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Scientism: The Bedrock of the Modern Worldview

Huston Smith

Only four letters, "tism," separate scientism from science, but that small slip twixt the cup and the lip is the cause of all our current problems relating to worldview and the human spirit. Science is on balance good, whereas nothing good can be said for scientism.

Everything depends on definitions here, for this chapter will fall apart if the distinction between *science* and *scientism* is allowed to slip from view. To get those definitions right requires cutting through the swarm of thoughts, images, sentiments, and vested interests that circle the word *science* today to arrive at the only definition of the word that I take to be incontrovertible—namely, that science is what has changed our world. Accompanied by technology (its spin-off), modern science is what divides modern from traditional societies and civilizations. Its content is the body of facts about the natural world that the scientific method has brought to light, the crux of that method being the controlled experiment with its capacity to winnow true from false hypotheses about the empirical world.

Scientism adds to science two corollaries: first, that the scientific method is, if not the *only* reliable method of getting at truth, then at least the *most* reliable method; and second, that the things science deals with—material entities—are the most fundamental things that exist. These two corollaries are seldom voiced, for once they are brought to attention it is not difficult to see that they are arbitrary. Unsupported by facts, they are at best philosophical assumptions and at worst merely opinions. This book[1] will be peppered with

1 *Editor's note:* This chapter is taken from the book: *Why Religion Matters: The Fate of the Human Spirit in an Age of Disbelief*, (San Francisco: Harper, 2000).

instances of scientism, and one of Freud's assertions can head the parade: "Our science is not illusion, but an illusion it would be to suppose that what science cannot give us we can get elsewhere." Our ethos teeters precariously on sandy foundations such as this.

So important and undernoticed is this fact that I shall devote another paragraph to stating it more concretely. For the knowledge class in our industrialized Western civilization, it has come to seem self-evident that the scientific account of the world gives us its full story and that the supposed transcendent realities of which religions speak are at best doubtful. If in any way our hopes, dreams, intuitions, glimpses of transcendence, intimations of immortality, and mystical experiences break step with this view of things, they are overshadowed by the scientific account. Yet history is a graveyard for outlooks that were once taken for granted. Today's common sense becomes tomorrow's laughingstock; time makes ancient truth uncouth. Einstein defined common sense as what we are taught by the age of six, or perhaps fourteen in the case of complex ideas. Wisdom begins with the recognition that our presuppositions are options that can be examined and replaced if found wanting.

The Flagship Book

My flagship book for this chapter is Bryan Appleyard's *Understanding the Present: Science and the Soul of Modern Man.* I will compress its thesis into a story, the details of which are mine, but whose plot is his.

Imagine a missionary to Africa. Conversion is slow going until a child comes down with an infectious disease. The tribal doctors are summoned, but to no avail; life is draining from the hapless infant. At that point the missionary remembers that at the last minute she slipped some penicillin into her travel bags. She administers it and the child recovers. With that single act, says Appleyard, it is all over for the tribal culture. Elijah (modern science) has met the prophets of Baal, and Elijah has triumphed.

If only that tribe could have reasoned as follows, Appleyard continues; if only they could have said to themselves: This foreigner obviously knows things about our bodies that we do not know, and we should be very grateful to her for coming all this distance to share her knowledge with us. But as her medicine appears to tell us nothing about who we are, where we came from, why we are here,

what we should be doing while we are here (if anything), and what happens to us when we die, there seems to be no reason why we cannot accept her medicine gratefully while continuing to honor the great orienting myths that our ancestors have handed down to us and that give meaning and motivation to our lives.

If only those tribal leaders had the wit to reason in that fashion, Appleyard concludes, there would be no problem. But they do not have that wit, and neither do we.

From that fictionalized condensation of Appleyard's book, I proceed to develop its thesis in my own way, beginning with the reception his book received.

Before I had laid hands on Appleyard's book, I attended a conference at the University of Notre Dame. Finding myself at breakfast one morning with the noted British scientist Arthur Peacocke, I asked him about the book, for it had first appeared in England and I thought Peacocke might have gotten the jump on me in reading it. He said that he had not read it but had heard that it was an anti-science book.

