Does the Bible Conflict with Science?

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This article will appear in Steven B. Cowan and Terry L. Wilder, eds., *In Defense of the Bible: A Comprehensive Apologetic for the Authority of Scripture* (Nashville: BH Publishing Group, forthcoming).

Essays on whether the Bible and science conflict typically come in four varieties: (1) Yes, of course they conflict, and so much the worse for the Bible because science shows that the Good Book is riddled with errors and misconceptions. This is the line taken by atheists such as Richard Dawkins.[1] (2) Yes, of course they conflict, and so much the worse for science, which, far from being unbiased and self-correcting, is an ideologically driven enterprise committed to a materialistic worldview. True science, properly so called, needs to take its cues from the Bible. This line is taken by many young-earth creationists.[2] (3) No, they don't conflict because, by their very nature, they can't conflict—the Bible and science address fundamentally different aspects of reality. Rather than compete, they complement each other. Stephen Jay Gould's NOMA (Non-Overlapping Magisteria) and much of the Templeton-funded science-religion dialogue take this line.[3] (4) Not only don't the Bible and science conflict, but, as good fortune would have it, they overlap and speak in unison where they do. This is the line of concordists or harmonizers.[4]

Given a forced choice among these positions, I would go with the last. This is where my sympathies lie. To put my cards on the table, I am a biblical inerrantist. Thus I hold that the Bible doesn't err in all matters to which it speaks, not only in faith and morals but also in history and science. Though rejecting a dictationist view of the Bible's formation, I hold to its plenary verbal inspiration—the Bible, down to its very words and letters, is, in my view, inspired. On some of the most contentious areas in the dialogue between science and theology, I take a thoroughly traditional line. Adam and Eve, the progenitors of the human race, were, in my view, exactly two people specially created by God apart from primate ancestors. More generally, common descent, the claim that all organisms trace their lineage to a common ancestor is, in my view, ill-supported by the scientific evidence. I regard the power of evolutionary processes as wildly exaggerated by the scientific mainstream. In particular, natural selection has, in my view, little creative potential and can at best explain small-scale evolutionary changes.[5]

Given such views, I could write this essay along traditional concordist lines, describing how mainstream science gets it wrong where it conflicts with the Bible and indicating how certain tradition-bound interpretations of the Bible get it wrong where they conflict with rigorously established areas of science.[6] This genre has filled the

apologetics literature at least since William Paley's *Natural Theology* (1802). It has merit, but I'm not convinced we need more of it. Apologetics, it seems to me, needs to do more than simply shore up the faith of the faithful—it needs to shake up the unbelief of the unbelieving. In examining whether the Bible and science conflict, I would therefore like to challenge those who think they do as well as those who think they don't.

FAITH, REASON, AND APOLOGETICS

Philosophers and theologians like to place views, their own and others', in tidy categories. With their own preferred view, they want to show that everything conforms with it neatly and tightly. With unwelcome alternatives, they want to show that these are riddled with dissonance and incoherence. Although I think Christianity, conceived as a worldview, has far more going for it than any of the other worldviews out there, we misrepresent the cogency of the Christian worldview by suggesting it is a slamdunk once we know the relevant facts, concepts, and arguments.

Richard Dawkins is on record as saying that anyone who denies evolutionary theory is either ignorant, stupid, insane, or wicked.[7] For him, evolution is like one of Descartes' clear and distinct ideas—short of gross mental malfunction, to entertain it is to accept it. When it comes to broader worldview questions, however, such certainty is unsustainable. There's too much that we don't know. Moreover, our reasoning about the truly big questions always contains leaps or discontinuities, which, though often quite plausibly spanned, cannot be filled in with anything like mathematical precision. To say that the reasonableness of the Christian faith is not a slamdunk is not to embrace an irrationalism that denies any concord between Athens and Jerusalem or thinks it impious to use one's natural intellect to try to understand aspects of the faith. It seems that both rationalism and irrationalism can be roads to idolatry, and that God countenances neither.

If apologetics could nail down the truth of Christianity with such rigor that one would, as Dawkins puts it, have to be ignorant, stupid, insane, or wicked to reject it, then we could depend solely on our intellects to determine the truth of Christianity and thus take pride in how smart we are for seeing its truth. In our pride, we would thus turn our intellects into an idol. But renouncing the intellect and its effectiveness in the apologetic enterprise faces no less a temptation to pride and idolatry. "We can understand nothing about God except what he has directly revealed to us," be it through his Word or by the Holy Spirit or through some other means that are not the common patrimony of all humanity. In that case, it's only the holy few who are privileged with seeing the light of truth. Moreover, in dismissing apologetics for its emphasis on rational argument, they must use words and reason to argue why the truth of God may not properly be defended through rational argument. The irrationalists on apologetics thus cast themselves as occupying the intellectual high ground (based on what, reason?) over the poor benighted rationalists who think that reason can take us at least some distance in the direction of God.

The truth about apologetics therefore lies somewhere in the middle. It is neither a slamdunk method for compelling faith nor a feeble method with no purchase on faith. Indeed, the New Testament takes such a middle course, underscoring the need for apologetics, but without overstating or understating its importance. Viewed rhetorically, apologetics is about persuasion—persuading people that the truths proclaimed in the Gospel hold up under scrutiny. And that's exactly what we find in Scripture.

Proclamation throughout the New Testament works hand-in-glove with persuasion. Believe because _____, where the biblical writer fills in the blank, and the blank constitutes a means of persuasion. The blank is some stated reason, which may be the miracles of Jesus (John 14:11), or the eye-witness testimony of the apostles (Acts 2:32), or an appeal to shared philosophical sensibilities (Acts 17:28). The reason given helps to support faith, but it never is quite enough to mandate faith, at least not on strictly intellectual grounds. If anything, the mandating of faith comes from the heart rather than the head—it is moral rather than intellectual. It's as though God were saying, "You've been given enough to believe, and even if your mind is not completely satisfied, your heart, were it not corrupted, should be satisfied, so your refusal is culpable even if you can find loopholes on purely intellectual grounds."

To see this, consider Romans 1:18–20. There Paul attempts to make sense of human unbelief and, in every instance, finds it inexcusable:

> The wrath of God is revealed from heaven against all ungodliness and unrighteousness of men, who suppress the truth in unrighteousness, because what may be known of God is manifest in them, for God has shown it to them. For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they are without excuse.

Thus, when people fail to believe in the Christian God and then try to justify their unbelief on intellectual grounds by claiming insufficient evidence, their failure is not intellectual but moral in that they willfully suppress what light their intellects ought to be giving them.

