therefore, must be that of cultural criticism. We must test the spirits, not automatically welcome them in because of their great academic prestige. Academic prestige, wide, even nearly unanimous acceptance in academia, declarations of certainty by important scientists-none of these is a guarantee that what is proposed is true, or a genuine deliverance of reason, or plausible from a theistic point of view. Indeed, none is a guarantee that what is proposed is not animated by a spirit wholly antithetical to Christianity. We must discern the religious and ideological connections; we can't automatically take the word of the experts, because their word might be dead wrong from [*text is missing in source file*]

Finally, in all the areas of academic endeavor, we Christians must think about the matter at hand from a Christian perspective; we need Theistic Science. Perhaps the discipline in question, as ordinarily practiced, involves a methodological naturalism; if so, then what we need, finally, is not answers to our questions from that perspective, valuable in some ways as it may be. What we really need are answers to our questions from the perspective of all that we know-what we about God, and what we know by faith, by way of revelation, as well as know in other ways. In many areas, this means that Christians must rework the area in question from this perspective. This idea may be shocking but it is not new. Reformed Christians have long recognized that science and scholarship are by no means religiously neutral. In a way this is our distinctive thread in the tapestry of Christianity, our instrument in the great symphony Christianity. This recognition underlay the establishment of the Free University of Amsterdam in 1880; it also underlay the establishment of Calvin College. Our forebears recognized the need for the sort of work and inquiry I've been mentioned to do something about it. What we need from our scientists and other academics, then, is both cultural criticism and Christian science.

We must admit, however, that it is our *lack* of real progress that is striking. Of course there are good reasons for this. To carry out this task with the depth, the course of competence it requires is, first of all, enormously difficult. However, it is not just the *difficulty* of this enterprise that accounts for our lackluster performance. Just as important is a whole set of historical or sociological conditions. You may have noticed that at present the Western Christian community isolated in the twentieth-century Western world. We Christians who go on to become professional scientists and scholars attend twentieth-century graduate schools and universities. And questions about the bearing of Christianity on these disciplines and the questions within them do not enjoy much by way of prestige and esteem in these universities. There are no courses at Harvard entitled "Molecular Biology and the Christian View of Man." At Oxford they don't teach a course called "Origins of Life from a Christian Perspective." One can't write his Ph.D. thesis on these subjects. The National Science Foundation won't look favorably on them. Working on these questions is not a good way to get tenure at a typical university; and if you are job hunting you would be ill-advised to advertise yourself as proposing to specialize in them. The entire structure of contemporary university life is such as to discourage serious work on these questions.

This is therefore a matter of uncommon difficulty. So far as I know, however, no one in authority has promised us a rose garden; and it is also a matter of absolutely crucial importance to the health of the Christian community. It is worthy of the very best we can muster; it demands powerful, patient, unstinting and tireless effort. But its rewards match its demands; it is exciting, absorbing and crucially important. Most of all, however, it needs to be done. I therefore commend it to you.

Brief Bibliography

Avala, Francis, "The Theory, of Evolution: Recent Successes and Challenges," in *Evolution and Creation,* ed. Ernan McMullin (Notre Dame: University of Notre Dame Press, 1985).

Cairns-Smith, A. *G., Genetic Takeover and the Mineral Origins of Life* (Cambridge: Cambridge University Press, 1982); *Seven Clues to the Origin of Life* (Cambridge: Cambridge University Press, 1985).

Darwin, Charles, *The Origin of Species.* (1859)

Dawkins, Richard, *The Blind Watchmaker* (London and New York: W. W. Norton and Co., 1986); *The Selfish Gene* (Oxford: Oxford University Press, 1976).

Denton, Michael, *Evolution: A Theory in Crisis* (London: Burnet Books, 1985).

Dyson, Freeman, *Origins of Life* (Cambridge: Cambridge University Press, 1985).

Eldredge, Niles, *Time Frames* (New York. Simon And Schuster, 1985).

Freddoso, Alfred, "Medieval Aristotelianism and the Case Against Secondary Causation in Nature," in *Divine and Human Action,* edited by, Thomas Morris (Ithaca: Cornell University Press, 1988).

Gould, Stephen J., "Evolution as Fact and Theory," in *Hen's Teeth and Horse'; Toes* (New York. Norton, 1983).

Hawking, Stephen, *A Brief History of Time* (New York: Bantam Books, 1988).

Kitcher, Philip, *Vaulting Ambition* (Cambridge: MIT Press, 1985).

Johnson, Philip, *Science and Scientific Naturalism in the Evolution Controversy.* Unpublished manuscript.

MacKay, Donald, *The Clockwork Image: A Christian Perspective on Science* (London: Intervarsity Press, 1974); ", Complementarity' in Scientific and Theological Thinking" in *Zygon,* Sept.1974, pp. 225 ff.

Neill, Stephen, *Anglicanism* (Penguin, 1958).

Ridley, Mark, *The Problems of Evolution* (Oxford: OUP, 1985).

Ruse, Michael, *Darwinism Defended* (Reading, Mass.: Addison-Wesley Publishing Co., 1982).

Shapiro, Robert, *Origins* (New York: Summit Books, 1986).

Simpson, George Gaylord, *Fossil and the History of Life* (New York: Scientific American Books and W. H. Freeman and Co.), 1983); -*The Major Features of Evolution* (New York: Columbia University Press, 1953); -*The Meaning of Evolution* (New Haven: Yale University Press, 1949); *This View of Life* (New York: Harcourt Brace and World, 1964).

Spieth, Philip, "Evolutionary Biology and the Study of Human Nature," presented at a consultation on Cosmology and Theology sponsored by the Presbyterian (USA) Church in Dec., 1987.

Stanley, Steven, *The New Evolutionary Timetable* (New York: Basic Books, 1981).

Stebbins, G. Ledyard, *Darwin To DNA, Molecules to Humanity* (San Francisco: W. H. Freeman and Co., 1982).

Thaxton, Charles, Walter Bradley, and Roger Olsen, *The Mystery of Life's Origins* (New York: Philosophical Library, 1984).

van Fraassen, Bas, *The Scientific Image* (Oxford: Clarendon Press; New York: Oxford University Press, 1980).

Van Till, Howard, *The Fourth Day: What the Bible and the Heavens are Telling Us About the Creation* (Grand Rapids: W. B. Eerdmans, 1986).

Villee, Claude A., Eldra Pearl Solomon, and P. William Davis, *Biology* (Philadelphia: Saunders College Publishing, 1985).

Wicken, Jeffrey S., *Evolution, Thermodynamics, and Information: Extending the Darwinian Program* (New York: Oxford University Press, 1987).

Willey, Basil, "Darwin's Place in the History of Thought" in M. Banton, (ed) *Darwinism and the Study of Society* (London: Tavistock Publication, and Chicago: Quadrangle Books, 1961).

William Hasker's Response to Plantinga

Evolution and Alvin Plantinga

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When a contribution to the creation-evolution debate comes from one of the world's leading Christian philosophers, attention must be paid. Such a contribution is Alvin Plantinga's "When Faith and Reason Clash: Evolution and the Bible," which appeared in the September 1991 issue of the Christian Scholar's Review. *Some valuable initial responses to Plantinga's argument have come in the form of comments by Howard Van Till and Ernan McMullin, which were published along with Plantinga's article. Plantinga's reply to McMullin and Van Till, however, changes the situation by opening up aspects of his position which were not clear from the initial paper,[1] so it is necessary for the discussion to continue.*

My procedure will be as follows: I shall begin with a brief sketch of Plantinga's position, as set out in his original article, followed by a preliminary assessment. I shall then take up in some detail three aspects of Plantinga's position, the first dealing with the general significance of the controversy in the current intellectual climate, and the other two with Plantinga's handling of certain aspects of the evidence in the case. I conclude with an assessment of Plantinga's proposal for the inauguration of a "theistic science" which for Christians would provide an alternative to the methodologically naturalistic science [2] which is now espoused by virtually all scientists, whether they be theists, naturalists, or agnostics

I. Summary of Plantinga's Position

Plantinga begins by asking how Christians should address apparent conflicts between faith and reason, such as those between the Bible and the teachings of science. He reviews and dismisses several views (including MacKay's "complementarity") according to which no conflict between science and Scripture is really possible. When a conflict does emerge, he tells us, we should not always assume that science is correct, so that our interpretation of Scripture must be altered, but

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[1] Alvin Plantinga, "When Faith and Reason Clash: Evolution and the Bible," pp. 8-33; Howard Van Till, "When Faith and Reason Cooperate," pp. 33-45; Pattle Pun, "Response to Professor Plantinga," pp. 46-54; Ernan McMullin, "Plantinga's Defense of Special Creation," pp. 55-79; and Alvin Plantinga, "Evolution, Neutrality, and Antecedent Probability: A Reply to McMullin and Van Till," pp. 80-109; all in *Christian Scholar's Review* XXI:1 (September 1991); page references in the text are to this material. I will draw upon a number of points made by Van Till and McMullin, but will not be giving a complete account either of their responses or of Plantinga's reply to them. Pattle Pun's paper, unfortunately, suffers a fate which comes frequently to comments which do not generate major disagreements; Plantinga acknowledges it with enthusiasm, but it is not picked up in the subsequent discussion and will not be pursued here.

[2] "Methodological naturalism" will be understood to mean that only natural objects and forces can be referred to in scientific explanations.

neither should we invariably assume that our interpretation of Scripture is correct and our science is in error. There is no general recipe or formula for the resolution of such conflicts; rather, "All we can do is weigh and evaluate the relative warrant, the relative backing or strength, of the conflicting teachings" (p. 14). If our warrant for thinking that the Lord is teaching us something in Scripture on a certain topic is quite strong, and the evidence for a conflicting scientific view is weak or ambiguous, then we should conclude that current science is in error; but if the scientific evidence is strong and the evidence concerning what the Lord teaches in Scripture is less clear, it may be our understanding of Scripture which needs correction.

Turning to the issue of evolution, Plantinga first elaborates on the role this theory plays in contemporary Western culture, in particular, its role as a secular *myth* - "a deep interpretation of ourselves to ourselves, a way of telling us why we are here, where we came from, and where we are going" (p 17). He then proposes to consider, from a theistic and Christian perspective, how likely it is that the theory is true. He presents the Grand Evolutionary Story (GES) as comprising five distinct claims: there is the Ancient Earth Thesis, that the earth is several billion years old; the Progress Thesis, that life has progressed from relatively simple to relatively complex forms; the THESIS OF COMMON ANCESTRY (TCA), which holds that all life on earth is descended from a single original form; the Darwinian Thesis, which says that there is a naturalistic explanation of the development of life; and the Naturalistic Origins Thesis, which claims that life developed from non-living matter without any special creative activity of God but just by virtue of the ordinary laws of physics and chemistry.