Click! Scientism. Scientism, because when I got to the book it turned out not to be against science at all, not science distinct from scientism. But because it spells out with unusual force and clarity what social critics have been saying for some time now—namely that we have turned science into a sacred cow and are suffering the consequences idolatry invariably exacts—it is a sitting duck to be taken as an attack on the scientific enterprise. Not by all scientists. It is not a digression to say (before I continue with Appleyard) that not all scientists idolize their profession. The spring 1999 issue of the *American Scholar* that crosses my desk on the day that I write this page bears this out forcefully. Its review of *Of Flies, Mice, and Men* sees its author, the French microbiologist François Jacob, as having written his book "to renounce much of the epistemological privilege of science, for as [he] points out with surprising and even extreme determination, the myths, misconceptions, and misuses of science can be insidious. They infiltrate our language and beliefs even as we try to expel them."

I could hardly ask for a stronger ally in this chapter than biologist Jacob, and with his support I return to Bryan Appleyard.

When *Understanding the Present* was published, responses to it polarized immediately. The *Times Literary Review* saw the book's author as voicing truths that needed to be spoken, whereas

England's leading scientific journal, *Nature*, branded it "dangerous."

When reviews began to appear on this side of the Atlantic, the *New York Review of Books* chose a science writer, Timothy Ferris, to do the job. Ferris gives us his opinion of the book in his closing paragraph. "Its real target," he writes, "would appear to be not science but scientism, the belief that science provides not *a* path to truth, but the *only* path." So far, fair enough—but then Ferris tells us that:

> Scientism flourished briefly in the nineteenth century, when a few thinkers, impressed by such triumphs as Newtonian dynamics and the second law of thermodynamics, permitted themselves to imagine that science might soon be able to predict everything, and we ought to be able to muster the sophistication to recognize such claims as hyperbolic. Scientism today is advocated by only a tiny minority of scientists.

Those of us who stand outside the science camp can only read such words with astonishment. "Scientism flourished *briefly* when *a few* thinkers permitted themselves to imagine that science might soon be able to predict everything"? "Scientism today is advocated by only *a tiny minority* of scientists"? Ferris's assertions dismiss *the* metaphysical problem of our time by definitional fiat, for if you define scientism as the belief "that science might soon be able to predict everything," then of course too few people believe *that* for it to constitute a problem.

Tracking Scientism

A discussion I was party to recently comes to mind. Historians of religion were asking themselves why the passion for justice surfaces more strongly in the Hebrew scriptures than in others, and when someone came up with the answer it seemed obvious to us all. No other sacred text was assembled by a people who had suffered as much *injustice* as the Jews had, and this made them privy from the inside to the pain injustice occasions. It is extravagant to compare the damage that scientism wreaks to the suffering of the Jews, but the underlying principle is the same in both cases. Only discerning victims of scientism (and sensitive scientists like François Jacob whom I quoted several paragraphs back) can comprehend the magnitude of its oppressive force and the problems it creates. For it takes an eye like the one Michel Foucault trained on prisons,

mental institutions, and hospitals (which eye I am striving for in this book) to detect the power plays that the micro-practices of scientism exert in contemporary life.

Another procedural point must be entered, for it too is often overlooked. What is and is not seen to be scientism is itself metaphysically controlled, for if one believes that the scientific worldview is true, the two appendages to it that turn it into scientism are not seen to be opinions. (I remind the reader that the appendages are, first, that science is our best window onto the world and second, that matter is the foundation of everything that exists.) They present themselves as facts. That they are not provable does not count against them, because they are taken to be self-evident—as plainly so as the proverbial hand before one's face.

This poses *the* major problem for this book, because what is taken to be self-evident depends on one's worldview, and disputes among worldviews are unresolvable. Today's science-backed self-evidence is a fact of contemporary life that must be lived with. It is like wind in one's face on a long journey: to be faced without allowing it to divert one from one's intended course. During the McCarthy era it was said that Joe McCarthy found Communists under every bed, and those who are on the science side in this debate will see me as doing the same with scientism—or as finding under stones the sermons I have already put there, as Oscar Wilde charged Wordsworth with doing. There being (from their point of view) no problem, they will see this entire book as an exercise in paranoia. Because the difference comes down to one of perception, I will plow ahead in the face of that charge, taking heart from the way Peter Drucker perceived his vocation.