Still, God seems to avoid making himself over-obvious. Isaiah 45:15 stresses the hiddenness of God: "Verily thou art a God that hidest thyself, O God of Israel, the Savior." Some Christian thinkers, notably Pascal, have made much of the hidden God—the *Deus absconditus*.[8] Although, in my view, Pascal went a bit overboard reveling in divine hiddenness, there is an important truth here. God certainly does reveal himself, both in natural and in salvation history. To those with eyes to see, that evidence is compelling. But it is not overwhelming, certainly not for those who prefer to remain unconvinced. It's not just that God respects human freedom. It's that our freedom must respect God—a good heart will use its freedom to seek after God and find him, a corrupt heart will not.

Why did Judas Iscariot think he could get away with betraying Jesus? If Jesus had, at every moment in his ministry, displayed a clairvoyance that left no doubt that he knew

exactly what his disciples were thinking and planning, would Judas have betrayed him? In that case, would Judas have dared to betray him? But Jesus, in his humanity, seems not to have continuously hit the disciples over the head with his divinity. Even in the miracles of Jesus, we find less flamboyance than one might expect from the supreme being of the universe (albeit one taking human form). For instance, nowhere in the ministry of Jesus, as described in the New Testament, do we see him miraculously replace a person's missing limbs or other body parts. In every instance, however diseased or misshapen, what Jesus heals is there already.[9] Jesus in Mark 11 talks about a faith that can move mountains, but Jesus himself left Mounts Zion, Hermon, Sinai as well as all the other mountains in Israel exactly where he found them.

When Jesus resurrected, he was not immediately identifiable with his former self. Compare this to Lazarus who, when raised from the dead, was clearly his old self. The disciples on the road to Emmaus recognized Jesus only after he broke bread with them (Luke 24:30-31). The apostle Thomas refused to believe that Jesus was raised until he could see in Jesus the marks of crucifixion (John 20:26-28). And even when Jesus was nearing his ascension, right before he gave the Great Commission, Matthew 28:17 records, "When they saw him, they worshipped, but some doubted." Some doubted? What did they doubt? Presumably that this was the same Jesus who had walked with them before the crucifixion and that he was indeed the God of the universe. Could not Jesus have made his resurrection clearer to the disciples, thereby removing all doubt? Why didn't Jesus appear to the disciples with exactly the same physical characteristics as his pre-crucifixion form?

Skeptics love to jump in at such points and sneer, "See, this just shows that Christianity is bunk." But the absence of total clarity that would remove all doubt is hardly reason to deny that there is sufficient clarity to engender faith, especially in those with a pure heart. Jesus himself says in the Sermon on the Mount that seeing God is reserved for those with pure hearts (Matthew 5:8). This seems to be the pattern in God's revelation of himself: provide enough evidence to convince those who are honestly seeking truth but not so much evidence as to force belief on those who prefer to believe a lie.

No doubt, God could make his role as the creator of nature clearer by signing every sunset, in the bottom right corner, "Made by Yahweh." God could have implanted in every string of our DNA the phrase, perhaps in ASCII code, "Made by Yahweh." But who other than God could make a sunset? And who other than God could have designed our DNA? Yet in that case, why should he sign either? Such a signature would constitute an undignified display unworthy of the author and unnecessary for all but the most recalcitrant observers, who, save for God's grace, include each of us.

Let's consider this point about signatures a bit further. Typically, we sign the things that we make because our role in making them might otherwise be lost. We want our identity to be known through the things we have made. We want the recognition for having made them, and signing things is how we ensure that. But when the set of possible makers is, and could only be, a single individual, there's no need to sign something. To

sign something, in that case, might even signify affectation or insecurity, which would be unworthy of God in his greatness.

Indeed, if we found that nature were full of "Made by Yahweh" signatures, skeptics could counter: "The God who made nature and has placed his signature throughout it is clearly neurotic, worried that he gets proper credit for his works. But God, if he exists, would have to be perfect, and not a neurotic who is scrupulously concerned about obtaining proper credit. Accordingly, it follows that God doesn't exist." Skeptics, it seems, would not be satisfied even if God made himself more obvious.

A poignant example of this mindset comes from a website with the memorable domain name whywontgodhealamputees.com. On this website, one reads,

> Does god heal amputees? The Bible clearly promises that God answers prayers. For example, in Mark 11:24 Jesus says, "Therefore I tell you, whatever you ask for in prayer, believe that you have received it, and it will be yours." And billions of Christians believe these promises. You can find thousands of books, magazine articles and websites talking about the power of prayer. According to believers, God is answering millions of their prayers every day. So what should happen if we pray to God to restore amputated limbs? Clearly, if God is real, limbs should regenerate through prayer. In reality, they do not. Why not? Because God is imaginary.[10]

This website draws inspiration from the 19th century atheist Anatole France, who is widely quoted for dismissing the purported miracles at the French shrine Lourdes. France's dismissal of miracles at Lourdes took the form of a question: why do we only see crutches at Lourdes but not wooden legs? Crutches are for those who have legs, but their legs are not working very well. Wooden legs are for those who have no legs at all. To leave a wooden leg at Lourdes would testify to a lost leg that grew back. By contrast, to leave merely a crutch testifies to an existing leg that might have gotten better on its own.

Yet France, in raising this objection, also considered the possibility of finding wooden legs at Lourdes. Writing in *The Garden of Epicurus*, in a passage rarely quoted by atheists in full, France remarks,

> Happening to be at Lourdes, in August, I paid a visit to the grotto where innumerable crutches were hung up in token of a cure. My companion pointed to these trophies of the sick-room and hospital ward, and whispered in my ear: "One wooden leg would be more to the point." It was the word of a man of sense; but speaking philosophically, the wooden leg would be no whit more convincing than a crutch. If an observer of a genuinely scientific spirit were called upon to verify that a man's leg, after amputation, had suddenly grown again as before, whether in a miraculous pool or anywhere else, he would not cry: "Lo! a miracle." He would say this: "An observation, so far unique, points us to a presumption that under conditions still undetermined, the tissues of a human leg have the property

> of reorganizing themselves like a crab's or lobster's claws and a lizard's tail, but much more rapidly. Here we have a fact of nature in apparent contradiction with several other facts of the like sort. The contradiction arises from our ignorance, and clearly shows that the science of animal physiology must be reconstituted, or to speak more accurately, that it has never yet been properly constituted."[11]

This remarkable passage shows that no evidence could ever get a hardcore atheist to admit that God exists, much less that the Bible is true. In every case, such atheists will invoke alternative naturalistic explanations. And even if no such explanation is forthcoming, they can rationalize that no actual miracle occurred, simply asserting that we don't know the underlying naturalistic causes. Disbelieving in God and ridiculing the Bible, they nonetheless have unbounded faith in the power of nature. Note that France is not saying that science, as a limited form of inquiry, can only admit naturalistic explanations, and therefore that a regrown leg might signify a miracle beyond the reach of science. Rather, he is saying (based on what except his atheist presuppositions?) that a naturalistic explanation most assuredly exists, even for legs that grow back, and that the only challenge is for scientists to find that explanation. This is scientism (the view that science is the only legitimate source of knowledge), and it stacks the deck so that the very possibility of miracles is ruled out from the start.