Plantinga then explains that he accepts both the Ancient Earth Thesis and the Progress Thesis. On the other hand, the Naturalistic Origins Thesis seems to him "mere arrogant bluster . . . vastly less probable, on our present evidence, than is its denial" (p. 20). So his serious efforts at evaluation are focused on the Thesis of Common Ancestry and the Darwinian Thesis. He points out that a number of prominent evolutionists proclaim evolution as absolutely certain, given the scientific evidence. But, he counters, these prominent evolutionists are all atheists, and so have ruled out in advance the possibility of divine creation; hence it is important for Christians to make their own, independent assessment of the evidence. In a brief review of several classes of evidence,[3] Plantinga finds it on the whole unimpressive; on balance, TCA is less probable than its denial, given the scientific evidence plus Christian theism (but setting aside the evidence from early Genesis, which is in dispute among biblical scholars). He concludes with a call for a new kind of science "Theistic Science" in which Christians will shed the constraints of *methodological naturalism* and consider the phenomena of nature and human life "from the perspective of *all* that we know.....what we know about God, and what we know by faith, by way of revelation, as well as what we know in other ways" (p. 30).

On several of these points, I believe Plantinga is clearly correct. Certainly the fact that many leading evolutionists are atheists, and so for them evolution is "the only game in town," plays a

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[3] In his Reply, Plantinga admits to an error here: "I represent myself as arguing against TCA . . . ; as a matter of fact, however, I am questioning the hypothesis that wings, brains and the like have developed according to the mechanisms suggested by contemporary evolutionary theory" (p. 103). He goes on to explain this lapse by saying, "These two hypotheses are of course intimately connected; in particular, it is hard to imagine (*given naturalism*) how the former could be true unless some version of the latter were" (p. 103, emphasis added). But how does this bear on what a *theist* should conclude about the probability of TCA?

role in explaining the claims of certainty which are often made for this theory. It is perfectly correct, then, to assert that Christians need to make their own, independent assessment of the evidence for evolution. And it is very plausible that the result of this assessment will be that this theory is less than maximally certain. So far, then, there is agreement, but some other points require further discussion.

II. Is Evolution Religiously Neutral?

One theme which receives considerable emphasis in Plantinga's paper is that evolution "TCA and GES" is "not religiously neutral." Howard Van Till appears to concede this, but only in the sense that evolution (like other scientific theories) is able to be incorporated into the "mythology" of a naturalistic culture. Plantinga replies that "to say that science was not neutral in *that* sense would be to make a statement weak *in excelsis*" (p. 84); what he had in mind was something much stronger. He goes on to say,

> GES plays an important role in the conflict between Christian theism and naturalism (taken as a mythology, a deep account of ourselves and the world around us). This role is that of providing an answer to a question that is both insistent and monumentally difficult from a naturalistic perspective: how did all this astounding variety of life with its millions of species get here? Their ancestors can't have just popped into existence, but neither, from a naturalistic perspective, could they have been created by God, so where does all this life come from, and how did it get here? Evolution gives an answer the naturalist can accept, and it gives the only such answer anyone can presently think of (p. 84).

Now it is certainly true that evolution can and does play this sort of role in naturalist mythology and naturalist apologetics - fact which is acknowledged and deplored by Van Till (see pp. 37-42). But what conclusion should we draw from this fact? It should be noted that the characteristic Plantinga identifies in evolutionary theory - that of providing a naturalistic explanation for what otherwise might require the action of God or other supernatural powers - is by no means unique to GES and TCA, nor does it, by itself, provide any good reason for rejecting a theory which exemplifies it, provided only that (1) the theory provides a naturalistic explanation of some range of phenomena, and (2) some significant group of people has regarded these phenomena as direct manifestations of supernatural powers. If people are inclined to view wind, rain, and lightning as direct manifestations of divine activity, then a naturalistic theory of the weather can strike a blow against religion - a point exploited with vulgar effectiveness by Aristophanes in the *Clouds*. And if someone is disposed to regard natural disasters such as earthquakes as resulting from the actions of fallen angels (a hypothesis which Plantinga regards as not improbable on the basis of our evidence),[4] the explanation of earthquakes in terms of plate tectonics gives a boost to naturalism.

> In spite of the fact that old-earth theory plays this crucial role in naturalist mythology, Plantinga embraces it with no apparent reservations, just because it is confirmed by good scientific evidence.

But we need not turn for examples to the archaic or the fanciful. Consider, for example, the hypothesis that the earth is several billions of years old. Doesn't this hypothesis provid[e]" an answer to a question that is both insistent and monumentally difficult from a naturalistic

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[4] See his *The Nature of Necessity* (Oxford: Oxford University Press, 1974), p. 195.

perspective: how did all this astounding variety of [geological formations, including continents, mountains, and complicated rock strata, as well as] life with its millions of species get here?" It's true that merely the general hypothesis of the earth's great age does not provide detailed answers to all of this, any more than the bare thesis that evolution occurred provides detailed explanations for those millions of species. But it's evident that *any* naturalistic explanation for all of this will require vast stretches of time; given a much shorter time-span, naturalistic geology (to say nothing of naturalistic biological evolution) simply cannot put the ground under our feet.

This fact, of course, has not gone unnoticed. It's precisely for this reason that Creation Science advocates are determined to resist the old earth hypothesis to the last ditch; they have correctly noted that old-earth theory is "not religiously neutral," that it plays a crucial role in contemporary naturalist mythology and apologetics. But here, of course, Plantinga and his Creation Science colleagues part company. *In spite of the fact that old-earth theory plays this crucial role in naturalist mythology, Plantinga embraces it with no apparent reservations, just because it is confirmed by good scientific evidence*.

What should we conclude from all this? Certainly we should note with concern the use of evolutionary theory by prophets of naturalism such as Carl Sagan. When a theory is being used in this way, we do well to scrutinize with special care whether the theory is really supported by good evidence as claimed, or whether on the contrary it has been adopted for its apologetic value in the absence of such evidence. (Of course we should scrutinize in the same way theories which are specially favored by *Christian* apologists!) If such a theory does withstand scientific scrutiny, then we should examine it carefully so as to detect and remove any "mythological accretions" which have been added to the scientific theory in order to make it more useful for ideological purposes. Clearly both of these kinds of scrutiny are greatly needed in the case of evolution, a theory which may well hold the all-time record for ideological accretions. But once this has been done, if a theory has been validated by good evidence and stripped of mythological accretions, then it can and should be adopted in good conscience by Christian scientists and intellectuals, notwithstanding any misuse that may have been made of it by the purveyors of naturalism. And this goes for evolution as much as for naturalistic meteorology, plate tectonics, and old-earth theory. And I believe Plantinga, Van Till, and McMullin would all agree with this, even though their respective *emphases* vary considerably.

Plantinga and the Bible

The reader of Plantinga's original paper might well be struck by two things concerning his use of the Bible: First, there are what appear to be fairly confident assertions about what the Bible teaches, or about what we have reason to believe the Bible teaches, on this or that subject, especially on subjects related to the divine creation of the world. Consider, for example, the following assessment of "what the Lord intends us to learn from early Genesis":

> Most clear, perhaps, is that God created the world, so that it and everything in it depends upon him and neither it nor anything in it has existed for an infinite stretch of time. Next clearest, perhaps, is that there was an original human pair who sinned . . . That humankind was separately created is perhaps less clearly taught; that many other kinds of living beings were separately created might be still less clearly taught; that the earth is young, still less clearly taught (p. 15).

But second, there is a complete lack of any reference to the kinds of hermeneutical questions which might seem relevant to understanding the Bible's teachings on creation; considerations of literary genre, for instance, or of the historicity of the early chapters of Genesis, or of the nature of ancient world-views, or of the origin of natural science in a Greek and Western rather than a Semitic context.

In view of these two features, I think a reader might be pardoned for concluding that Plantinga feels entitled to interpret Scripture quite straightforwardly - to give a "face-value interpretation," as one might say - without concerning himself with sophisticated hermeneutical issues. Van Till apparently did conclude this; he chides Plantinga for ignoring the "difficult and relevant issues of epistemology and hermeneutics in the arena of biblical exegesis" (p. 35). Plantinga's reply is just a mite testy: "Academics, other intellectuals, the readers of this journal and the audience of my original lecture all get told about a dozen times a day that there are epistemological and hermeneutical difficulties in determining what the Bible teaches; this hardly needs further emphasis" (p. 81). To Van Till's assertion that "we need far more than a naive biblical hermeneutic or a simple `folk exegesis,'" Plantinga replies, "That is hard to dispute, but I can't see why Van Till felt obliged to say it" (p. 82). Concerning the interpretation of the early chapters of Genesis, he writes, "this is a difficult area, an area where I am not sure where the truth lies" (p. 81). The passage cited just above, about "what the Lord intends us to learn from early Genesis," is not spoken by Plantinga in his own voice but is put into the mouth of an adherent of Creation Science.[5] Later on, he illustrates the perplexities of Genesis-interpretation by citing James Barr as follows:

> So far as I know there is no professor of Hebrew or Old Testament at any world-class university who does not believe that the writers of Genesis 1-11 intended to convey to their readers the ideas that: (a) creation took place in a series of six days which were the same as the days of 24 hours we now experience; (b) the figures contained in the Genesis genealogies provide by simple addition a chronology from the beginning of the world up to the later stages of the Biblical story, and (c) Noah's flood was understood to be worldwide, and to have extinguished all human and land animal life except for those in the ark.[6]

The proper response to this sort of situation, according to Plantinga, is to recognize that the primary author of Scripture is the Lord, and that what we need to know in reading Scripture is "what *he* intends to teach in the text in question." What *God* intends to convey in a given text, furthermore, can vary more or less independently of what the human author meant by his words. The two *may* coincide, of course, but God can intend to teach us things never dreamt of by the human author (as in the case of various Old Testament prophecies) - and, on the other hand, God may very well *not* intend to teach us some things which are clearly asserted by the human author

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[5] Here I rely on a conversation with Alvin Plantinga. I must say that the text of Plantinga's essay does not seem to me to make it clear that this passage is not stating Plantinga's own views, though it is certainly consistent with this interpretation. In any case, Plantinga does agree with several of the views here attributed to the creationist; this is made clear in a quotation below, taken from pp. 81-82 of his Reply.

[6] P. 96; the reference for the citation is a Apersonal letter to David C. K. Watson, (April 23, 1984), published in the *Newsletter* of the Creation Science Association of Ontario, vol. 3, no. 4, 1990/91." Plantinga acknowledges that this view may not be held quite as universally by Old Testament scholars as Barr asserts" but it does appear that he embraces the substance of the view as stated by Barr.

(i.e., by the text itself) - including, perhaps, the things which, according to Barr, are asserted in Genesis 1-11.[7]

In view of all this, we can hardly accuse Plantinga of minimizing the difficulties of biblical interpretation. Still, it must be noted that he nowhere discusses in any concrete way how these issues apply to the text of Genesis, nor (with one exception [8] does he say anything about the hermeneutical principles which guide his interpretations. I think we must conclude, therefore, that Plantinga's statements about what the Bible teaches are to be taken purely as personal opinions, items in his intellectual autobiography. The reader may, of course, find that she has reasons of her own for assenting to these views, and if so there is no reason why she need abandon them. But if she did not have such reasons before reading Plantinga, she will have none after reading him.