As the dean of management consultants in their founding generation, Drucker received every honor that his field had to confer. When he retired, he was asked in an interview if there was anything professionally that he would have liked to have had happen that had not happened. Drucker answered that actually there was. He kept replaying in his mind a scenario that in real life had never transpired. In it he was seated with the CEO of a company in the wrap-up session of a two-week consultation. Having looked together into every aspect of the company's operations they could think of, the two had become friends and grown used to speaking frankly to each other, so at one point the CEO leans back in his chair and says, "Peter, you haven't told me a thing I didn't already know."

"Because," Drucker added, "that's invariably the case. I never tell my clients anything they don't already know. My job is to make them see that what they have been dismissing as incidental evidence is actually crucial evidence." That is what I see myself doing with respect to scientism in this book.

Having referred to the *New York Review of Books* regarding its handling of Appleyard's book, I will turn to it again for my next example of scientism, for that journal serves as something of a house organ for the elite reading public in America.

John Polkinghorne is a ranking British scientist who at the age of fifty became an Anglican clergyman. The *New York Review of Books* never reviews theological books; but presumably because Polkinghorne is also a distinguished scientist, it made an exception in his case. To review his book, the *NYRB* reached for a world-class scientist, Freeman Dyson. *Click!* A scientist to review a book on theology? To see what that choice bespeaks, we need only turn the table and try to imagine the editors of the *NYRB* reaching for a theologian to review a book on science. The standard justification for this asymmetry is that science is a technical subject whereas theology is not, but now hear this. Several years back at a conference at Notre Dame University I heard a leading Thomist say in an aside to the paper he was delivering, "There may be—there just *may* be—twelve scholars alive today who understand St. Thomas, and I am not one of them."

We turn now to what Dyson said about Polkinghorne's book. After commending its author for his contributions to science and for historical sections of the book under review, Dyson turned to his theology, which like all theology, he said, suffers from being about words only, whereas science is about things. *Click* and *double-click!* As a self-appointed watchdog on scientism, I took pen in hand and challenged that claim in a letter to the *NYRB* that began as follows:

> It is symptomatic of the unlevel playing field on which science and religion contend today that a scientist with no theological credentials (Freeman Dyson in the *New York Review*, May 28, 1998) feels comfortable in concluding that the theology of a fellow scientist (John Polkinghorne) is, like all theology, about words and not, as is the case with science, about things. This flies in the face of the fact that most theology takes God to be the only completely real "thing" there is, all else being like shadows in Plato's cave. Muslims in their testament of faith sometimes transpose "There is no God

but the God" to read, "There is no Reality but *the* Reality," the two assertions being identical.

The rest of my letter is irrelevant here, but I do want to quote the first sentences of Freeman Dyson's reply as indicative of the graciousness of the man. "I am grateful to Huston Smith for correcting my mistakes," he wrote. "I have, as he says, no theological credentials. I have learned a lot from his letter." Dyson may have no theological credentials, but he is certainly a gentleman.

In a chapter that has to struggle at every turn not to sound peevish and aggrieved, whimsy helps, so I will mention the occasion on which I found scientism aimed most pointedly (though disarmingly) at me. (I told the story in my *Forgotten Truth*, but it bears repeating here.)

Not surprisingly, the incident took place at MIT, where I taught for fifteen years. I was lunching at the faculty club and found myself seated next to a scientist. As often happened in such circumstances, the conversation turned to the differences between science and the humanities. We were getting nowhere when suddenly my conversational partner interrupted what I was saying with the authority of a man who had discovered Truth. "I have it!" he exclaimed. "The difference between us is that I count and you don't." Touché! Numbers being the language of science, he had compressed the difference between C. P. Snow's "two cultures" into a double entendre.