I have offered these preliminary remarks in an essay about presumed conflicts between the Bible and science because this topic is too easily diverted down unproductive paths. God's revelation, whether in salvation or natural history, is good enough to warrant Christian faith. Certainly, God's revelation could have been more obvious. Likewise, it could have been less obvious. So let us grant that the fit between science and the Bible is somewhere in the middle—not totally neat but not totally at odds either. If the fit were too neat or too contrary, there would be nothing to argue about—this paper would be unnecessary and we wouldn't have all the different approaches to the dialogue between science and faith described earlier. Still, I want to argue that the fit between the two is plenty good and not nearly as bad as critics make out.

THE COMPATIBILITY OF SCIENCE AND THE BIBLE

No one thinks there is a conflict between Rand McNally and Betty Crocker—between map making and cake baking. Indeed, how could there be? The two are independent enterprises. Not so the Bible and science. Even those who argue for complementarity or compartmentalization of the two have to address the presumption that the two seem to be speaking to some of the same topics and thus are not entirely independent. Where did the Earth come from? How did life originate? What does it mean to be human? These questions and many more lie at the intersection between science and the Bible. And even if we think the two are not in outright conflict, the Bible and science display certain tensions. I want in the sequel to unwind some of these tensions, showing that the Bible and science are far less at odds than is often imagined. At the same time, some tensions

(such as over the age of the earth) show no signs of being resolved quickly. But even in such cases, I want to suggest ways in which the tensions can be alleviated.

The Christian Roots of Modern Science

With neo-atheism on the rise, it's common these days to hear that the Bible is composed of bronze-age myths that fly in the face of science.[12] The Bible, we are told, is so out of touch with our present scientific conception of the world that it is best left on the trash-heap of pre-scientific superstition. But how out of step, really, is the Bible with modern science? Most of the founders of modern science, from Copernicus to Kepler to Galileo to Newton, venerated the Bible. Even in the 19th century, most of the top scientists were persons of faith. Take, for instance, James Clerk Maxwell, the preeminent physicist of that time. He spent every Sunday away from physics reading theology.[13]

So, somehow, many top scientists have seen no fundamental conflict between the Bible and science. In fact, some historians of science have argued, notably Stanley Jaki, that the worldview of the Bible, in which God created a world separate from himself, allowed scientists to see the world as the invention of a mind (God's) and thus to view their role as trying to track how this mind had constructed the world ("reading God's thoughts after him").[14] Moreover, because the world was an invention, it was contingent—God could have invented it differently. Thus, experimentation with the world was necessary to see what God had actually done in creation. Arm chair philosophy was therefore no longer the proper route for understanding nature. And finally, because the world was not identical with God, experimentation with the things of the world was not a sacrilege. Indeed, it could even be sacramental, as a means for uncovering God's wisdom and glory in creation.[15]

Christianity's role in inspiring the rise of modern science cuts little ice these days. A few years back I was lecturing at the University of Toronto when a biologist on faculty confronted me over my Christian faith. To him it was incomprehensible that any scientist could believe in God. I asked him, "What about Newton?" He instantly shot back, "Yeah, but Newton didn't know about evolution." According to this biologist, evolution so thoroughly undermined belief in God that it led to a mass exodus of scientists from the faith. He had a point: the percentage of scientists, especially in the upper echelons, who keep faith has significantly decreased with the advent of Darwin and the widespread acceptance of his theory.[16] But it is also true that many outstanding scientists currently on the scene are Christians, take the Bible seriously, and question evolutionary theory.[17] Thus, a simple head-count of scientists who believe or disbelieve in the biblical God will not answer whether the Bible and science do in fact conflict—we can each point to our favorite believing or unbelieving champions of science. For that reason, we need to look deeper.

The Bible as a Non-Scientific Text

Let's therefore turn to the Bible itself. The world rendered by the Bible, we are told, is radically different from the world rendered by contemporary science. Skeptics portray the Bible as scientifically out of touch. Such a charge, however, stems from a mistaken

and uncharitable reading of the Bible. To see this, it helps to compare the Bible with some of the other highly regarded literature of antiquity and note how the Bible avoids the scientific "boners" that abound in that literature. This essay is not the place for an exhaustive examination of such mistakes, but I'll mention two here because they set off the Bible as far less problematic scientifically than much of that literature.

Part of the reason the Bible is able to avoid scientific boners is that it tends not to address scientific topics directly and thus avoids the degree of specificity that could get it into scientific trouble. The Bible, for instance, certainly mentions that humans have teeth ("an eye for an eye and a tooth for a tooth"). But nowhere in the Bible does it say how many teeth humans have in their mouths. Aristotle, however, did attempt to answer this question and claimed, in his *History of Animals*, that men have more teeth than women.[18] In fact, men and women have the same number of teeth, as Aristotle might readily have determined had he simply looked into human mouths and started counting. But that's the point: in scientific matters that can readily be investigated through direct observation, the Bible seems unproblematic.

Aristotle wrote 300 years before New Testament times. Basil the Great, regarded in his day as the preeminent theologian, and writing 300 years after New Testament times, committed a scientific boner at least as bad. Writing in his *Hexaemeron* (a collection of sermons on the days of Genesis 1), Basil describes the following case of two species interbreeding:

> The viper, the cruelest of reptiles, unites itself with the sea lamprey, and, announcing its presence by a hiss, it calls it from the depths to conjugal union. The lamprey obeys, and is united to this venomous animal. What does this mean? However hard, however fierce a husband may be, the wife ought to bear with him, and not wish to find any pretext for breaking the union. He strikes you, but he is your husband. He is a drunkard, but he is united to you by nature. He is brutal and cross, but he is henceforth one of your members, and the most precious of all.[19]

This passage is biological nonsense. The viper and the sea lamprey are different species (or different kinds, to use the biblical term). They do not interbreed and indeed cannot interbreed. Moreover, Basil attempts to draw from this biological nonsense a moral lesson that is at odds with Scripture and is morally repugnant. Basil, who was celibate and never married, is here saying that no amount of abuse of a wife by her husband is sufficient to justify her leaving him. Even the Bible, with its rigorous views on marriage and divorce, doesn't go that far (see, for instance, 1 Corinthians 7, where, under certain circumstances, the wife is free to leave her husband). Basil presents natural theology at its worst: looking to behaviors of lower animals to draw unbiblical moral lessons for humanity is bad enough, but then getting the very biology wrong is beyond the pale.

In the Westminster Shorter Catechism, the third question reads, "What do the Scriptures principally teach," to which the answer reads, "The Scriptures principally teach what man is to believe concerning God and what duty God requires of man."[20] This

answer, it seems to me, is on the mark. The fact is, the Bible tends not to venture into areas where it could commit gross scientific blunders, such as assigning the wrong number of teeth to humans or claiming that distinct species are capable of interbreeding when in fact they cannot. Simply in virtue of the type of book the Bible is and the types of things its authors are trying to get across, it avoids many of the scientific boners of antiquity.