But does this really matter? Plantinga thinks not; he says "I explicitly set aside questions of the proper understanding of the early chapters of Genesis, just because this is a difficult area where I am not sure where the truth lies." He goes on,

> I do believe that the Lord intends to teach us here not only that the world depends upon him for its existence, but also (at least) that the world has not existed for an infinite stretch of time, and that there was an original pair of human beings whose sin brought calamity upon the human race . . . I also think it likely that he intends to teach us that human beings were created in a special way and in an act of special creation; but I could be persuaded otherwise. Nothing in my paper hinges on these exegetical beliefs, however, or, as far as I can see, upon any other exegetical beliefs about which there is sensible controversy (pp. 81-82, emphasis added).

The claim that *nothing in his paper* hinges on those exegetical beliefs does not seem to be true. Setting aside the passage cited about what the Lord is teaching us in Genesis, there is also the following claim: "If, for example, current science were to return to the view that the world has no beginning, and is infinitely old, then current science would be wrong" (p. 14). (That the Bible teaches that the world has not existed for an infinite period of time is specifically listed as an exegetical belief on which "nothing in my paper hinges.")

What Plantinga may have intended to assert was that the principal conclusions of his paper do not depend on his exegetical views - in particular, this would be true of his conclusion that TCA is less probable than its denial, given only theism and the empirical scientific evidence. Here considerations about what the Bible teaches are not germane, since the conclusion is explicitly about what is probable apart from specific biblical teaching. But this does not settle the matter. For is it not possible that Plantinga's assessments of the probabilities in question have been influenced by his beliefs about what the Bible teaches? He holds (as all Christians must) that what God teaches us is certainly true, and he considers it probable that God has taught us that human beings were specially created. He may have intended to make his assessment of the probability of TCA independent of this and other exegetical beliefs, but can we be sure he has

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[7] The only possibility which may be excluded is that God intends to teach us precisely the opposite of what the human author asserts - at least, Plantinga provides us with no example of this.

[8] The one exception is that, when our reasons for thinking God teaches us a certain thing in Scripture are comparatively weak, and there are very strong reasons from other sources to think that the view in question is false, then we should conclude that probably God does *not* intend to teach us the item in question. No doubt that is good advice, but taken by itself it will not get us very far.

succeeded? I really don't see how we can be sure of this; nor does it seem to me that Plantinga's own views on this point are highly privileged. (Surely it is no longer necessary to argue that the causes of our beliefs are often hidden from us.) So I don't see how we can be at all confident that Plantinga's main conclusions really are uninfluenced by his exegetical beliefs [9] and in view of this, his failure to provide any support whatever for those beliefs can hardly be dismissed as unimportant.

IV. Plantinga's Hypothesis

The most interesting question about Plantinga's hypothesis is whether or not he has one. McMullin assumes that he does, but just what it is is unclear:

> The presumed inadequacy of current theories of evolution is part of what leads Plantinga to propose his own alternative. What exactly is it? Is it that God brought to be in a miraculous way each of the millions of species that have existed since life first appeared on earth? . . . Perhaps he means that God just created the phyla. . . . But why not all species? How is Plantinga to decide just which thesis is more probable than TCA? (p. 73).

To this Plantinga replies, in effect, that he has no alternative to propose and doesn't need one:

> What I say is that from a theistic or Christian point of view, TCA is unlikely, somewhat less likely than its denial. That is all I am claiming; I am not proposing an alternative explanation . . . In order to claim quite properly that an explanation is improbable, you are not obliged to be able to point to a better alternative (p. 89).

This response immediately raises a number of questions. One thought which may occur is that Plantinga is gaining an unfair advantage by pointing out the weaknesses of a hypothesis he opposes, while leaving his own view in the dark and thus safe from criticism.[10] A more important consideration, however, is the apparent clash between his procedure and current philosophy of science. One of the best-learned lessons in recent philosophy of science is that the evaluation of a scientific hypothesis does not, in the typical case, focus on just one hypothesis at a time; rather, the concern is with pairs (or other multiples) of competing hypotheses.[11] One of the reasons Karl Popper's "falsificationism" has been generally abandoned, is that it would lead to the rejection of far too many hypotheses; many theories, in fact, are "born falsified" in that, right from the outset, they fail to conform to all the known data in the field under study. If a hypothesis which has shown significant promise encounters anomalous data, the normal scientific response is to retain the hypothesis until a superior replacement hypothesis emerges. To recommend abandoning a

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[9] I must confess that I find it difficult to credit that any well-informed person, uninfluenced by biblical exegesis, could assign a high probability to the view that humans are specially created purely on the basis of theism and the empirical evidence.

[10] To avoid misunderstanding, let me say that I do *not* think Plantinga has deliberately proceeded this way in order to give himself an unfair advantage. I do believe that, as a matter of fact, his procedure does give him an unfair advantage.

[11] Prominent among the philosophers of science who have established this point are Thomas Kuhn (see *The Structure of Scientific Revolutions*, 2nd edition, Chicago: University of Chicago Press, 1970), and Imre Lakatos (see *The Methodology of Scientific Research Programmes: Philosophical Papers, Volume I*, ed. John Worrall and Gregory Currie, Cambridge: Cambridge University Press, 1978). Lakatos writes: "Important criticism is always constructive: there is no refutation without a better theory. . . . [W]hat normally happens is that progressive research programmes replace degenerating ones" (p. 6). Also, "A theory can only be eliminated by a *better* theory, that is, by one that has excess empirical content over its predecessors, some of which is subsequently confirmed" (p. 150).

theory with no replacement in sight is, scientifically speaking, a counsel of despair. Is this what Plantinga is asking us to do in the case of evolution?

As a result of conversations with Plantinga, I believe his response would be that he is not, himself, engaging in biological science and does not intend (at this point) to be making recommendations to scientists. His concern is with the truth of GES and TCA, not with their role as Aparadigms≅ guiding scientific research. If he were speaking of the acceptance of scientific theories (as establishing Aresearch programs,≅ and the like) he would have other things to say. His claim is simply that, given the truth of Christian theism together with the available scientific evidence, both GES and TCA are less likely than their respective denials. How scientists should proceed in these matters is another question entirely.

It is possible to detect in all this the influence of the scientific anti-realism of a Bas van Fraassen - which is not to say that Plantinga would adopt van Fraassen's views wholesale. And it opens up an intriguing possibility: perhaps Christians who are scientists - including the proponents of Plantinga's "theistic science" - would be best advised to accept TCA and even GES as working hypotheses, pursue research programs based on them, and so on, all the while holding, along with Plantinga and other right-minded persons, that both GES and TCA are probably false. No doubt it would be surprising if things turned out this way, but Plantinga has said nothing that would rule it out.

Clearly we are dealing here with some fascinating issues. But a more elementary sort of question now obtrudes itself, namely, *Can Plantinga stick to his refusal to offer an alternative hypothesis? And does he, in fact, stick to it?* I believe that, contrary to his protestations, he does need to present an alternative view in order for his argument to go through. And it's clear that he does have such a view, but unfortunately it is not specified in sufficient detail to do the work that is required of it.

The place where the need for an alternative shows itself is when Plantinga undertakes to assess the empirical evidence adduced in support of TCA. He says of one strand of evidence: "[It 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" (p. 23, and see similar remarks on pp. 24, 103-04, 105, and 107-108). The burning question here is the one already posed by McMullin: "Which thesis is more probable than TCA?" What particular hypothesis does Plantinga have in view, so as to be able to say that the evidence is "reasonably probable" on that hypothesis? Here it clearly will not do to say that the hypothesis in question is simply the denial of TCA. For TCA is a fairly strong hypothesis, and its denial is correspondingly weak in its logical force - that is to say, it is compatible with an enormous range of alternatives, and the alleged evidence for evolution may be extremely probable with respect to some of these alternatives and extremely improbable with respect to others.

But of course, it simply is not true that Plantinga is committed only to the negation of TCA. It is quite clear, from various things he says, that his view is *at least* that "God did something special in creating initial forms of life, then something special in creating some other forms of life, then something special in creating human beings" (pp. 88-89). (And the "something special" in the latter two cases must be something which involves lack of continuity of descent from earlier

forms. God might, quite conceivably, do "something special" in arranging that a particular, very improbable mutation should occur, leading to the appearance of a more advanced kind of creature. But this would not be "special" enough for Plantinga, for it would not be inconsistent with TCA.) So we know at least this much about Plantinga's view. Could we suppose, then, that what he means to be saying is that the evidence cited for evolution is not improbable on that hypothesis?

I think we had better not suppose this - not that is, if (as is wise) we want to take Plantinga to be saying something sensible. For while the hypothesis stated above is far more determinate than merely the negation of TCA, it is nowhere near determinate enough to enable us to evaluate the alleged evolutionary evidence in its light. What would need to be further specified is *how many* "forms of life" have been specially created - or, better, at what *taxonomic level* this is supposed to have occurred. Suppose, for instance, that the view is just that God created the phyla, and after this allowed evolution to take its course. On *this* creationist hypothesis, the likelihood of most of the evidence for evolution is *exactly the same* as it is on TCA - for a great deal of that evidence pertains to taxonomic levels below the phyla, and with respect to these lower levels the predictions of this "phylum creationism" are exactly the same as those of TCA itself. And on the other hand, the complaints of creationists (including Plantinga) about the scarcity of transitional forms below the level of phyla would also lose their point; this scarcity is as much (or as little) a problem for phylum creationism as it is for TCA. It should be noted, furthermore, that phylum creationism comports badly with the view, dear to the hearts of Plantinga and other creationists, that *human beings* are specially created by God in a way that excludes pithecine descent. If God's special creative activity occurs nearly always at the level of phyla or above, then this claim about the special creation of a single species - or at most of a genus - has a strong *ad hoc* flavor about it; it becomes (to use one of Plantinga's favorite words) very much an "epicycle" [12] on the creationist view.

If, on the other hand, God's special creative activity is thought of as occurring frequently at lower taxonomic levels, then the situation with respect to the evidence changes. The creationists will gain in being able to chide evolutionists over the scarcity of transitional forms, but they will also incur the burden of explaining, in a non-arbitrary fashion, the evidence which is generally held to support the occurrence of evolution at these levels. It may be that somewhere the creationist will find an optimum balance between the two<|>x<|>a level of special creative activity which imposes the greatest burdens on the evolutionary hypothesis in comparison with his own. This level would be determined, as McMullin suggests, by Achecking to see what evolutionary theory has . . . been able to explain successfully. And then whatever is left over, God is more likely to have brought about miraculously≅ (p. 73). Plantinga, however, maintains a discreet silence about all this.

At this point Plantinga might want to claim that his statements about the likelihood of the evidence on the hypothesis of special creation are mere offhand remarks, not essential to his

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[12] On at least seven occasions, Plantinga refers to actual or possible modifications of evolutionary theory as "epicycles." Presumably an epicycle is an *ad hoc* adjustment to a theoryXbut in several of these cases Plantinga makes no attempt to argue that the adjustments in question really are *ad hoc.* One is left with the impression that, for Plantinga, *any* modification of evolutionary theory to accommodate new data would be an "epicycle."

main line of argument - thus, he does not after all need to offer an alternative hypothesis. I am not convinced that this is so. TCA, after all, is a theory for which considerable empirical evidence has been adduced.[13] In evaluating TCA, it is essential to try and determine how strongly that evidence supports the theory. And it is difficult to see how *that* can be done without considering whether there is a plausible alternative theory such that the evidence is as likely, or nearly as likely, on that theory as it is on TCA. The role of the alternative explanation seems to be essential here - but it's a role which Plantinga leaves unfilled.