The tone in which his discovery was delivered—playful, but with a point—helped, as it did on another MIT occasion. When I asked a scientist how he and his colleagues regarded us humanists, he answered affably, "We don't even bother to ignore you guys." Despite the levity in these accounts, the very telling of them opens me to the charge of sour grapes, so to those who will say that I am embittered I will say that they are quite wrong. Our scientific age has, if anything, treated me personally above my due. My concern is with scientism's effect on our time, our collective mindset—the fact that (to go back to Appleyard) it is "spiritually corrosive, and, having wrestled religion off the mat, burns away ancient authorities and traditions." The chief way it does this, Appleyard continues, "is by separating our values from our knowledge of the world." Timothy Ferris dismisses this charge as "extravagant and empty," and here again we can only be astonished at how blind those inside the scientific worldview are to the scientism that others find riddling

modernism throughout. For, science writer that he is, there is no way Ferris could have been unaware that Jacques Monod drew a gloomier conclusion from our having separated values from knowledge than Appleyard does. Think of one of the key assertions by Monod: "No society before ours was ever rent by contradictions so agonizing. . . . What we see before us is an abyss of darkness."

Thus far this chapter has proceeded largely in the wake of Appleyard's book. I want soon to strike out on my own, but not before adding Appleyard's most emphatic charge, which is that "science has shown itself unable to coexist with anything." Science swallows the world, or at least more than its share of it. Appleyard does not mention Spinoza in this connection, but I find in Spinoza's *conatus* the reason for Appleyard's charge.

Spinoza's *Conatus*

Spinoza wrote in Latin, and the Latin word *conatus* translates into English as "will." Every organism, Spinoza argued, has within it a will to expand its turf until it bumps into something that stops it, saying to it, in effect, *Stay out; that's my turf you're trespassing on.* Spinoza did not extend his point to institutions, but it applies equally to them, and I find in this the explanation for why science has not yet learned the art of coexistence. Most scientists as individuals have mastered that art, but when they gather in institutions—the appropriately named American Association for the Advancement of Science, the *Scientific American*, and the like—collegiality takes over and one feels like a traitor if one does not pitch in to advance one's profession's prestige, power, and pay. I have a friend who is an airline pilot who flies jumbo jets. At the moment, his union is threatening to strike for a pay increase. He personally thinks that pilots are already overpaid and is free to say that and vote against the strike in union meetings. But if the motion to strike carries, he will be out there on the picket line, waiving his striker's placard. It is this—group dynamics, if you will—not the arrogance of individuals, that explains why science, which now holds the cards, "has shown itself unable to exist with anything." There is no institution today that has the power to say to science, *Stand back; that's my turf you're poaching on.*

I can remember the exact moment when this important fact broke over me like an epiphany. It was a decade or so ago and I was

leading an all-day seminar on scientism in Ojai, California. As the day progressed, I found myself becoming increasingly aware of a relatively young man in the audience who seemed to be taking in every word I said without saying a word himself. True to form, when the seminar ended in the late afternoon, he held back until others had tendered their goodbyes, whereupon he asked if I would like to join him for a walk. The weather was beautiful and we had been sitting all day, but it was primarily because I had grown curious about the man that I readily accepted his invitation.

He turned out to be a professor at the University of Minnesota whose job was teaching science to nonscientists. Word of my seminar had crossed his desk, and being invested in the topic, he had flown out for the weekend. "You handled the subject well today," he said, after we had put preliminaries behind us, "but there's one thing about scientism that you still don't see. Huston, science *is* scientism."

At first that sounded odd to me, for I had devoted the entire day to distinguishing the two as sharply as I could. Quickly, though, I saw his point. I had been speaking *de jure* and completely omitting the *de facto* side of the story. In principle it is easy to distinguish science from scientism. All the while, in practice—in the way scientism works itself out in our society—the separation is impossible. Science's *conatus* inevitably enters the picture, as it does in every institution. The American Medical Association is an obvious example, but the signs are everywhere.