Nonetheless, for many contemporary critics of the Bible, the mere fact that the Bible avoids certain obvious scientific mistakes does little to resolve the tensions that they perceive between the Bible and science. To them, the Bible appears outlandish. It describes a world in which demons account for mental, and at times also physical, illness; in which miraculous events occur repeatedly and openly (not in some hidden corner but where CNN could send a film crew to record those events if they were happening today); in which curses and blessings seem to have real efficacy; in which prophets accurately foretell future events; and in which the writers of Scripture seem to display an understanding of the cosmos that we now know with confidence to be wrong.

Although these concerns need to be taken seriously, they are answerable provided one recognizes four things: (1) the antiquity of the Bible, which assures that some of the ways it puts things are bound to strike modern readers as foreign; (2) the distinction between phenomenological and realistic uses of language; (3) one's prior commitment, or lack thereof, to naturalism; and (4) the primacy of text over authorial intention in interpretation. These points are crucial to maintaining the Bible's reasonableness in the face of science. Let's examine them in turn.

The Antiquity of the Bible and Face-Value Meaning

The first is straightforward. The Bible is an old book written by people in cultures distinct from our own. Its conceptual grid differs from ours. In consequence, we need to read it charitably, attempting to understand its claims on its own terms. A common point of contention between theological conservatives and liberals is over whether the Bible should be interpreted literally. In a sense, all interpretation must be literal in that it must pay attention to the actual letters on a page (that's where all interpretation begins). But in these debates the real question is whether one is bound, as a faithful interpreter of Scripture, to adopt its most obvious face-value meaning.

It would seem that the biblical writers themselves were not literalists in this sense. For all the references in the Old Testament to various events taking "forty years," very few of them probably refer to periods of time that are even close to 14,600 days (= 40 × 365). Jesus himself said many paradoxical things that were not meant to be taken literally (such as gouging out one's eye if it causes offence). That's not to say we should eschew the face-value meaning of Scripture. At times—perhaps most of the time—the right interpretation is the most obvious interpretation. And at other times it is not. Hence Paul enjoins that Christians "rightly divide the word of truth." (2 Timothy 2:15)

The Bible's Use of Phenomenological Language

The second point, about phenomenological and realistic language, relates to the first. In recognizing that the Bible is an old book written by people with cultural backgrounds quite different from our own, we need to keep in mind that they didn't distinguish between appearance and reality with quite the same obsessiveness that we do. This is not to say that they didn't recognize the distinction. But their language tends to focus more on appearance and theological significance than on underlying reality—it is more phenomenological than realistic. Take the claim in Psalm 93 about the world being firmly established so that it cannot be moved. Some Bible-believing contemporaries of Copernicus took this psalm to mean that the earth doesn't actually move around the sun, implying that Copernicus must be wrong.[21]

Anticipating such concerns, Osiander, Copernicus's publisher of *De Revolutionibus Orbium Coelestium*, made sure, in the foreword, to stress that Copernicus's theory provided a way of accounting for the movements of heavenly bodies without claiming that these were their actual movements (Copernicus's theory was thus attempting to "save the phenomena," thereby meeting a criterion for empirical adequacy known to the ancient Greeks).[22] Osiander thus enabled Copernicus to keep peace with the Catholic Church in a way that Galileo could not, for Galileo claimed that the earth did not merely appear to rotate around the sun but actually did so. Accordingly, when Copernicus proposed his theory, given Osiander's foreword, he could be seen as providing one way of describing what heavenly bodies appeared to be doing without committing himself to the literal truth of this description. Motion, as we know now and Copernicus knew then, is relative. We may think we are moving, but in fact we may be stationary and other things may be moving relative to us.

Phenomenological language has a certain logical priority over realistic language. The world, in the first instance, presents itself to us via phenomena, which are then most naturally described phenomenologically. Realistic language, which purports get at the underlying reality behind these phenomena, is then logically downstream. Even when we conduct scientific experiments to try to get at the underlying reality behind phenomena, we depend on phenomena. When, for instance, Charles Wilson conducted his cloud chamber experiments tracking electrons, what he saw were tracks in the cloud chamber. The underlying reality—that is, the electrons tracing those tracks—were inferred from the phenomena produced through his experiment.

The distinction between phenomenological and realistic language helps mitigate the jarring to our modern sensibilities when the Bible speaks of physical events having spiritual causes. Take, for instance, demons. Anyone acquainted with mental illness recognizes that some psychological conditions give all appearance of an invisible malevolent force acting to ruin the sufferer's life. Is the underlying reality here an evil spirit that needs to be exorcised? Is it a brain imbalance that needs to be medicated (as with bipolar disorder that responds to lithium)? Is it some combination of the two?

I, personally, take the accounts of demons in the New Testament literally and don't try to explain them away in purely medical terms. My point, however, is that regardless of what one thinks about the ultimate reality of demons, the language of demons, treated

phenomenologically, makes perfect sense. Take drug addiction. We sometimes describe people addicted to drugs as "having a monkey on their back." The monkey isn't visible. One might say it's a metaphor. Or one might say it's a demon. Does it matter? Recently a friend of mine committed suicide. His mother had committed suicide years earlier. As a mutual acquaintance put it, his mother's suicide was "a demon he faced all his life." Even in our colloquial language, we refer to someone who engages in self-defeating behaviors as wrestling with one's "demons."

Naturalism and Miracles

Now a skeptic of the Bible might reply that metaphorical references to demons are fine and well, but that the Bible also teaches a full-scale demonology in which demons are real spiritual beings that can affect both body and mind. Let's grant, for the sake of argument, that this is in fact the biblical teaching. That brings us to our third point—one's prior commitment to naturalism. Even if a skeptic were inclined to read the Scriptures charitably and thus interpret references to demons in modern medical terms, he will still find plenty that's objectionable in the Scriptures. Skeptics typically have a prior commitment to naturalism, the view that nature operates by unbroken natural law and that supernatural powers play no role in the world. In other words, they are naturalists. Now the Bible is clearly a supernatural book in the sense that it attributes many extraordinary events to supernatural agency. So here we will necessarily have to part company with the naturalists.