In certain respects, then, Plantinga's handling of the empirical evidence for evolution leaves the reader in even greater perplexity than his treatment of scriptural data. Plantinga gives the reader no reason whatever to suppose that his interpretations of Scripture are correct, but there is no serious doubt as to what the interpretations *are*. But when Plantinga says that the evidence for evolution is reasonably probable on some alternative to the evolutionary hypothesis, we have no way of knowing, in sufficient detail, what that alternative is; thus, we are unable even to *formulate the proposition* which we would need to evaluate in order to determine whether Plantinga's claims are warranted.

V. Theistic Science

It's possible that Plantinga might be able to accept at least a good deal of this. (Though I don't predict that he *will* accept it!) He does not claim, after all, to be either a scientist or an exegete, and the primary aim of his paper is not to tell scientists and exegetes what conclusions they should reach. His remarks about the Bible and about the evidence for evolution can be taken as merely illustrative - examples of the kinds of conclusions that *might* be reached, if Christian scholars and scientists were to deal with these issues in the proper way. It is, however, the *way* in which these matters are to be handled, the *kind of study* which is to be made of them, which constitutes the main burden of his two papers. These concerns are focused in his proposal for "Theistic Science."

Now Plantinga's proposal for Theistic Science is fairly sketchy; it does not involve anything like a complete blueprint showing how such a science is to be constructed. Still, some things about it are reasonably clear, as is shown in the following quotation:

> In all the areas of academic endeavor, we Christians must think about the matter at hand from a Christian perspective; we need Theistic Science. Perhaps the discipline in question, as ordinarily practiced, involves a methodological naturalism; if so, then what we need, finally, is not answers to our questions from *that* perspective, valuable in some ways as it may be. What we really need are answers to our questions from the perspective of *all* that we know - what we know about God, and what we know by faith, by way of revelation, as

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[13] There is to be sure another relevant question to be asked here; namely, what is the *antecedent likelihood* of God's proceeding in one way or the other? That is to say, leaving aside the empirical evidence concerning evolution, and leaving aside also the specific teaching of Genesis about creation, whatever it is, which is more reasonable to expectXthat God would proceed by evolutionary means, or by way of special creation? Both Plantinga and McMullin devote considerable attention to this question (see pp. 21-22, 74-76, 99-102), and the results are fascinating though finally (in my opinion) inconclusive. In any case, Plantinga seems to be correct when he says that we must rely mainly on the empirical evidence rather than on these estimates of antecedent likelihood (see p. 102).

> well as what we know in other ways. In many areas, this means that Christian must rework, rethink the area in question from this perspective (p. 30).

McMullin expresses serious concerns about this proposal. One thing he objects to is Plantinga's principle, according to which, in cases of apparent conflict between science and Scripture, we "balance" one against the other and determine our interpretation accordingly: If the Scriptures are clear and the scientific evidence shaky, we modify our understanding of science, while if the scientific evidence is strong and the exegetical evidence weak or ambiguous, it is our interpretation of Scripture which must be changed. McMullin writes:

> [This principle] has one quite disastrous consequence: it sets theologians evaluating the validity of the arguments of the natural philosophers, and natural philosophers defending themselves by composing theological tracts. Either way, there will be immediate charges of trespass. The theologian challenges the force of technical scientific argument; scientists urge their own readings of Scripture or their own theories as to how Scripture, in general, *should* be read. In both cases, the professionals are going to respond, quite predictably: what right have you to intrude in a domain where you lack the credentials to speak with authority? The assessment of theory-strength is not a simple matter of logic and rule but requires a long familiarity with the procedures, presuppositions, and prior successes of a network of connected domains, and a trained skill in the assessment of particular types of argument (pp. 61-62).[14]

McMullin also objects to the acceptance of non-empirical sources of knowledge (such as faith and revelation) in the proposed new science, for this means that such a science "lacks the sort of warrant that has gradually come to characterize natural science, one that points to systematic observation, generalization, and the testing of explanatory hypothesis." Indeed, this new discipline is not well described as *science*: since it "requires faith, and faith (we are told) is a gift, a grace, from God," and since it "appeals to a specifically Christian belief, one that lays no claim to assent from a Hindu or an agnostic," it "lacks the universality of science, as that term has been understood in the Western tradition. . . To use the term `science' in this context seems dangerously misleading; it encourages expectations that cannot be fulfilled, in the interests of adopting a label generally regarded as honorific" (p. 57).

McMullin goes on to say,

> I do not object . . . to the use of theological considerations in the service of a larger and more comprehensive world-view in which natural science is only one factor. . . . But I would *not* be willing to use the term, "science," in this context. Nor do I think it necessary to do so in order to convey the respectability of the claim being made: that theology may appropriately modulate other parts of a person's belief-system, including those deriving from science (pp. 57-58).

And in the concluding pages of his comment, he provides an example by sketching out, in a manner inspired by Karl Rahner and Teilhard de Chardin, a way in which evolution can be incorporated into a Christian world-view and theology (pp. 78-79).

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[14] I am taking a small liberty by applying McMullin's remarks directly to Plantinga's principle; they originally apply rather to a slightly different principle proposed by Galileo. But the points made do, in McMullin's view, apply to Plantinga's approach with equal force.

Plantinga rejects all of these arguments. To the objection that his Abalancing principle≅ leads to excessive conflict and to persons speaking outside their proper areas of expertise, he replies

> Where there is apparent conflict between Scripture and science, we must try the best way we can to see how to resolve it; given present academic arrangements, this will inevitably result in *someone's* making pronouncements that are outside his field. . . . This could be avoided only if there were professionals, experts, who were expert in the relevant science, and also in philosophy and philosophy of science, and also in theology. None of us . . . fills a bill like that.[15] So if McMullin means to suggest that philosophers should stick to their philosophy, theologians to their theology, and scientists to their science, then no one could address apparent conflicts of the sort that occasioned my paper. But we, the Christian community, *need* answers to these questions . . . (pp. 92-93).

He goes on to note that McMullin also endorses the idea of a synthetic enterprise, involving science, philosophy, and theology, in which such issues will be addressed - and nothing is solved or answered merely by denying the name "science" to the enterprise

Still, Plantinga is unwilling to give up the name "science." On the one hand, McMullin's charge that this discipline lacks the warrant that comes from empirical scientific research reflects a misunderstanding. Plantinga's Theistic Scientists will carry out such research, it's just that they will *also* consider the deliverances of exegesis and theology in reaching their scientific conclusions (p. 97). And as for "lack of universality," he responds that "science, if it is practiced in such a way as to honor the methodological naturalism McMullin urges, is by no means always universal" (p. 98). As an example, he cites a piece of sociobiology authored by Herbert Simon, in which benevolence and unselfish love are explained as "bounded rationality" and "docility." After discussing the application of this to Mother Teresa, he says, "I should think no Christian could even for a moment take this seriously as an explanation of [her] behavior" (p. 98). So methodologically naturalistic science is *not* necessarily universal; therefore the lack of universality in Theistic Science is no problem. And in general, Plantinga clearly regards methodological naturalism as an arbitrary dogma; he repeatedly issues challenges to provide a justification for it, while exuding confidence that no decent justification will be forthcoming.

There is certainly some force in these replies. I believe, however, that at a number of points Plantinga has failed to fully grasp McMullin's objections, and thus his replies fall short. I do not think McMullin's complaint about the lack of empirical warrant in Theistic Science was based on a misunderstanding. Undoubtedly, the Theistic Scientist will carry out the customary activities of observation, experimentation, testing of hypotheses, and the like. But at crucial points, what grounds her conclusions will not be these activities but rather specific Christian theological beliefs - beliefs which, as McMullin rightly says, lay "no claim to assent from a Hindu or an agnostic. "Her scientific conclusions, at these crucial points, will indeed be without empirical warrant. Plantinga waves off the problem of universality with his sociobiology example, but this misses the point. Sociobiology *is* universal, not in the sense that its *conclusions* are acceptable to everyone, but in that its *methods* are open to all: Anyone, be he Hindu, agnostic, or Calvinist, can

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[15] What Plantinga says here is undoubtedly true. I think it is fair to remind the reader, however, that McMullin is one of the world's premier historians and philosophers of science, and is extremely familiar with the relationships between science and religion over the past several centuries. Plantinga is a superb metaphysician and philosopher of religion, but has no comparable credentials in science or the philosophy of science.

pursue the empirical and conceptual inquiries which will validate or refute sociobiology's claims.[16] (I would agree with Plantinga that many of them richly deserve to be refuted.[17]

It is true that McMullin's "comprehensive world-view" will require a synthesis of considerations from science, philosophy, and theology, and those involved in constructing such a synthesis cannot remain within narrowly defined disciplinary boundaries. But I believe there is a distinct difference between the way in which McMullin envisages this procedure, and the way it would go on in Theistic Science. As I think McMullin conceives of it, the synthetic enterprise takes place at a rather advanced level of study in the respective disciplines. The day-to-day scientific work of the Christian biologist, geologist, or astronomer goes on in the same way, and according to the same principles (including methodological naturalism [18] as that of her secular colleagues. Scripture scholars will determine the meaning of biblical texts according to the best methods of exegesis and hermeneutics, without straining to accommodate the texts to modern scientific conclusions. Theologians will determine the meaning of essential Christian doctrines in the light of Scripture, tradition, experience, and so on. Only when these inquiries have reached a fairly advanced stage does the synthesizer, the constructor of worldviews, bring the various disciplines together to fashion, as it were, the capstone on the edifice of truth.[19] Even at this stage, furthermore, there will be a disposition for the most part to accept the results of the various disciplines at face value, while appropriately "modulating" them so as to arrive at a unified

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[16] I take it that the objective of sociobiology is to see how much of human behavior can be explained in terms of our inheritance from lower forms of life. In order to pursue such an enquiry it is by no means necessary to assume in advance that *all* human behavior can be so explained, and any such assumption should be rejected as an unwarranted "mythological addendum" to the scientific project.

[17] Another problem with Plantinga's appeal to sociobiology stems from the fact that his controversy with Van Till and McMullin concerns *natural* science, whereas this example is from *behavioral* science. It is widely recognized, however, that natural science and behavioral science are quite different from each other in respects which are highly relevant to the way in which they interact with the Christian and theistic worldview.

[18] To launch into a defense of methodological naturalism at this point would carry us too far afield. There is, however, a possible misunderstanding lurking here which deserves to be laid to rest. If a science is practiced in accord with methodological naturalism, this means that only natural entities and forces will enter into the explanations given by that science. (One possible reason for this might be that supernatural entities cannot be subjected to experiments, nor can their behavior be captured in our laws.) Methodological naturalism does *not* mean, however, that every event whatever must be explainable in terms of naturalistic science. The point is made nicely in the saying, sometimes heard in the discussion of an alleged miracle, "There is no scientific explanation for this event." This sentence captures *both* the idea that "scientific" explanations must be of a certain kind (viz., naturalistic), and *also* the claim that there are real events which cannot be explained in this way.