Jürgen Habermas, a philosopher of the Frankfurt School, coined a useful phrase for the way money, power, and technology have adversely affected the conditions of communication in ordinary, face-to-face life. He charged them with "colonizing the life world." A neo-Marxist himself, he had no particular interest in religion, but the concerns of this book prompt me to add scientism to his list of imperialists. One of the subtlest, most subversive ways it proceeds is by paying lip service to religion while demoting it. An instance of this is Stephen Jay Gould's book *Rocks of Ages*, which I will approach by way of a flashback to Lyndon Johnson. It is reported that when a certain congressman did something President Johnson considered reprehensible, Johnson called him into his office and said, "First I'm going to preach you a nice little sermon on how that's not the way to behave. And then I'm going to ruin you."

My nice little sermon to Professor Gould is, "Paleontologist though you are, you show yourself unable to distinguish rocks from pebbles, for a pebble is what you reduce religion to." Now for the ruination.

Of Rocks and Pebbles

Gould says he cannot see what all the fuss is about, for (he tells us) "the conflict between science and religion exists only in people's minds, not in the logic or proper utility of these entirely different, and equally vital subjects." When tangle and confusion are cleared away, he says, "a blessedly simple and entirely conventional resolution emerges," which turns out (not surprisingly) to be his own. "Science tries to document the factual character of the natural world, and to develop theories that coordinate and explain these facts. Religion, on the other hand, operates in the equally important, but utterly different, realm of human purposes, meanings, and values."

Note that it is human (not divine) purposes, meanings, and values that Gould's "religion" deals with, but the deeper issue is who (in Gould's dichotomy) is to deal with the factual character of the nonnatural, supernatural world. No one—for to his skeptical eyes the natural world is all there is, so facts pertain there only. He has a perfect right to that opinion, of course, but to base his definitions of science and religion on it prejudices their relationship from square one. For it cannot be said too often that the issue between science and religion is not between facts and values. That issue enters, but derivatively. The fundamental issue is about facts, period—the entire panoply of facts as gestalted by worldviews. Specifically here, it is about the standing of values in the objective world, the world that is there whether human beings exist or not. Are values as deeply ingrained in that world as are its natural laws, or are they added to it as epiphenomenal gloss when life enters the picture?

That this *is* the real issue is lost on Stephen Jay Gould, but not on all biologists. Two years ago I was asked to speak to the evolution issue at the University of California, Davis, in a lecture that its office of religious affairs arranged. Several days after returning home I received a letter from the biology professor who teaches the evolution course on that campus. He said that he had come to my lecture

expecting to hear things he would need to refute at his next class session but had been pleased to find little of that nature in what I had said. Enclosed with his letter was an article he had written in which he raised the question of what the evolutionary fuss was about. His answer was: "It is not about whether or not evolution is good science, whether evolution or creation is a better scientific explanation of the diversity of life, or whether natural selection is a circular argument. The fuss actually isn't even really about *biology*. It is basically about worldviews." *Rocks of Ages* could have been a helpful book if Gould had recognized this point, but now, having had my fun with Gould, I must admit that I have not been entirely fair to him. For he is quite right in saying that the position he advocates is "entirely conventional." That does not make it right, but it does exonerate Gould from having invented the mistake, which I quoted Appleyard as indicating a few pages back. "Separating our values from our knowledge of the world [is the chief way scientism] burns away ancient authorities and traditions."

From Warfare to Dialogue

Religious triumphalism died a century or two ago, and its scientistic counterpart seems now to be following suit. Here and there diehards turn up—Richard Dawkins, who likens belief in God to belief in fairies, and Daniel Dennett, with his claim that John Locke's belief that mind must precede matter was born of the kind of conceptual paralysis that is now as obsolete as the quill pen—but these echoes of Julian Huxley's pronouncement around midcentury that "it will soon be as impossible for an intelligent or educated man or woman to believe in god as it is now to believe that the earth is flat" are now pretty much recognized as polemical bluster. It seems clear that both science and religion are here to stay. E. O. Wilson would be as pleased as anyone to see religion fail the Darwinian test, but he admits that we seem to have a religious gene in us and he sees no way of getting rid of it. "Skeptics continue to nourish the belief that science and learning will banish religion," he writes, "but this notion has never seemed so futile as today."

With both of these forces as permanent fixtures in history, the obvious question is how they are to get along. Alfred North Whitehead was of the opinion that, more than on any other single factor, the future of humanity depends on the way these two most

powerful forces in history settle into relationship with each other, and their interface is being addressed today with a zeal that has not been seen since modern science arose.