As orthodox Christians, we believe that the miracles, prophesies, answered prayers, blessings, and curses recorded in Scripture happened and that God or lesser spiritual agencies (angels and demons) played a key causal role. Naturalists, obviously, reject this view. But in doing so, are they more rational and measured than supernaturalists? That's how naturalists usually portray themselves. A world not governed by unbroken natural law is for them a lunatic asylum, one in which capricious gods operate without restraint, violating rational expectations and rendering science impossible. When money in a safe is missing, don't look for a human thief; instead, conclude that the devil made it magically dematerialize—that's how naturalists view supernaturalists. According to naturalists, only a world operating by unbroken natural law is rational and open to scientific inquiry.[23]

But the doctrine of divine omnipotence, which teaches that God can do anything that's logically possible, hardly entails that God need act capriciously or unreasonably. God, who is supremely rational, who embodies all rationality, who in Jesus was reason (*logos*) incarnate, can surely be trusted to act reasonably. By wisdom God created an orderly world, a cosmos, that provides a window into his glory. True, that window is darkened to us on account of sin, but the glory of God is still evident in creation. Creation presents us with regularities—the sun rises and sets, seasons come and go. But the God who created this world and endowed it with regularities is not bound by them. If he chooses, he can override the laws of nature—they are, after all, part of his creation. For the naturalist, the laws of nature are primary: everything that happens must in principle be characterizable by them. But the God who created nature is free to intervene in nature:

God can do things that the causal powers of nature, left to themselves, could never accomplish.

Note that when God overrides natural laws by intervening in the world, he is not violating or even suspending these laws. The laws and the natural powers they characterize are still operating, but they are not having their ordinary effect because other powers are also operating. Divine intervention here parallels human intervention. Imagine, for instance, that an earthquake causes a lamp to fall off your desk. You intervene by holding out your hand and breaking the fall before it smashes to the ground. Your intervention did not stop gravity from working or the laws of gravity from applying. Rather, by intervening, you overrode what gravity would otherwise have accomplished (in this case, destroying the lamp). In the science-theology dialogue, "intervention" has become a dirty word, as though it is beneath God's dignity to intervene in the world. Yet if we're sick, we certainly desire the intervention of a physician. God is the world's physician, and the Bible clearly teaches that God intervenes.

But when God intervenes in the world, must he act unreasonably or capriciously? To see that this is not the case, consider again human intervention. No law of nature characterizes how your car navigates from home to work. You, as the driver, are free to direct the car any way you like. You could drive capriciously, weaving the car madly between lanes. You could also drive it into a ditch. But, as a rational agent, you don't engage in such bizarre acts. Your purpose is to drive safely to work, and that's exactly what you do. If intelligent agency in human contexts can avoid the charge of capriciousness or unreasonableness, why not in the context of divine action? Why can't God, by intervening in the world, direct it to fulfill his good purposes? And if the world has no natural capacity to fulfill certain of God's good purposes, why can't God, who transcends nature, exercise powers in nature that nature itself doesn't have? Christ's resurrection is a case in point: bodies that have been dead three days do not naturally get up and go back to living. That requires a supernatural act.

Naturalism is best viewed as a Pelagian heresy. Pelagius, the fifth century heretic, proposed that humanity already has everything it needs to be saved. Accordingly, the faith and good works that bring salvation were for him entirely under human control and required no divine aid. By simply directing their wills aright, said Pelagius, humans can achieve salvation. Orthodox Christianity has always regarded Pelagianism as a heresy, teaching instead that humans require God's grace to be saved.[24] And what is grace? It is the gift of something that we cannot manufacture on our own. Pelagianism closes off humanity from divine grace, regarding it as unnecessary. Naturalism does the same at the level of the cosmos, closing it off from effective divine action. Humans need divine intervention to be saved. Likewise, the world needs divine intervention to fulfill God's good purposes. Pelagianism denies the one, naturalism the other.

The Primacy of Text in Interpretation

The final point to keep in mind in maintaining the Bible's reasonableness in the face of science is hermeneutic and stresses the primacy of text over authorial intention in the interpretive enterprise.[25] When I teach apologetics, I find that students have the most

difficulty with the point. It is natural to think of verbal communication as an attempt to represent the intention of the author (whether speaker or writer), and thus regard successful interpretation as uncovering the author's original intention. But when interpreting a text, we typically have no direct access to the mind of the author and what he or she intends. All we have are words and gestures. Authorial intention is always inferred. It is always logically downstream from text.

We readily appreciate this point in ordinary situations. For instance, imagine you're driving down the road with your spouse, lost in a strange town. The GPS isn't working. You're at the wheel, your spouse is frantically trying to read a map. You come to a crucial intersection and your spouse says "turn right" but really means turn left. How do you know that your spouse really meant to turn left? Because, after you turn right, your spouse utters in frustration (text again), "Oh no, I meant for you to turn left." And so, after turning right, you make a U-turn and drive in the opposite direction. In such cases, the mismatch between text ("turn right") and intention (expressed subsequently by "I meant for you to turn left") becomes clear because the texts interact dynamically, with one clarifying the other.

But with written texts, unlike oral exchanges, where the author is unavailable for further clarification, we are simply left with a given text that needs to be interpreted. Our natural tendency then is to think that because authorial intention is *causally* upstream from text, authorial intention should have primacy over text. Primacy in that case, however, is not hermeneutic but causal (authorial intention is causally responsible, in the sense of agent causation, for the author's text). Yet, when it comes to making sense of the text itself, the primacy is hermeneutic, and we must start and end with the text. Ordinarily, assigning priority to text in this way is not a problem. Indeed, we don't fault the spouse at the wheel for turning right when the spouse on the passenger side utters "turn right" but in fact meant that the driver should turn left.

But the primacy of text in the hermeneutic enterprise does run into resistance when we have faulty preconceptions about an author's intention and employ them unbidden in our interpretive efforts. C. S. Lewis makes this point when he describes a young girl who conceived of poison as "horrid red things."[26] Thus, when she looked at non-red substances, she didn't regard them as poisonous, even if they were. Her misconception about poison could easily lead her to mistakenly describe some poisons as non-poisonous. And yet, if she were to utter "that stuff is poisonous because mommy said so," it would be mistaken to dismiss her warning because of her erroneous conception of poison. Her statement might be accurate and true despite her faulty conception of poison.

Now it seems that this disjunction between what the biblical writers actually wrote versus what their worldview led them to believe about what they wrote is signally important in how we interpret the Bible generally and how we make scientific sense of the Bible in particular. It may well be that the biblical writers thought that the earth floated in water and that the sky was a giant canopy with stars embedded in it like jewels. Such a cosmology appears to have been widespread in the ancient near east, and the biblical writers were probably not immune to it. But when we look at the actual text of the Bible, are we required to interpret it that way? Is this misconception of the cosmos

something we can actually get out of the text? Or, like the young girl of C. S. Lewis's acquaintance, who despite her misconceptions about poisons could nonetheless utter true statements about them, did the biblical writers, even if laboring under certain misconceptions about the cosmos, make claims that were and remain cosmologically sound?