In a comment on this paper, David Wilcox poses the question of how theists, Hindus, and agnostics can work together to produce a common science: "What does a common assumption of `methodological naturalism' mean? Clearly, it must mean something different for each worker, yet the *expected behavior* for each (such as uniformity and rational/lawful order) must be similar enough that the workers will make parallel predictions about experimental outcomes. *But*, the meaning of that methodological naturalism will be miles apart for the workers. That meaning is not implicit in the assumption. *That is as true for the materialistic world-view as it is for any other*. Thus, an agnostic is *always* as subjective as a theist."

[19] Philip Quinn has suggested to me that I am giving here a highly idealized description of the process of synthesis. No doubt this is true; a scientist or scholar concerned with synthesis will be unlikely to exclude all thoughts of the final result until a late stage of the process. What is crucial, however, is that the *methodological integrity* of the respective disciplines be maintained.

perspective. In such an enterprise the possibilities of conflict and of territorial trespass still exist, to be sure, but they are greatly minimized.[20]

In Theistic Science, on the other hand, the interaction (and the potential conflicts) occur at a much lower level. The scientist practices his geology with the Book of Nature before him and the Book of God in his hand, and what he says about each will depend in part on what he reads in the other. The possibility of excessive and unproductive conflict, pointed out by McMullin, is much more pressing here. There is also the all-too-real likelihood that in a theologically conservative context (and that is the only place Theistic Science has a chance of being taken seriously) the theological disciplines will assert hegemony and, supported by the ecclesiastical authorities, will attempt to Acall the shots≅ for the Alesser≅ secular disciplines. Plantinga's present academic setting effectively insulates him from such concerns<|>x<|>but recent events at his *alma mater*, Calvin College, should remind him that this is no idle possibility.[21]

Now if the Scriptures really are relevant to detailed scientific conclusions, this relevance must be recognized in spite of the practical difficulties just noted. But are they relevant? McMullin would not deny the relevance altogether; he does not think we can eliminate in principle the possibility of a conflict between science and faith. But these possibilities are largely limited to conflicts regarding human nature, freedom, and moral responsibility; the first two chapters of Genesis, on the other hand, "are not to be read as literal history" (p. 62).[22]

Plantinga apparently disagrees. But does he really? Consider again the quotation given above from James Barr. If Barr is right in holding that the author of Genesis intended to teach a literal six-day creation, a young age for the earth, and a world-wide flood, this will create some embarrassment for those who prefer to think that the biblical writers used an ancient world-picture only as a convenient manner of speaking and were not seriously committed to it. But Barr's view is absolutely devastating for those who, like Plantinga, hold that the creation story is relevant for deciding on a scientific view to be accepted by contemporary Christians. If Barr is right, Plantinga's choices would seem to be stark: Either accept an uncompromising version of

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[20] There is a substantive underlying issue here: How seriously are the various sciences, as practiced in the secular academy, compromised by the naturalistic assumptions of their more influential practitioners? Clearly, McMullin takes a relatively optimistic view on this point: naturalistic bias and distortions no doubt exist, but they can fairly readily be separated from the healthy, "genuinely scientific" core of the disciplines. Plantinga, on the other hand, is much more prone to find the trail of the naturalistic serpent over everything. At this deep level, what we are dealing with may well be a conflict between Thomism and Kuyperianism.

[21] A significant suggestion at this point comes from David Wilcox, who writes: "If one accepts the idea that we live and work within a hierarchy of recognitional models (data patterns to world views), it becomes possible to do integration continuously. In fact, one must, for one can never `shuck off' the guidance of the higher levels, nor can one dodge the empirical pressure of the lower levels. However, each discipline works with a different part of reality. At the lower levels of data recognition, the `world-view' effect is remote, mediated down through the hierarchy. Thus people of different world-views may, in part, work together. At the higher world-view levels, the effects of the `data' is remote, mediated up through the hierarchy. Thus, Christians in different disciplines may, in part, be working together. Theologians, however, would have progressively less to say as they approached the data of the physical world, and scientists would have less to say as they approached the Biblical text. Disciplines would be distinct, and yet still sensitive to the Scripture as it spoke to foundational understandings in their areas. And that, I think, we are called to."

[22] McMullin writes, "I do not believe that Scripture *does* prescribe that the universe had a beginning in time, in some specific technical sense of the term, `time'" (pp. 64-65).

Creation Science, or admit the Genesis account is *not* relevant to our acceptance of scientific views about origins.[23]

Plantinga's response to this, in conversation, is that what follows from Barr's statement is at most that what the *human* author(s) of Genesis meant is not relevant to the assessment of our scientific theories; what is at issue, however, is what the *Lord*, the *divine* author, intends to teach us - and this, as has been noted, may be quite different than what the human author thought. This move solves the problem for Plantinga only by reminding us of the potentially wide gap between what the human author meant and what God meant by Scripture - a gap, let us recall, that *Plantinga has given us no directions whatever for crossing*. So for all that he has said, it could very well turn out that the relevance of Scripture to scientific hypotheses is no more extensive than Van Till and McMullin think it is.[24]

In the conclusion of his essay Plantinga points out that his call for Theistic Science is not new: It represents a key idea in the tradition of Reformed Christianity, the idea which was expressed by the founding of the Free University of Amsterdam as well as Calvin College. But, he says, "We must admit . . . that it is our *lack* of real progress that is striking" (p. 30). He goes on to attribute this lack of progress to the inherent difficulty of the undertaking, as well as to the lack of support and recognition for such an undertaking in the secular academy.

I wish to suggest a different assessment. It should be noted, to begin with, that precisely in the natural sciences the achievements of certain Calvin College faculty members (such as Davis A. Young, Clarence Menninga, and Howard Van Till) are far from negligible. But of course, not all good things come from Grand Rapids, or even from Friesland. There is in the twentieth century a vigorous tradition of Christian reflection on the natural sciences, carried on by such thinkers as Karl Heim, F. R. Tennant, Pierre Teilhard de Chardin, Ian Barbour, John Polkinghorne, Richard Bube, Donald M. MacKay, and, last but far from least, Ernan McMullin.[25] Each one of these, I am sure, would agree that a great deal remains to be done. But what they have accomplished should not be minimized - and here I believe Plantinga would agree.[26]

From the standpoint of Theistic Science, to be sure, all this may be quite unsatisfactory; the persons named have scrutinized and interpreted standard, "mainstream" science, but have not

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[23] Note that each of the three items mentioned by Barr, taken separately, is incompatible with well-established scientific data quite apart from the issue of TCA vs. special creation. A literal six-day creation is incompatible with the long periods known to have elapsed between the appearances of various forms of life. That the genealogies provide a complete chronology is incompatible with abundant data which establish for *homo sapiens* an antiquity of 50,000 to 100,000 years. And a world-wide flood in historic times is incompatible with a very large range of geological and archaeological data.

[24] It should be kept in mind that neither Van Till nor McMullin rules out *a priori* any possible relevance of Scripture to scientific theories. It is rather that when they examine the actual content of science and Scripture respectively, they find the relevance to be minimal.

[25] To say that this list is *incomplete* would be an understatement; in reality, it is a mere sampling of those who could have been mentioned. The reader who finds one or more of his favorite names omitted is invited to add it to the list with my blessing.

[26] Plantinga informs me that his complaint about the lack of progress was directed at the Reformed community and its specific project, here labeled "Theistic Science"; he was not meaning to deny the achievements of thinkers such as those named in the text.

created a distinctively Christian natural science. But I think the lack of progress in Theistic Science can be linked to another historical tradition - one which includes Bellarmine and the persecutors of Galileo, the efforts of "flood geologists" in the eighteenth and early nineteenth centuries, much of the anti-evolution movement since Darwin, and in our own time the purveyors of Creation Science.[27] These efforts to create a "Christian" natural science have failed, I suggest, not because of lack of talent or effort but because the thing does not exist: there is one nature, and one science of nature, and the attempt to construct an alternative on a biblical basis is doomed to failure, because that is not what the Bible is about. At best, those who make such an attempt will repeatedly discover, fifty years too late, that the Bible does not "clearly teach" about science what their grandfathers said it did, and that the scientific knowledge their grandfathers rejected should indeed, albeit tardily, be welcomed as true insight into the structure of God's creation. Those who forget history are doomed to repeat it.[28]

[27] I would not be strongly critical of the persons early in this list, though the persecution of Galileo was certainly reprehensible. In the eighteenth century it was quite reasonable to try and interpret the geological record in terms of Noah's Flood; to try to resurrect this failed science today is a different matter entirely.

[28] I am indebted to Alvin Plantinga, Ernan McMullin, Philip Quinn, and David Wilcox for valuable comments on earlier versions of this paper.

Alvin Plantinga's Response to Hasker

On Rejecting The Theory of Common Ancestry: A Reply to Hasker

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I wish to respond to William Hasker's "Evolution and Alvin Plantinga" (*Perspectives on Science and Christian Faith*, Sept. 1992, pp. 150 ff.).[1] Hasker takes issue with several things I said; I am tempted to engage in lengthy point-by-point self-exculpation, but I shall resist, confining myself to a couple of points of general interest. Some of the issues involved seem to me to be extremely important with respect to the health and welfare of the Christian intellectual community.

First, however, just a bit of stage setting. My original article ("When Faith and Reason Clash: Evolution and the Bible" [2] was devoted to this question: what should Christians do when there is an apparent conflict between faith and reason? I took as an example the apparent conflict between the teachings of Christianity and the teachings of current evolutionary theory; and I noted that many of the experts (Ayala, Dawkins, Gould, Ruse, Simpson, Spieth, e.g.) claim that evolution is certain, as certain as that the earth revolves around the sun. (By "evolution" they apparently mean at least TCA: the THEORY OF COMMON ANCESTRY, the theory according to which all contemporary living things are genetically related.) I disputed these claims of certainty and suggested that they should be explained in terms of the fact that evolution is the only naturalistic explanation available, the only game in town. I went on to argue that the probability - or acceptability - of TCA is much lower with respect to Christian theism and the empirical evidence than with respect to philosophical naturalism and the empirical evidence. Indeed, I claimed that TCA is improbable, less probable than its denial, with respect to theism and the empirical evidence. And I did this without saying exactly how I think God *did* create all the varying forms of life, without specifying and endorsing some hypothesis of the same logical level or the same logical strength as TCA.

Now both Ernan McMullin [3] and Hasker apparently think there is something improper with this

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[1] Hasker's paper is a comment on a discussion in the September, 1991 issue of the *Christian Scholar's Review*. This discussion begins with my "When Faith and Reason Clash: Evolution and the Bible," continues with responses to that piece by Howard Van Till ("When Faith and Reason Cooperate"), Pattle Pun ("Response to Professor Plantinga") and Ernan McMullin ("Plantinga's Defense of Special Creation") and concludes with my "Evolution, Neutrality, and Antecedent Probability: a Reply to Van Till and McMullin."

