

# 6

## THE EMPIRE STRIKES BACK

---

### *What Are the Arguments Against Intelligent Design?*

#### **The Critics**

The intelligent design movement is usually ignored in the mainstream news media because journalists have been trained to portray the dispute over evolution as one between impartial scientific investigators on the one hand and poorly educated biblical fundamentalists on the other. Professors who dispute Darwinism because the scientific evidence is against it are not yet on their mental map. Nonetheless, Michael Behe, William Dembski and I have gained sufficient recognition and public support through our books and lectures that book-length refutations are beginning to appear. Two books in particular were published in 1999: College of New Jersey philosophy professor Robert Pennock's *Tower of Babel: The Evidence Against the New Creationism* and Brown University biology professor Kenneth R. Miller's *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution*. Miller is one of Darwinism's most effective debaters, and Pennock's book has

impressive endorsements, including a recommendation from the National Academy of Sciences. These books represent the best that Darwinists have been able to do in meeting the arguments for intelligent design.

Both books simply refuse to take seriously any arguments against Darwinism or materialism, relying heavily on caricatures, ridicule and the strong negative implications of the term *creationism*. The basic line of attack is that any dissent from evolutionary naturalism is founded not on scientific evidence but on religious prejudice. Pennock and Miller also make specific arguments that deserve to be taken seriously, however. I'll respond to these after first briefly restating the case for intelligent design in biology, so readers will have clearly in mind just what Pennock and Miller are supposed to be refuting.

### **The Case for Intelligent Design\***

A good place to begin is with the acknowledgment by Richard Dawkins that "Biology is the study of complicated things that give the appearance of having been designed for a purpose." More precisely, all living organisms are characterized by immense amounts of genetic information that enable them to function. Dawkins puts it vividly:

Physics books may be complicated, but . . . the objects and phenomena that a physics book describes are simpler than a single cell in the body of its author. And the author consists of trillions of those cells, many of them different from each other, organized with intricate architecture and precision-engineering into a working machine capable of writing a book. . . . Each nucleus . . . contains a digitally coded database larger, in information content, than all 30 volumes of the *Encyclopedia Britannica* put together. And this figure is for *each* cell, not all the cells of the body put together.<sup>1</sup>

---

\*For a much more complete explanation, see William Dembski, *Intelligent Design: The Bridge Between Science & Theology* (Downers Grove, Ill.: InterVarsity Press, 1999).

In short, the very complex processes of the cell must be directed by some information-rich entity that can be likened to a computer program. As I explained in chapter two, the information that directs the life processes—like any other meaningful text—needs to be *complex, aperiodic* and *specified*. The first requirement means that a very long string of letters or symbols is required. The second means that the order of the letters is not directed by physical or chemical laws, which by their nature produce only simply repeating patterns (such as printing “ABC” over and over again until the printer runs out of paper). The third requirement means that not just any order will do but only the precise order required to produce the encyclopedia, or the computer operating program, or the array of cellular proteins coded for in the DNA nucleotides. Genuinely creative evolution thus requires a mechanism capable of creating immense amounts of complex specified aperiodic genetic information. Random mutation is not such a mechanism, nor is natural selection, nor is any physical or chemical law. Laws produce simple repetitive order, and chance produces meaningless disorder. When combined, law and chance work against each other to prevent the emergence of a meaningful sequence.\* In all human experience, only intelligent agency can write an encyclopedia or computer program, or produce complex specified aperiodic information in any form. Therefore, the information necessarily present in organisms points to the conclusion that they are products of intelligent design.

The concept of intelligent design does not rule out “evolution” in

---

\*That is why the classic “monkeys at a typewriter” illustration oversimplifies the problem. Even if a random choice of letters could produce a specified text in a finite period of time, the fixed arrangement of letters on the keyboard would cause some letters (for example “G” “H” “J” and “K”) to appear together very frequently, producing recurrent nonsense sequences like “hjk.” In addition, crucial information (i.e., the English alphabet) is built into the situation by the keyboard. Give the monkey paper and pencil and he produces only meaningless squiggles instead of letters. Invention of the alphabet required human intelligence.

the sense of variation or diversification. Many examples of variation within the type occur, and humans by selective breeding produce impressive varieties of dogs and roses. (Selective breeding is itself a form of intelligent design, however, because the breeders employ purposeful intelligence and protect the overspecialized breeds from the natural selection that would otherwise eliminate them.) These uncontroversial examples of what is commonly termed “microevolution” involve no increases in genetic information and hence are not creative in the important sense. Reference to intelligent causes is indispensable not to account for mere *change* but to account for the creation of new complex genetic information. One convenient way of expressing this distinction is to say that the standard examples of microevolution are all of *horizontal* evolution, while the grand creative process should be called *vertical* evolution.

Whatever the terminology, the essential point is that something besides mere “change” is required to create new complex organs, and that something must be capable of a task equivalent to writing a computer operating program or an encyclopedia. Unless biologists can provide a testable mechanism capable of doing the job, then the correct scientific conclusion is that biological creation is an unsolved mystery. Calling the mystery “evolution” provides only the illusion of an explanation unless there is a specific theory available to explain how the required transformations are possible.<sup>2</sup> Neo-Darwinism is specific enough, but it doesn’t fit the facts, and its mechanism has no real creative power.