As a biblical inerrantist, I'm bound to answer yes to this question. All the same, biblical inerrancy doesn't demand that this answer be given reflexively. Biblical inerrancy is falsifiable in the sense that this position depends on the Bible not saying crazy and patently false things. The girl in C. S. Lewis's story would be ascertainably wrong if she claimed that aspirin in large doses is non-poisonous because, when you crush it up, no horrid red things are visible. Perhaps the biblical writers had similar misconceptions about the cosmos. But my point is that if they did, they did not give expression to their misconceptions and, as a result, steered clear of error. If the Bible explicitly stated that the sun is smaller than the earth or that the moon is made of cheese, it would be ascertainably wrong and give evidence of a mistaken underlying cosmology. But such errors are, I submit, not evident in Scripture.

By emphasizing the primacy of text over authorial intention in interpretation, one avoids the hermeneutic pitfall in which one assumes the biblical writers had particular misconceptions and then reads the text to confirm those misconceptions. Given the primacy of text over authorial intention, the critic of the Bible must show that the text fails on its own terms and not with the help of some presumed faulty ideas attributed to the biblical writers. Granted, this doesn't eliminate all scientific difficulties associated with the Bible, but it does significantly mitigate them.

Throughout this discussion about text and authorial intention, I have referred to the "biblical writers" rather than to the "authors of the Bible." This was deliberate. As Christians, we regard the Bible as God's word—God, ultimately, is the author of the Bible. To be sure, from a purely human vantage, the biblical writers are the Bible's authors. But, as Christians, we regard God as intimately involved in all aspects of the world, and specially so in the formation of the Bible. The Christian doctrine of divine concursus holds that even in ordinary events that seem to have ordinary causes, God is active. Genesis 50:20 is the locus classicus for this view: Joseph's brothers sold him into slavery with evil intent; but God, wanting to send Joseph to Egypt to save the Israelites from a coming famine, acted with good intent—even through the misdeeds of his brothers. Thus, in the formation of the Bible, despite whatever scientific misconceptions the biblical writers may have had, God expressed his intentions accurately and preserved them from error, scientific and otherwise.

In stressing the primacy of text over authorial intention in interpretation, I don't mean to place myself at odds with that staple of evangelical hermeneutics in which grammatico-historical exegesis has as its principal aim to approximate authorial intention. So long as we understand that the author is God and that the human writers are God's instruments, this approach is fine. Indeed, as Christians we want to know God's mind, at least as much of it as our limited minds can handle. But we run into trouble if we limit God's word, when stated in human language, to the intentions of the human writers

or speakers. Consider Caiaphas, who as high priest, stated in John 11:50 that it was expedient for one man (Jesus) to die for the people. John 11:51 comments on Caiaphas's statement: "This he did not say on his own *authority;* but being high priest that year he prophesied that Jesus would die for the nation." Caiaphas saw the need for Jesus' death purely in political terms. Yet John 11:51 makes clear that there was a deeper intention underlying Caiaphas's statement so that, as high priest, he was actually prophesying about the necessity of the Messiah dying for the sins of the people. Biblical hermeneutics is about getting at this deeper intention by means of texts. It's in this sense that I refer to their primacy.

This discussion of hermeneutics would be incomplete without noting that science is itself a hermeneutic enterprise. When we talk about the Bible and science as possibly conflicting, we are really comparing two hermeneutic enterprises and doing so in a way that could be confusing, mixing apples and oranges. Hermeneutics is about explaining data. There is the datum that needs to be explained, the *explanandum*; and there is what does the explaining, the *explanans*. Hermeneutically speaking, the role of the Bible is as *explanandum*, the role of science as *explanans*. What explains the Bible? Theology. What is science explaining? Nature. Theology is to the Bible as science is to nature. The Bible is God's special revelation to humanity, nature is God's general revelation to humanity. Theology explains the one, science the other. Thus, it would be more accurate to ask whether theology and science conflict. Strictly speaking, the Bible and science can conflict no more than nature and theology can conflict.

WHEN SCIENCE AND THEOLOGY CONFLICT

Still, there are things that the Bible seems clearly to teach and likewise there are things that nature seems clearly to teach. In other words, theology, looking to the Bible, seems to mandate certain views and likewise science, looking to nature, seems to mandate certain views. So what happens when these views conflict? Obviously, one or the other has to give. Thus, it may be that our interpretation of the Bible has to give or that our interpretation of nature has to give. How this shakes out must be decided on a case-by-case basis. Let me suggest, however, that such resolutions are not a one-way street, with science always having the upper hand and theology always having to fall in line. Rather, it is a two-way street, with both having to make adjustments to each other. To see how this works, let's look briefly at the biblical account of creation in Genesis, since it is here that critics of the Bible focus most of their energy. I note three main points in dispute, and respond briefly to each:

(1) *Genesis teaches creation ex nihilo*. Yes it does, and good for it. Even fifty years ago, many scientists thought the physical universe was eternal. But with the rise of big-bang cosmology, the best scientific evidence now points to the physical universe having a beginning.[27] That means the universe wasn't made out of prior physical stuff, otherwise it couldn't really be said to have a

beginning. So the universe must have come into existence ex nihilo. That leaves essentially two options: God created the universe or it popped into existence from nothing. Some critics of the Bible in fact opt for the latter, arguing that because the universe's net energy is zero, it might have arisen through a separation of positive and negative energy in a vacuum.[28] But such a vacuum would not be a genuine nothing but a thing with properties characterizable in terms of a well-defined physical theory (e.g., a theory of quantum gravity). A genuine nothing, however, admits no predicates—one couldn't rightly ascribe to it various energy states or anything else for that matter. Thus, when Richard Dawkins, for example, looks to science to explain the origin of the universe, he commits a logical error: science presupposes a causal nexus operating by natural laws. Science therefore presupposes the very thing that Dawkins claims it is trying to explain. He is therefore arguing in a circle.[29]

(2) *Genesis teaches that the earth and universe are less than 10,000 years old*. Certainly, most interpreters of the Bible until the rise of modern science took the earth and universe to be less than 10,000 years old—I show this in detail in my book *The End of Christianity*.[30] But does the mere fact that a given interpretation held sway for a long time mandate that this interpretation is correct or must be held in perpetuity? Psalm 93 claims that the earth is established forever and cannot be moved. Most interpreters of the Bible until the rise of modern science held this psalm to teach that the earth is stationary. But with the rise of modern astronomy and physics, that interpretation has been widely rejected, even by the most ardent supporters of biblical literalism. In any case, there now appears to be not just good scientific evidence for a much older earth and universe but also good exegetical evidence from the Bible suggesting that it need not be read as teaching a young earth. I discuss this evidence at length in *The End of Christianity*.[31]

(3) *Genesis teaches that basic types of organisms, and humans in particular, were specially created rather than the result of evolution.* Although I don't think the scientific evidence supports large-scale evolution, it's not clear to me that the biblical evidence categorically rules out large-scale evolution or mandates a form of special creation where organisms materialize from strictly inorganic substrates. To see this, consider that Genesis claims humans are made of dust, at one point even referring to humans as dust ("dust thou art, and unto dust shalt thou return"—Genesis 3:19). But if humans are dust, then so are other animals. Thus, when Genesis says that humans were made from dust, what is to prevent God from transforming preexisting ape-like primates (who are dust) into humans (who are also dust) by some evolutionary process? Let me emphasize, I personally don't accept this argument, but it is one readily advanced by evolutionists against special creationists. One can reject

> evolution because, as a believer in the Bible, one interprets it as teaching a mode of divine creation that rules out evolution. Or one can reject evolution because, as a scientific inquirer, one regards the evidence for such large-scale evolutionary change as weak. Or one can appeal to a combination of these factors.