[2] See note 1.

[3] "Plantinga's Defense of Special Creation," p. 72. McMullin also criticizes Michael Denton (*Evolution: a Theory in Crisis*, Bethesda, MD: Adler and Adler, 1986) for rejecting TCA but failing to suggest an alternative: "But he assumes

procedure. Both apparently believe that if you reject a theory or explanation as unlikely on the evidence, you have to be prepared to propose some other theory in its place. They don't say what you must propose this theory as, or claim for it: must you think it is true? Or (less stringently) more likely than not? Or (still less stringently) more probable than the one you reject? All three of these alternatives, I believe, are importantly mistaken; and because this is such an important point, I want to look into it more carefully.

Hasker first suggests that "Plantinga is gaining an unfair advantage by pointing out the weaknesses of a hypothesis he opposes, while leaving his own view in the dark and thus safe from criticism" (p. 154), and in a footnote he adds that even if I didn't intend to gain an unfair advantage in this way, the fact is I *did* gain an unfair advantage for my view by not putting it out for criticism. Of course this presupposes that I *have* a view here. And I *do* have a view: that the probability of TCA with respect to Christian theism and the empirical evidence is low, lower than that of its denial. But Hasker apparently believes that if I reject TCA as improbable, then (if I am proceeding properly) I must be prepared to suggest and endorse some other view of the same specificity or same logical strength as TCA. Now at first glance, anyway, that seems wrong. I think Cardinal X will be the next Pope; you think that is unlikely, but don't have a candidate of your own; there is no one such that you think it is more likely than not that he will be the next pope. Is there something wrong with your procedure? I think not.

A fuller example: you are at the race track. There are 8 horses in the first race. These horses are fairly evenly matched, but there is a favorite, Black Beauty, who you think has a 1/3 chance of winning. You leave just before the end of the first race; as you leave you hear a roar go up from the crowd. The most probable explanation, as you see it, is that the crowd is cheering Black Beauty, who has just won the race. Will you *believe* that explanation? I hope not; although there is a 1/3 chance that Black Beauty is the winner, there is a 2/3 chance that she isn't. Do you instead believe of some *other* horse that *it* is the winner? No: each of them, as you see it, has a smaller chance of winning than Black Beauty. Is there anything irrational or methodologically unsound in this structure of belief? Again, I should think not.[4]

But doesn't the same structure hold for explanations more generally, including scientific explanations? If you think a given explanation or theory **T** is less likely than its denial, or even if you think it is only somewhat more likely than its denial, you quite properly won't believe it. This is so even if you can't think of another theory or explanation of the phenomena that you believe more probable than not, or even more probable than **T**. (I take it the denial of a theory isn't automatically another theory.) In the horse race example, I reject (do not believe) the proposition that Black Beauty won (although of course I also reject the belief that she lost); I know of several other theories of the same level of generality as that Black Beauty won: but I don't believe any of them; and, in fact, each of them is less probable, as I see it, than the hypothesis that Black Beauty won. So it is sometimes perfectly sensible to reject the best (or most probable) explanation. This might be when you don't know of any other possible

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that he has also refuted TCA, while providing no hint himself as to how the correspondences he finds so remarkable might be explained by something *other* than common ancestry." (p. 68, footnote).

[4] I filched this example from Bas Van Fraassen: see his *Laws and Symmetry* (Oxford: Oxford University Press, 1989) p. 149).

explanations at all; but the same thing is also perfectly rational when you do, if all of them including the one in question are too unlikely.[5]

This is how things look on the face of it; but Hasker believes these appearances are misleading. He claims that I can't justifiably think or say that TCA is unlikely on the evidence unless I am prepared to come up with an alternative to it; and he has an argument for that conclusion. I want to look at his reasoning here, and I beg the reader's indulgence for descent into the sort of line by line analysis that analytic philosophy is infamous for. But let me first briefly recap the discussion. In the original article I said that the similarity in the biochemistry of the various forms of life is reasonably probable on the hypothesis of special creation and hence not much by way of evidence against it. Now the hypothesis of SPECIAL CREATION (**SC**) I had in mind was just the hypothesis that,

SC: God created at least some forms of life specially, in a way that did not involve common descent.

I thought (and still think) that the given biochemical similarity between the various forms of life is not improbable on SC: we have no reason to think that if God created some forms of life specially, he would do so in a way excluding this similarity. But if that is so, then it is easy to see (via an application of Bayes' Theorem that I won't trouble you with) that biochemical similarity isn't strong evidence against SC; and if *that* is so, then it is not strong evidence *for* any view incompatible with SC, such as TCA.

SC, of course, isn't really an alternative to TCA; it says just that God has created life in some way incompatible with TCA, but it doesn't venture a guess as to what way that might be. (SC is equivalent to the conjunction of the negation of TCA with the proposition that God has created the various forms of life (in some way or other).) And Hasker believes that I must have or endorse a proposition more specific than that, something of the same logical strength as TCA, if I am justifiably to reject TCA as less likely than its denial on the relevant evidence? Why so?

> The place where the need for an alternative shows itself is when Plantinga undertakes to assess the empirical evidence adduced in support of TCA. He says of one strand of evidence, "[It 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" . . . . The burning question here is the one already posed by McMullin: *"Which thesis is more probable than TCA?"*

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[5] Hasker cites some contemporary philosophers of science, who point out that one should sometimes accept a theory even if it "fails to conform to all the known data in the field under study." But surely these philosophers do not mean to say that we should *believe* a theory that is logically inconsistent with known data; that would be peculiar counsel indeed. Nor are they suggesting that we should evaluate such a theory as *probably true,* even if it is incompatible with what we know. Rather, their counsel, I take it, is that such a theory can nonetheless quite properly be *accepted,* in a sense that does not entail belief. (Thus we might think the theory is in the *neighborhood* of the truth, even if as it stands it is clearly false; or we might think it promising enough to be taken as a basis for further work, as a source of illuminating and worthwhile questions.)
Here Hasker says he thinks it is possible to detect the influence of Bas Van Fraassen's anti-realism. Although I greatly admire Van Fraassen and his work, I do not accept his anti-realism, which in any event is limited to the realm of the unobservable (the world of quark and gluon, etc.) and does not carry over to theories like TCA.

> What particular hypothesis does Plantinga have in view, so as to be able to say that the evidence is "reasonably probable" on *that* hypothesis? Here it clearly will *not* do to say that the hypothesis in question is simply the denial of TCA. For TCA is a fairly *strong* hypothesis, and its denial is correspondingly weak in its logical force"that is to say, it is compatible with an enormous range of alternatives, and the alleged evidence for evolution may be extremely probable with respect to some of these alternatives and extremely improbable with respect to others" (p. 155).

Why can't I rightly use SC in arguing that TCA is improbable? I think Hasker's answer is given in what he says about the denial of TCA: it will not do, Hasker thinks, to say that the hypothesis in question is just the denial of TCA. Why not? Because TCA is a strong hypothesis, and its denial is correspondingly weak. Why is that a reason for saying that the denial of TCA 'won't do, *i.e.*, can't properly be used in an assessment of TCA of the sort I was proposing? It won't do, says Hasker, because "it is compatible with an enormous range of alternatives, and the alleged evidence for evolution may be extremely probable with respect to some of these alternatives and extremely improbable with respect to others." And I think Hasker would say the very same thing about SC; it too won't do in that context; it too is such that I can't properly argue that the biochemical similarity is reasonably probable on it, so that the biochemical similarity is not strong evidence against it, and is hence not strong evidence for any proposition incompatible with it. As in the case of the denial of TCA, the reason SC can't be used in such an argument is that there are a large number of more specific alternatives compatible with SC - there are many ways in which God might have created life, compatible with SC - and on some of these alternatives the biochemical similarity will be probable, while on others improbable. That seems right; but how exactly is it relevant? Hasker doesn't say; but what he says suggests that perhaps he thinks that as a result, either the biological similarity won't *have* a probability, on that evidence, or at any rate if it *does*, we can't make a decent stab at estimating it.

But this seems to me mistaken. SC is compatible with an enormous range of alternatives, on some of which the alleged evidence (the biochemical similarity) is very probable and on some of which it is very improbable: true enough. Indeed, some of those alternatives *logically entail* that evidence, and others logically entail the denial of that evidence. But why think this means either that the evidence doesn't have any probability on SC or that we can't make a reasonable estimate of what it is? After all, *any* pair of propositions **A** and **B** such that **A** doesn't logically entail **B** are related in that way, and in many of those cases we can make a very good estimate of the probability of **B** on **A**.

Consider, for example,

(1) Nine-tenths of all Mormons live in Utah and Brigham is a Mormon;

and

(2) Brigham lives in Utah.

I suppose most of us would agree that (2) has a probability on (1) and that we can at least make a sensible estimate of that probability. But (1) is compatible with a large number of alternatives; it is probable with respect to some of these and very improbable with respect to others. For example, (2) is very improbable with respect to

(3) Brigham is a policeman in Tucson, and hardly any policemen in Tucson live in Utah;

which is compatible with (1), or even

(4) Brigham is an Oxford don and lives in North Oxford;

which is compatible with (1) and entails the denial of (2). On the other hand, (2) is very probable with respect to

(5) Brigham is an insurance adjuster in Salt Lake City and nearly all insurance adjusters in Salt Lake City live in Utah;

which is compatible with (1), or even

(6) Brigham is an insurance adjuster who lives in Salt Lake City;

which is compatible with (1) and entails (2).

I therefore do not see the force of Hasker's argument for the conclusion that I can't properly use SC in my argument for the conclusion that the biochemical similarity of life is not strong evidence for TCA.

Hasker is reasoning as follows. I say that biochemical similarity is reasonably probable on SC and hence isn't strong evidence for any proposition incompatible with SC, that TCA is incompatible with SC, and that therefore biochemical similarity is not strong evidence for TCA. So I am choosing a certain proposition (SC) and using it to argue that biochemical similarity isn't strong evidence for TCA by pointing out that SC is incompatible with TCA and that the similarity in question is reasonably probable on SC. Now I think Hasker believes that the only sort of proposition that can properly play the role of SC in an argument like that is one that is as *detailed and specific* (or maybe nearly as detailed and specific) as is TCA itself. (Or perhaps the idea is that such a proposition must have as much content as TCA itself.) And this is why he thinks that if I can properly reject TCA (in the sense of holding that it is less probable than its denial) then I must be prepared to produce some proposition that is as specific as TCA or has as much content as it does, and which I think is more probable, on the relevant evidence, than TCA is. But this is incorrect, for the reasons given. I am of course committed to thinking there is some other hypothesis of equal strength that is *true*; but it doesn't follow that there is some other hypothesis of equal strength that is *more probable on my evidence*. (And even if such a hypothesis is more probable on my evidence, it doesn't follow that I know of it.)

If you claim that evolution is improbable, on the evidence (and as a consequence do not accept (believe) it), people often ask you what your alternative is, the idea being that you should be embarrassed if you don't have a good alternative. As we have seen, the question is really illegitimate; one perfectly sensible stance is agnosticism. But isn't there a common sense truth lurking somewhere in the neighborhood of that request?