This could be in part because money has entered the picture (the Templeton Prize for Progress in Religion is larger than the Nobel Prizes), but it probably signals a change in our climate of opinion as well. Scientists probably sense that they can no longer assume that the public will accept their pronouncements on broad issues unquestioningly, and this requires that they present reasons. In any case, God-and-science talk seems to be everywhere. Ten centers devoted to the study of science and religion are thriving in the United States, and together they mount an expanding array of conferences, lectures, and workshops. Several hundred science-and-religion courses are taught each year in colleges and universities around the country, where a decade or two ago you would have had to dig in hard scrabble to find one; and every year or so new journals with titles such as *Science and Spirit*, *Theology and Science*, and *Origins and Design* join the long-standing *Zygon* to augment the avalanche of books—many of them best-sellers—that keep the dialogue between science and religion surging forward.

On the whole, this mounting interest is a healthy sign, but it hides the danger that science (I reify for simplicity's sake) will use dialogue as a Trojan horse by which to enter religion's central citadel, which is theology. That metaphor fails, however, because it carries connotations of intentional design. A hole in a dyke serves better. If a hole appears in a Netherlands dyke, no finger in the dyke is going to withstand the weight of the ocean that pushes to enter.

Colonizing Theology

To once have belonged to the enemy camp provides one with insights into its workings, and so (with apologies for the military language) I will claim that advantage here.

When I came to America from the mission field of China, my theological landing pad at Central Methodist College in Missouri was naturalistic theism, the view that God must be a part of nature, for nature is all there is. With modest help from John Dewey, Henry Nelson Wieman was the founder of that school of theology, and my college mentor was one of his two foremost protégés. Thus it was that when I arrived at the Divinity School of the University of

Chicago to study with Professor Wieman, I was already as ardent a disciple as he had ever had. That lasted through my graduate studies, after which my resonance to the mystics converted me to their worldview.

At the time I am referring to (the middle of the twentieth century), Wieman's liberal naturalistic theism was giving its conservative rival—neo-orthodoxy, as founded by the Swiss theologian Karl Barth and captained in America by Reinhold Niebuhr—a run for the Protestant mind. Niebuhr won that round, but with Whitehead and his theological heir, Charles Hartshorne, naturalism has returned as Process Theology. Its philosophy of organism (as Whitehead referred to his metaphysics) is richer than Wieman's naturalism, and Whitehead's and Hartshorne's religious sensibilities were more finely honed, but Process Theology remains naturalistic. Its God is not an exception to principles that order this world, but their chief exemplar. God is not outside time as its Creator, but within it. And God is not omnipotent, but like everything in this world is limited. "God the semicompetent" is the way Annie Dillard speaks of this God.

Do we not see the hand of science—which process theologians point to proudly—in this half-century theological drift? In relating it to the concerns of this chapter, two questions arise. First, if we could have our way, would we prefer God to be fully competent or partially competent? Second, has science discovered any *facts* that make the first (traditional) alternative less reasonable than the second? If it has, science has vectored the drift and we must follow its lead. If no such facts have turned up, scientistic styles of thought are guilty of colonizing theology.

With this quick reference to the last fifty years, I turn now to the present.

The Tilt of the Negotiating Table

Because scientists at this point are negotiating from strength and would be happy to have things remain as they are, it is theologians who must take the initiative to get conversations going. I have already mentioned the ten or so religiously based institutes that are working at this job, and in these pages I shall confine myself to the two most prestigious of these, the Zygon Center at the University of Chicago, and the Center for Theology and the Natural Sciences at

the Graduate Theological Union in Berkeley. In an informal division of labor, the Institute in Chicago publishes *Zygon*, the academic journal in the field, and the Berkeley Center mounts the conferences.