I close this essay by dispelling a myth, *the myth of the scientific juggernaut*. Those who would turn science into an idol for worship portray it as a juggernaut that relentlessly pushes back the frontiers of knowledge and so ever shrinks the relevance of religion, rendering the Bible passé. But science is no such juggernaut. It is, rather, an interconnected web of factual and theoretical claims about the world that are constantly in need of revision and for which changes in one portion of the web can induce far-reaching changes in another. Specifically, science regularly confronts the problem of having to withdraw claims that it once confidently asserted.

Consider an example from geology. In the nineteenth century the geosynclinal theory was proposed to explain how mountain ranges form. According to this theory, large trough-like depressions, known as geosynclines, once filled with sediment, gradually became unstable, and then, when crushed and heated by the earth, rose to form mountain ranges. As late as 1960, geologists asserted that the geosynclinal theory decisively answered how mountain ranges formed. In the 1960 edition of Clark and Stearn's *Geological Evolution of North America*, the geosynclinal theory was said to be as well established as Darwin's theory of evolution. Whatever became of the geosynclinal theory? (And what is to become of Darwin's theory?) Within a few years, the theory of plate tectonics, which explained mountain formation through continental drift and sea-floor spreading, decisively replaced the geosynclinal theory.[32]

The history of science is filled with such reversals in which confident claims to knowledge suddenly disappear from the scientific literature.[33] Science can get things wrong—indeed, massively wrong. Moreover, often we can tell that science has gotten it wrong without having to come up with a viable alternative—some theories collapse of internal contradiction, others die because they fail to match up with new empirical data. All that to say, Christians ought never to feel intimidated by science. This is God's world. He created it. He gave us minds to understand it. But that understanding, especially on scientific matters, is fallible and constantly requires critical scrutiny. Thus, our first reaction to any presumed conflicts between the Bible and science should not be to jettison the Bible but rather to achieve a deeper understanding of what God is speaking through the Bible as well as through nature.

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[1]Richard Dawkins, *The God Delusion* (New York: Houghton Mifflin, 2006).

[2]According to Kurt Wise, a prominent young-earth creationist whose dissertation supervisor was Stephen Jay Gould, "Although there are scientific reasons for accepting a young earth, I am a young-age creationist because that is my understanding of the Scripture. As I shared with my professors years ago

when I was in college, if all the evidence in the universe turns against creationism, I would be the first to admit it, but I would still be a creationist because that is what the Word of God seems to indicate. Here I must stand." Quoted in John F. Ashton, ed., *In Six Days: Why Fifty Scientists Choose to Believe in Creation* (Green Forest, Ark.: Master Books, 2001), 355. Compare Wise's "fundamentalism of the Bible" with Dawkins's "fundamentalism of science": "Darwinism is the only known theory that is in principle capable of explaining certain aspects of life. If I am right it means that, even if there were no actual evidence in favour of Darwinian theory (there is, of course) we should still be justified in preferring it over all rival theories." Richard Dawkins, *The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe Without Design* (New York: Norton, 1986), 287.

[3]Stephen Jay Gould, *Rocks of Ages: Science and Religion in the Fullness of Life* (New York: Ballantine, 1999).

[4]See William A. Dembski and Stephen C. Meyer, "Fruitful Interchange or Polite Chitchat? The Dialogue between Theology and Science," *Zygon* 33(3), 1998: 415–430. Here we argue for "qualified agreement" between theology and science.

[5]For a detailed account of my skepticism of conventional evolutionary theory, see William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas: Foundation for Thought and Ethics, 2008).

[6]On this last point, I regard conventional evolutionary theory as falling in the category of "joke science." Malcolm Muggeridge, in my view, hit the nail on the head: "I myself am convinced that the theory of evolution, especially the extent to which it's been applied, will be one of the great jokes in the history books in the future. Posterity will marvel that so very flimsy and dubious an hypothesis could be accepted with the incredible credulity that it has." Quoted from Malcolm Muggeridge, *The End of Christendom* (Grand Rapids, Mich.: Eerdmans, 1980), 59.

[7]Richard Dawkins, Book Review of *Blueprints: Solving the Mystery of Evolution* (by Maitland A. Edey and Donald C. Johanson), *New York Times* (April 9, 1989, section 7): 34.

[8]"Let them at least learn what is the religion they attack, before attacking it. If this religion boasted of having a clear view of God, and of possessing it open and unveiled, it would be attacking it to say that we see nothing in the world which shows it with this clearness. But since, on the contrary, it says that men are in darkness and estranged from God, that He has hidden Himself from their knowledge, that this is in fact the name which He gives Himself in the Scriptures, *Deus absconditus*." Quoted from Pascal's *Pensées*, no. 194, available online at http://www.classicallibrary.org/pascal/pensees/pensees03.htm (last accessed December 8, 2011).

[9]The case of the high priest's servant, whose ear Peter cut off in the Garden of Gethsemane, comes closest to Jesus healing an amputee (see Luke 22:50-51). But even here Jesus did not make a new ear grow from scratch, but rather reattached the old ear (which is the sort of thing doctors do today with severed body parts). The only case I know of an amputee supposedly regaining a severed limb is the famous 17th century Miracle of Calanda, in which a peasant named Miguel-Juan Pellicer had his leg amputated in 1637 and then, while sleeping, miraculously recovered it in 1640. Interestingly, the new leg seemed identical to the one lost, with the same scars. Moreover, the place where the old leg had been buried was found empty. So was this a case of a completely new leg growing back or of an old leg being resurrected and reattached? Was this a true miracle at all? I'll withhold judgment here and simply refer readers to the following account http://www.clairval.com/lettres/en/2006/12/08/2061206.htm as well as the following skeptical response http://skeptoid.com/episodes/4247 (last accessed February 2, 2012).

[10]See http://whywontgodhealamputees.com/important.htm (last accessed August 15, 2011).

[11]Anatole France, *The Garden of Epicurus*, trans. Alfred Allinson (New York: John Lane, 1908), 176-177.

[12]Dawkins used this rhetoric in his 2006 BBC documentary titled *The Root of All Evil?* See also his *God Delusion*, 37.

[13]"On Sundays, after returning from the kirk, he would bury himself in the works of the old divines." Quoted from Lewis Campbell and William Garnett, *The Life of James Clerk Maxwell: With Selections from His Correspondence and Occasional Writings* (London: Macmillan, 1882), 321.