Perhaps so, and perhaps it goes something like this. In the context of a scientific investigation, you need *some* hypothesis, perhaps only a working hypothesis, to guide your inquiry, to enable you to decide what to do next, where to invest your limited resources of time and energy and

perhaps money. TCA seems to be a fertile source of such guidance. If you reject it and someone asks what the alternative is, they may be asking what hypothesis you propose to perform that function. And if all you can say is "Well, God somehow did it in a way incompatible with TCA" then you don't have much by way of a substitute. So SC doesn't perform that function at all well.

But of course it doesn't follow that if you can't think of a hypothesis inconsistent with TCA that has as much content and is more probable on the relevant evidence, then you can't properly think that TCA is improbable on that evidence. Hasker says

> ...when Plantinga says that the evidence of evolution is reasonably probable on some alternative to the evolutionary hypothesis, we have no way of knowing, in sufficient detail, what that alternative is; thus we are unable even to *formulate the proposition* which we would need to evaluate in order to determine whether Plantinga's claims are warranted (p. 156).

Just here is where we disagree: it seems to me that I can know perfectly well that evolution is unlikely with respect to the evidence even if I don't formulate and endorse any propositions at all that are at the same level of strength or specificity as TCA.

By way of conclusion, four quick comments on other matters. First, McMullin objects to my proposal that Christians should practice science from a Christian perspective; he says that such science will not be *universal*. I replied that science, "if practiced in such a way as to honor the methodological naturalism that McMullin urges is by no means always universal" (p. 98), and I offered as an example Herbert Simon's conclusion that the explanation of the altruism of Mother Teresa, and others, is to be seen in "bounded rationality" and docility. Here Hasker says I missed the point:

> Sociobiology *is* universal, not in the sense that its *conclusions* are acceptable to everyone, but in that its *methods* are open to all: anyone, be he Hindu, agnostic or Calvinist, can pursue the empirical and conceptual inquiries which will validate or refute sociobiology's claims (pp. 158-159).

The suggestion seems to be that anyone can practice or work at sociobiology, even if they do not accept its conclusions, i.e., the explanations it gives of, say, Mother Teresa's altruism. That seems right; but in *that* sense, theistic science, as I was thinking of it, is *also* universal. Its aim is to see how best to explain the phenomena from a theistic perspective; anyone (Hindu, agnostic, or Calvinist) can take part in this enterprise. The conclusions of theistic science may not be *accepted* by non-theists, but the method - trying to see how best to explain the relevant phenomena from a theistic perspective - is indeed open to all.

Second, I say that so far as I can tell (and I am surely no expert) TCA is less likely than its denial on the empirical evidence together with theism, specifically leaving out of account what the Lord intends to teach us in early Genesis. Hasker points out (p. 154) that I may be wrong here, and in particular may be subconsciously importing my beliefs about these matters into my evaluation of the probabilities. Well, yes, of course that's possible; in spite of our best efforts we can't be sure that we aren't influenced, in forming a given belief, by extraneous considerations. I suppose Hasker would concede that he too, in evaluating my arguments, could be subtly and unhappily influenced by his acceptance of the main lines of evolution. All we can do is the best we can do.

But the real question isn't how *I* evaluate that probability: I instead invite *you* to evaluate it. Consider the fossil record and the pattern of sudden appearance and stasis it presents (and the absence of intermediates between the really large groups, such as unicellular life and the Cambrian explosion, between fish and amphibia, reptiles and mammals, reptiles and birds, and the like); consider such vexed questions as whether it is even biologically possible that whales, say, could have developed from some early form of terrestrial mammal, or that eyes or brains could have developed by way of any mechanism so far suggested; consider the fact that our only direct evidence is limited to such things as the directed production of new species of fruit flies from old; consider the fact that God could perfectly well have created various kinds of creatures without recourse to universal common ancestry; and then ask yourself whether TCA is more likely than not on all this. (Of course the question is not whether at least some evolution, even very extensive evolution has occurred; the question whether *all* creatures are related by common descent.) It seems to me that the answer is reasonably obvious. But of course what I hope is that Christian biologists, people who know a great deal more than I do about the evidence, will evaluate TCA from this perspective, unbuffaloed by all those claims of certainty trumpeted by the scientific establishment, and undaunted by the opprobrium visited upon those who dare to dissent.[6]

Third, Hasker reminds us of Barr's claim that the author(s) of Genesis intended to teach a literal six day creation, a young age for the earth, and a worldwide flood. Says Hasker:

> ...Barr's view is absolutely devastating for those who, like Plantinga, hold that the creation story is relevant for deciding on scientific views to be accepted by contemporary Christians. If Barr is right, Plantinga's choices would seem to be stark: Either accept an uncompromising version of Creation Science, or admit the Genesis account is *not* relevant to our acceptance of scientific views about origins (p. 159-160).

Now first, I should have made it clear that I am not convinced that Barr is right in thinking the authors of Genesis did indeed mean to teach a literal six day creation and a young earth. Barr says so, and of course what he says is not to be taken lightly; but other experts disagree, claiming that the form of discourse involved is more like that of (say) a parable, rather than one whose aim is the sober, literal truth. I'm not sure who's right. If Barr *is* right, however, my response, as Hasker notes, would be that the ultimate author of Scripture is God, and it isn't necessarily the case that what God intends to teach is the very same thing as what the human author had in mind; he then points out that this introduces a gap between what the human authors of Scripture

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[6] According to Hasker (p. 155 bottom second column),

> ...it simply is not true that Plantinga is committed only to the negation of TCA. It is quite clear from various things he says, that his view is at least that AGod did something special in creating initial forms of life, then something special in creating some other forms of life, then something special in creating human beings."

Here Hasker and I aren't quite communicating. Just for the record, I am *not* committed to the negation of TCA; all I say is that I think TCA is *less likely* than its negation. But of course that doesn't mean that I *believe* or am committed to its negation. In the Black Beauty case, I believe it unlikely that Black Beauty won; but I am not committed to the proposition that she didn't. (Failing to believe a proposition is of course not the same as believing its denial.) Second, I am also not committed to the proposition that "God did something special in creating initial forms of life, then something special in creating some other forms of life, then something special in creating human beings" (though I do think it more probable than not). What I said in the passage Hasker quotes is that I thought this proposition *more probable*, on theism and the empirical evidence, than TCA. But again, that doesn't mean that I am *committed* to it.

had in mind and what God intends to teach, and adds I haven't given any general directions for crossing that gap.

Of course I haven't; I doubt that there *are* any general directions for crossing it. But the principle that God is the ultimate author of Scripture and that what the human author(s) have in mind may not be identical with what the Lord intends to teach us (of course he may intend to teach people at different historical epochs somewhat different things) was accepted both by Thomas Aquinas and John Calvin (as well as a thousand other Christian thinkers); and anything accepted by both Aquinas and Calvin must be taken very seriously! Indeed, wouldn't *anyone* who accepts anything at all like a traditional view of God's revelation in Scripture agree that the ultimate author of Scripture is the Lord? And that in at least some cases (Old Testament prefigurations of Christ, e.g.) what the Lord intends to teach is not the same thing as what the human author(s) had in mind? True, that can make for difficulties in some cases; we won't always be sure just what it is that the Lord *is* intending to teach in, say, a given passage of the Bible. But that is scarcely news. And is it any easier (consider the prodigious vagaries of contemporary Scripture scholarship) to discover what the human authors *did* have in mind. All we can do is the best we can do; the difficulties Hasker points to are indeed genuine, but they are difficulties for everyone. It isn't as if we know of some course here not subject to difficulty.

Finally, Hasker points out that my suggestion (that Christians should assess and practice science from a theistic or Christian perspective) has its dangers, among them being that "the theological disciplines will assert hegemony and, supported by the ecclesiastical authorities, will attempt to 'call the shots' for the 'lesser' secular disciples" (p. 159). Hasker is right, of course: this course (like any serious enterprise) has its dangers. But again, so does the alternative; and I believe that *those* danger - failing to discern the patterns and currents of spiritual and intellectual allegiances of contemporary culture, intellectual compartmentalization, failing to lead all of life captive to Christ, being conformed to this world - are even worse.

Hasker concludes by claiming that those who attempt to construct a Christian or theistic alternative to contemporary science - psychology and sociology, presumably, as well as physics and chemistry - will

> at best, . . . discover fifty years too late, that the Bible does not "clearly teach" about science what their grandfathers said it did, and that the scientific knowledge their grandfathers rejected should indeed, albeit tardily, be welcomed as true insight into the structure of God's creation. Those who forget history are doomed to repeat it (p. 160).

That is of course a possibility, and another danger lurks here (although I very much doubt that our grandchildren will conclude that, for example, sociobiological explanations *a la* Simon of love and humor and altruism are to be welcomed as true insights into the structure of God's creation). We always run the risk of being wrong, even whoppingly wrong, and in fact often *are* wrong. Of course, it isn't only Christian thought about science that runs this risk; the same goes, obviously, for science itself. Consider 19th century physics: the centerpiece of science, the pride of the Enlightenment, widely considered the apotheosis of human intellectual achievement. At the end of the nineteenth century it was thought that we human beings had pretty much figured out the basic structure and lineaments of the universe; perhaps there were a few loose ends here and there to tie up, but the job was fundamentally done. From our present perspective this is

deeply mistaken, and it can also seem to display a sort of touching ingenuousness. Life (including the life of the mind) is a pretty tough proposition.

So we run a risk; but of course the right conclusion is neither that we should ignore these Augustinian questions, nor that we should automatically assume that if the experts say it, we can't properly object to it from a Christian perspective. Nor can we just assume that Christian theism is irrelevant to the sciences. Clearly, for example, TCA *is* much more probable from a naturalistic than a theistic perspective, and I don't think Hasker means to deny that. Clearly much of contemporary science, in particular contemporary human science such as psychology, economics, and sociology, is deeply inimical to Christian theism. Christian scholars must recognize these things; we should try to see exactly how this antagonism goes, what its limits are, where the antagonism is sharpest, where it is most subtle and dangerous, and so on; and the resulting insight must be made available to the Christian community. And suppose there are serious shortcomings, from a Christian perspective, in the way in which one or another discipline (or parts of one or another discipline) is currently practiced and pursued: then Christians should try to do it better.

William Hasker's Final Word

Should Natural Science Include Revealed Truth? A Response To Plantinga

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I am grateful to Alvin Plantinga for his reply to my discussion of his debate with McMullin and Van Till,[1] and to the Editor for giving me the opportunity to respond. I shall be discussing two main topics: the need for Plantinga to provide an alternative to the theory of common ancestry (TCA), and his proposal for "theistic science."

Both Ernan McMullin and I have urged that if Plantinga is going to reject evolution he needs to present his own view about how the variety of living things on the earth, past and present, came about. Plantinga disagrees, and rightly sees this as a major point at issue between us. Unfortunately, however, he devotes most of his space to refuting a view which I have never endorsed and do not hold. I do not believe that, in general, "if you reject a theory or explanation as unlikely on the evidence, you have to be prepared to propose some other theory in its place," with the rider that the replacement theory must be "equal in content" with the theory it replaces. Certainly I may think it improbable, less likely than not, that a given horse will win the Kentucky Derby, without being prepared to say which horse will be the winner.