Who gets published in *Zygon* and invited to CTNS conferences? There is no stated policy; but an inductive scan suggests a bias against those who, first, criticize Darwinism; second, argue that the universe is intelligently designed; and third, accept the possibility that God may at times intervene in history in ways other than through the laws by which nature works. God may be believed to have created the universe and to operate within it, but God must not be taken to suspend at times its laws or to leave gaps in them that are divinely filled from outside. (That would give us a "God of the gaps," a deity who would be squeezed out when, as it is assumed will happen, science eventually fills those gaps.) In a word, miracles and supernaturalism generally are out. Those who honor the three mentioned proscriptions are welcomed in CTNS/*Zygon* doings; others are not.

Such at least is my reading of the matter. If the reading is basically accurate, the operative policy is pretty peculiar once one thinks about it. Three planks of the traditional religious platform have been removed by the pace-setting Berkeley/Chicago axis. (The religious platform I posit here is drawn from Hinduism and the Abrahamic religions. Buddhism and East Asia present complications that would be distractions in this discussion.) Why? The obvious answer seems to be that these planks do not fit the scientific worldview. I cannot speak for the governing boards of the two institutions and do not know if their policy here is tactical—to keep scientists from walking away from the negotiating table—or if it reflects a belief that science has discovered things that require that the traditional planks be dropped. I know the Berkeley team well enough to know that its members are sincere Christians who do not see themselves as capitulating to the scientific worldview if it is read in ways that exclude God. But the God they argue for is (1) the world's first and final cause, who (2) works in history by controlling the way particles jump in the indeterminacy that physicists allow them. This retains God, but in ways that supplement the scientific worldview without ruffling it.

The problem with this approach is that it overlooks the ghost of Laplace, who waits in the wings to announce that he has no need of

the God-hypothesis. More serious is the procedural way things are going. The institutions that dominate the science-religion conversation do not consider the way they relate theology to science to be one possibility among others that merit hearings. They consider it to be the truth and believe that it needs to be understood if religion is to survive in an age of science.

Darwinism provides the clearest example of this monopolistic approach. That the issue of how we human beings got here has strong religious overtones goes without saying, and its founder and I are only two among millions who find the Darwinian theory (when taken to be fully explanatory of human origins) pulling against the theistic hypothesis. Among scientists themselves, debates over Darwin rage furiously, fueled by comments such as Fred Hoyle's now-famous assertion that the chance of natural selection's producing even an enzyme is on the order of a tornado's roaring through a junkyard and coming up with a Boeing 747. But when religion enters the picture, scientists close ranks in supporting Darwinism, with CTNS and *Zygon* right in there with them. To my knowledge, no one critical of the theory has been published in *Zygon* or been included in a major CTNS function.

Michael Ruse of the University of Guelph—a self-confessed bulldog for Darwinism—puts this colonization of theology by biology in perspective when he charges his fellow Darwinists with behaving as if Darwinism were a religion. Rustum Roy, a materials scientist at Pennsylvania State University, goes further. Half seriously, he has threatened to sue the National Science Foundation for violating the separation of church and state in funding branches of science that have turned themselves into religions. If these spokespeople are right and Darwinism has grown doctrinal, we have the curious spectacle of its colonizing not only theology but biology as well. I will close this chapter with an instance.

The 1999 conference on "The Origin of Animal Body Plans and the Fossil Record" was held in China because that is where a disproportionate number of fossils relating to the Cambrian explosion of phyla have been found. On the whole, its Western delegates argued that the explosion can be explained through a Darwinian approach, whereas the Chinese delegates were more skeptical of that. Jonathan Wells, of the Center for Renewal of Science and Culture at the Discovery Institute in Seattle, closed his report of the

conference with an account that carries overtones ominous enough to warrant its being quoted in full:

> I will end this report with one poignant anecdote about a conversation I had with a Chinese developmental biologist from Shanghai who recently returned from doing research in Germany. She told me that in China the general practice in education is to settle on an official theory and then teach it to the exclusion of all others. So far, she said, this has not happened in biology; since she herself is a critic of the idea that genetic programs control development, she dreads the possibility of being forced to teach the Darwinian line. But she fears that this may happen soon, and she and her colleagues believe their only hope is the willingness of western scientists to discuss competing theories and not descend into dogmatism. It depressed her to see at this conference how dogmatic American biologists had already become, and she pleaded with me to defend the spirit of free inquiry. The way she put it, the world is counting on you to do this.

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