[14]Stanley L. Jaki, *The Road of Science and the Ways to God* (Chicago: University of Chicago Press, 1978).

[15]See Walter H. Conser Jr., "Baconianism," in Gary B. Ferngren, ed., *The History of Science and Religion in the Western Tradition: An Encyclopedia* (New York: Garland, 2000), 169-171.

[16]Among America's top scientists—those who belong to the National Academy of Sciences—only seven percent admit believing God. See Edward J. Larson and Larry Witham, "Leading Scientists Still Reject God," *Nature* 394(6691) (23 July 1998): 313.

[17]See Discovery Institute's "A Scientific Dissent from Darwinism": http://www.discovery.org/articleFiles/PDFs/100ScientistsAd.pdf (last accessed December 8, 2011).

[18]"Males have more teeth than females in the case of men, sheep, goats, and swine; in the case of other animals observations have not yet been made." Apparently the proper observations had not been made in the case men, sheep, goats, and swine either. Quoted from Aristotle, *History of Animals*, Book 2, 501b20-21, trans. d'A. W. Thompson, in Jonathan Barnes, ed., *The Complete Works of Aristotle*, vol. 1 (Princeton: Princeton University Press, 1984), 797.

[19]From the seventh homily in Basil's *Hexaemeron*, available online at http://www.newadvent.org/fathers/32017.htm (last accessed December 8, 2011).

[20]For the Westminster Shorter Catechism, see http://www.reformed.org/documents/WSC.html (last accessed December 8, 2011).

[21]In his commentary on Psalm 93:1, John Calvin writes, "The heavens revolve daily, and, immense as is their fabric and inconceivable the rapidity of their revolutions, we experience no concussion—no disturbance in the harmony of their motion. The sun, though varying its course every diurnal revolution, returns annually to the same point. The planets, in all their wanderings, maintain their respective positions. How could the earth hang suspended in the air were it not upheld by God's hand? By what means could it maintain itself unmoved, while the heavens above are in constant rapid motion, did not its Divine Maker fix and establish it." Quoted from John Calvin, *Calvin's Commentaries, Vol. 11: Psalms, Pt. 4*, trans. J. Anderson (Edinburgh: Calvin Translation Society, 1845-1849), available online at http://www.sacred-texts.com/chr/calvin/cc11/cc11001.htm (last accessed December 9, 2011).

[22]See Owen Gingrich, "The Copernican Revolution," in Gary B. Ferngren, ed., *The History of Science and Religion in the Western Tradition: An Encyclopedia* (New York: Garland, 2000), 335. On "saving the phenomena," see Pierre Duhem, *To Save the Phenomena: An Essay on the Idea of Physical Theory from Plato to Galileo*, E. Dolan and C. Maschler, trans. (Chicago: University of Chicago Press, 1969).

[23]Robert Pennock takes this line throughout *Tower of Babel: The Evidence against the New Creationism* (Cambridge, Mass.: MIT Press, 1999).

[24]See, for instance, John A. Mourant and William J. Collinge, trans., *The Fathers of the Church: Saint Augustine—Four Anti-Pelagian Writings* (Washington, D.C.: Catholic University of America Press, 1992).

[25]Compare Umberto Eco, *Interpretation and Overinterpretation* (Cambridge: Cambridge University Press, 1992).

[26]See C. S. Lewis, *Miracles: A Preliminary Study*, rev. ed. (1960; reprinted San Francisco: HarperCollins, 2001), ch. 10, titled "Horrid Red Things."

[27]For the most current thinking about the universe's beginning, see the section on cosmology in Bruce L. Gordon and William A. Dembski, eds., *The Nature of Nature: Examining the Role of Naturalism in Science* (Wilmington, Del.: ISI Books, 2011). See also Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery* (Washington, DC: Regnery,

2004); Robert Jastrow, *God and the Astronomers*, 2nd ed. (Toronto: McLeod, 2000); and Simon Singh, *Big Bang: The Origin of the Universe* (New York: Harper, 2005).

[28]For this style of reasoning, see Stephen Hawking and Leonard Mlodinow, *The Grand Design* (New York: Bantam, 2010), 179-180.

[29]"The origin of the universe is a mystery; it's a mystery to everyone. Physicists are working on it. They have theories. But if science can't answer that question then as sure as hell theology can't either." Dawkins in his 2006 debate with David Quinn on the Ryan Tubridy Show, transcript available online at http://www.catholiceducation.org/articles/science/sc0086.htm (last accessed December 8, 2011). Dawkins here displays not only arrogance but also foolishness. How can physicists possibly account for the ultimate origin of the universe when all their theories necessarily depend on and apply to a universe that is already in place? Theology, contra Dawkins, does have an advantage over science in addressing the question of ultimate origins.

[30]William A. Dembski, *The End of Christianity: Finding a Good God in an Evil World* (Nashville: Broadman and Holman, 2009), see especially ch. 5.

[31]Ibid., especially chs. 6-8, 20. For exegetical support of an older earth, see also Lee Irons and Meredith G. Kline, "The Framework View" in *The Genesis Debate: Three Views on the Days of Creation*, ed. David G. Hagopian (Mission Viejo, CA: Crux Press, 2001), 217-56; Henri Blocher, *In the Beginning: The Opening Chapters of Genesis* (Downers Grove, Ill.: InterVarsity, 1984); and Robert C. Newman and Herman J. Eckelmann Jr., *Genesis One and the Origin of the Earth* (Downers Grove, Ill.: InterVarsity, 1977). For scientific support of an older earth, see also Gonzalez and Richard, *Privileged Planet*; Davis A. Young and Ralph Stearley, *The Bible, Rocks and Time: Geological Evidence and the Age of the Earth* (Downers Grove, Ill.: InterVarsity, 2008); and Fazale Rana and Hugh Ross, *Who Was Adam? A Creation Model Approach to the Origin of Man* (Colorado Springs: NavPress, 2005).

[32]Thomas H. Clark and Colin W. Stearn, *The Geological Evolution of North America* (New York: Ronald Press, 1960), 43: "The geosynclinal theory is one of the great unifying principles in geology. In many ways its role in geology is similar to that of the theory of evolution, which serves to integrate the many branches of the biological sciences." Clark and Stearn continue, "Just as the doctrine of evolution is universally accepted among biologists, so also the geosynclinal origin of the major mountain systems is an established principle in geology." For the contemporary view of mountain formation, see Philip Kearey and Frederick J. Vine, *Global Tectonics* (Oxford: Blackwell Sciences, 1996).

[33]See Thomas Kuhn, *The Structure of Scientific Revolutions*, 2nd ed. (Chicago: University of Chicago Press, 1970) as well as Larry Laudan, *Progress and Its Problems: Towards a Theory of Scientific Growth* (Berkeley, Calif.: University of California Press, 1977).