My own reasoning for saying Plantinga needs to present an alternative is much more specific. In the interest of conciseness, I present it here in the form of an argument with numbered steps:

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[1] See Alvin Plantinga, "When Faith and Reason Clash: Evolution and the Bible," pp. 8-32; Howard Van Till, "When Faith and Reason Cooperate," pp. 33- 45; Pattle Pun, "Response to Professor Plantinga," pp. 46-54; Ernan McMullin, "Plantinga's Defense of Special Creation," pp. 55-79; and Alvin Plantinga, "Evolution, Neutrality, and Antecedent Probability: A Reply to McMullin and Van Till," pp. 80-109; all in *Christian Scholar's Review* XXI:1 (September 1991); also my article, "Evolution and Alvin Plantinga," *Perspectives in Science and Christian Faith* Vol. 44 No. 3, September 1992, pp. 150-162 and Plantinga's reply, "On Rejecting the Theory of Common Ancestry: A Reply to Hasker," *Perspectives on Science and Christian Faith* Vol. 44 No. 4, December 1992, pp. 258-263. Page references in the text are to these articles.

1. The modern natural sciences over the past several centuries have proved to be by far the best method we have of learning the truth about the structure, processes, and history of the natural world. (They have been incomparably more successful than the speculations of creationists.)

2.Therefore, one who wishes to learn about these things is well advised to study and carry out research in these sciences.

3. Once a theory has enjoyed some success and has established itself in some branch of the natural sciences, the normal and appropriate scientific procedure is to continue to accept that theory until it can be replaced by a superior alternative.

4. Therefore, one who wishes to gain increased knowledge concerning the natural world is well advised to follow the procedure outlined in step 3.

Presumably Plantinga would not agree with this, but it is not clear to me just which step(s) he would object to. Perhaps he would agree with (3) if properly qualified;[2] at least, he has so far shown little disposition to contest it. Is it the case, then, that he supposes he has access to some other method of study (perhaps the method exhibited in his two articles) which is *better, more* likely to reach the truth, than the methods of the natural sciences as generally practiced? I don't know the answer to this; perhaps Plantinga will explain sometime.

In any case, I do have another reason for insisting that Plantinga needs to specify an alternative, and this reason is drawn from his own procedure. In several places Plantinga makes assertions to the - effect that some piece of putative evidence for evolution 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" (p. 23, and see similar remarks on pp. 24, 104, 105, and 107-8). My question is, "*Which* hypothesis of special creation is referred to here"? Plantinga replies that "the hypothesis of special creation I had in mind was just the hypothesis that

SC: God created at least some forms of life specially, in a way that did not involve common descent.

Now, the particular piece of evidence referred to on p. 23 is simply the "similarity in biochemistry of all life." And with regard to that particular evidence, I will admit that SC is specific enough to enable us to see that Plantinga's claim is true; it is reasonably

[2] Plantinga quite properly points out (fn. 4) that a theory inconsistent with known data cannot be accepted as completely true; such a theory may, however, be accepted as substantially true, or approximately true, or perhaps (as Plantinga says) as being "in the neighborhood of truth." And what is required of the replacement theory is that it be more likely to be true, more "truth-like," than the theory it replaces" as shown by its better satisfying the various *desiderata* standardly applied in judging scientific theories.

probable that God, in specially creating a variety of living creatures, would have endowed them with similar chemistries.

But Plantinga makes similar assertions about other types of evidence, and to evaluate *these* assertions we do need a more specific creationist hypothesis. He says, for instance, that "The fossil record fits versions of special creation considerably better than it fits TCA" (p. 104), and also that "the typological structure of the molecular evidence fits very well with various typological views as to how God might have created some forms of life specially" (pp. 107-08). Now "the fossil record" and "the typological structure of the molecular evidence" represent very broad categories of evidence. And with respect to those categories of evidence, I submit we cannot evaluate Plantinga's claim without knowing more specifically *which* creationist hypothesis he has in mind. The crucial question, of course, is *which of the alleged evolutionary transitions does he accept and which does he reject*?

If we are considering the evidence of the hominid fossils, for instance, or the remarkable genetic similarities between humans and chimpanzees, then it makes a great deal of difference whether the hypothesis in question accepts the ape-human transition as valid or rejects it. So as I pointed out before, the question that cries out for an answer is, *at what taxonomic level* are the acts of special creation supposed to have occurred? [3] Plantinga's response, I take it, is that he doesn't know the answer and doesn't need to know. My view is quite different; I believe that without an answer to this question Plantinga's assertion that some special creationist theory is more probable than TCA represents a pious hope but not a proposition that either we or he can seriously attempt to evaluate.

What shall we say about theistic science, Plantinga's proposal for a special, distinctively Christian discipline of natural science which incorporates "what we know by faith, by way of revelation, as well as what we know in other ways" (p. 30)? I think it needs to be emphasized that our disagreements about theistic science are less extensive than they might appear. To begin with, I wish to limit my comments here to the natural sciences; the sciences of human behavior raise different issues which require separate treatment. My disagreement, furthermore, is specifically with the proposal for a natural science which includes content derived from faith and revelation. But I would strongly encourage Christians in the sciences to reflect critically about their scientific work in the light of their Christian faith, and to endeavor to arrive at a comprehensive world view, integrating their scientific understandings with their faith perspective (see my comments on p. 159). Now this task, also, would be included by Plantinga under the heading of "theistic science," and

[3] Thus, my claim is not that the replacement hypothesis must be "equal in content" with the hypothesis it replaces, but that it must be specific enough to enable us to evaluate the evidence which is alleged in favor of the original hypothesis

with regard to that part of his program we have no disagreement whatever. I mean to focus, then, on the idea that natural science should include content derived from revelation. About this, three points need to be made. To begin with, if we understand "theistic science" in this restricted sense, Plantinga's claims about the dangers of rejecting it are unwarranted. He says such rejection carries with it the dangers of "failing to discern the patterns and currents of spiritual and intellectual allegiances of contemporary culture, intellectual compartmentalization, failing to lead all of life captive to Christ, [and] being conformed to this world." I agree that, were Christians in the sciences simply to ignore issues of integration between faith and science, the dangers Plantinga cites would threaten. But I do not think these dangers are especially pressing if these scientists follow the suggestion to intensively pursue issues of faith and science, *but without incorporating content from revelation into their scientific theories.*

My second point is this: When we are working with the restricted conception of theistic science, it becomes apparent that TCA is not merely a handy illustration, but is rather the point on which the whole debate hinges. The reason for this is that the question of evolution vs. special creation is really the only substantial point concerning which it is still claimed that revelation provides knowledge which natural science must incorporate. It wasn't always this way, of course. We all know the sad story of Galileo and the Church; since then, astronomy has generally been left to the astronomers.[4] There is an equally impressive, though less well known, story of the retreat and eventual disappearance of "biblical geology," as one attempt after another to harmonize earth history with data derived from Genesis has gone awry.[5] So if the claim that the Bible teaches special creation has to be given up, there won't be any biblical data left to incorporate into natural science.

My third point is simply to point out that Plantinga has made no case for saying that Scripture *does* teach special creation. To be sure, he thinks it *likely* that God "intends to teach us that human beings were created in a special way and by an act of special creation" (p. 82) (though he doesn't *believe* that God intends to teach us this! [6]). But I

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[4] There remains, to be sure, the question of whether or not the universe has a temporal beginning. But even if we think Christian faith requires an affirmative answer to this question, it surely is not essential that this answer should be part of the science of astronomy. If astronomy were to find no evidence for a temporal beginning we could simply revert to the position of Thomas Aquinas, who held that the world does have a temporal origin but that this fact is undiscoverable by natural reason (and thus is not a part of natural science) and must be accepted by faith.

[5] This history is well documented by Davis Young in *Portraits of Creation*, as well as in his earlier book, *Christianity and the Age of the Earth* (Grand Rapids: Zondervan, 1982).

[6] And herein lies a tale. Misunderstandings have arisen because of the fact that Plantinga and I use the word "believe" somewhat differently (see fn. 5 of his response). Plantinga will say that he believes a proposition only when he can give unqualified assent to that proposition; if on the other hand he considers it a genuine possibility that the view he favors may be mistaken, he will not say that he believes the proposition in question but only that he thinks the proposition likely, or probable. I, on the other hand, use "believe" somewhat more liberally. So I would say of myself that I believe

pointed out in my discussion (and Plantinga doesn't contest this) that he fails entirely to give us any reasons to suppose that his favored interpretation (on this and related matters) is correct (see pp. 153-54). So on the crucial point (with respect to the narrow sense of "theistic science") he gives us nothing to go on.

But things are even worse than this. In my discussion I said that Plantinga should find "devastating" the view of James Barr according to which the author(s) of Genesis intended to teach a literal six day creation, a young age for the earth and mankind, and a universal flood. In reply Plantinga reminds us of his view (which he shares with Calvin and Aquinas) that God is the ultimate author of Scripture, and that what matters is what he (and not the human authors) intends to teach us through it. Quite so, and I, also, am happy to say that what ultimately matters is what God is teaching us in the Bible.[7] But to say this underscores the need for some systematic account of how it is that we distinguish what God is teaching us from the other things the text apparently says which God does not intend to teach us. In short, we need a hermeneutic of Scripture. But here's the rub: I believe (though the point can't be argued here in detail) that the case i*n the biblical text* for saying that God is te aching us that the earth is young, that it was created in six literal days, and that it was covered by a universal flood, is very much on a par with the case for saying he is teaching us about the special creation of human beings. If that is so, then it is extremely likely that any sensible hermeneutic which removes young-earth theory from the scope of "what God is teaching us in the Bible" will do the same for special creationism. In order to defend Plantinga's view, on the other hand, one would have to be able to distinguish, in some principled way, between the special creationism which God supposedly is teaching us, and the young-earth theory which he *can't* be teaching us, since we know on independent grounds that it is false. It's conceivable that this can be done, but my present attitude towards such a project is one of deep skepticism.

I conclude, then, that there is no credible case for the view that Christians should attempt to construct a "theistic natural science" which includes content derived from revelation. But there are other aspects of Plantinga's proposal for "theistic science" which are admirable and deserve to be pursued vigorously.

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that TCA is true, but that it's possible that I am mistaken and that some version of special creation is true instead. Plantinga, on the other hand, would describe this situation by saying that I think TCA is probable but I don't (in his sense) believe it. (I think my way of using "believe" would be accepted by most users of standard English, but I'm not sure about that. Which is to say: I believe my usage is the normal one, but I could be wrong!)

[7] As regards Aquinas and Calvin, however, I think Plantinga is glossing over an important difference between his position and theirs. If Barr's view concerning the intention of the authors of Genesis is correct, then the text of the Bible says, and was intended to say, that the earth was created in six literal days a few thousand years ago and was covered by a universal flood in historical times. If so, then Plantinga would be forced to say in spite of this that God never intended us to believe any of this and in fact it is all definitely false. I submit that both Aquinas and Calvin would have found this to be utterly scandalous.