A wise proverb warns that “it isn’t what you don’t know that gets you in trouble, it is what you *do* know that isn’t so.” Often the first step toward true understanding is to eliminate false concepts that merely conceal our ignorance by, for example, encouraging the belief that cyclical variations in finch beaks illustrates how birds came into existence in the first place. Science should never fear hon-

est intellectual tools such as precise use of terms, unbiased investigation of evidence and refusal to accept unjustified extrapolations. If use of those tools leads to the undermining of a cherished theory, then that is a gain and not a loss for the advance of knowledge—even if it leaves scientists bewildered for a time. If no true answer is available, it is not an advance in knowledge to embrace a false answer.

Finally, intelligent design theorists need to explain why the vast majority of evolutionary scientists refuse to consider evidence of intelligent design in biology, scornfully dismissing the entire concept as “religion” rather than “science.” This is because they identify science with naturalism, meaning that only “natural” (i.e., material or physical) forces may play a role in the history of life.<sup>3</sup> Where the designer is itself some natural entity, such as a human being, evidence for design is welcome. Space aliens are also permissible entities, and so Carl Sagan’s Search for Extra-Terrestrial Intelligence (SETI) radio telescopes scan the sky for signals, which they could identify as products of intelligence by precisely the same methods which intelligent design theory applies to biology. The difference is that scientific naturalists *want* to find evidence for extraterrestrial life, in part because they would count it as evidence that natural laws produce life wherever favorable conditions exist and hence as clinching the case for naturalism. They don’t want to find evidence for what they think of as an “interfering” God, meaning a God who does not leave everything to law and chance. Hence they will refuse to see evidence of design that is staring them in the face until they are reassured that the designer is something whose existence they are willing to recognize.

That is the case *for* intelligent design in biology. Now we turn to the critics.

### **A Darwinist Responds: Kenneth Miller**

Kenneth Miller begins by defending the identification of science

with materialism. He argues that any alternative to materialism in science could only involve an arbitrary refusal to consider evidence and a determination to substitute “miracle” for factual investigation:

If I wanted to oppose the assumption of materialism, I might walk into a meeting of solar physicists, for example, and claim that the sun does not contain helium. Someone in the group would be likely to ask a simple question: “How, then, do you explain the 587.6 nanometer emission peak in the solar atmosphere?” My response: I do not have to explain it! Light from the sun, I would claim, is a miracle. Supernatural forces are responsible for that light, and such forces are beyond scientific explanation. “You’d might as well admit,” I would insist, “that my explanation is just as good as yours. The only difference is that you pretend to be objective when you are not. Your so-called scientific work has a hidden, underlying bias in favor of scientific materialism. I have no such bias. Indeed, I’m the one with a truly open mind, because I can admit the possibility of the miraculous when you cannot.”<sup>4</sup>

If I were willing to stoop to that level of caricature, I suppose I could portray Miller as insisting that the scientific instruments that measured the emission peak were designed by unintelligent natural forces and contemptuously rejecting as “religion” any attempt to assert the existence of engineers. The intelligent design position is not that miracles should be arbitrarily invoked in place of logical inferences from evidence, but rather that evidence pointing to intelligent causes, where present, should not be disregarded due to bias. Miller either does not know, or chooses to ignore, that the argument for intelligent design rests primarily on the existence of complex genetic information and the absence of a natural mechanism for creating it. The 587.6 nanometer emission peak is an example of a law-like regularity produced by a known physical process. Recognizing such a regularity is fully consistent with the case for intelligent

design in biology and involves no necessary adherence to materialism.

Consistent with that initial basic misunderstanding, Miller grotesquely distorts the design concept by insisting that it must apply either to everything or to nothing, when in fact the starting point for intelligent design theory is that we can distinguish between entities which are designed and those that are not. In Miller's words, "if Johnson is right, then we should apply the explanation of design to every event in the natural history of the planet. It is not logically tenable to allow that evolution could have produced some species but not others; therefore, the explanation of design must be invoked for the origin of every species."<sup>5</sup> This "all or nothing" standard is utter nonsense. In the first place, it is only Darwinists who think that what evolutionary theory needs to explain is primarily *speciation*, meaning the origin of a new species. A species (as most commonly defined) is merely a reproductively isolated population, and such isolation or loss of reproductive capacity does not necessarily require any increase in genetic information. For example, two fruit fly populations that cannot interbreed may be classified as separate species although they are otherwise physically similar. Intelligent design theorists are not concerned with whether natural variation can produce reproductive isolation. We are concerned with the much more important question of the origin of irreducibly complex systems or new complex genetic information. Far from saying that everything is designed, design theory says that chance, law and design all operate in the world and that it is possible to distinguish between innovative changes that require design and variations which can be produced by some combination of law and chance.

Because Miller does not recognize the problem of information creation, he thinks of evolution merely as "change." Of course *some* change occurs by natural process, so he reasons that therefore *all*

change must occur by natural processes. Because some variations are beneficial to the organism that possesses them—he cites the standard examples such as bacterial resistance to penicillin and insect resistance to pesticides—Miller thinks he has proved that a similar process of variation and natural selection can create new kinds of organisms with new complex organs. And because the fossil record indicates a history of variation within limits, he thinks he has proved that there are no limits to variation. No wonder Miller concludes that anybody who questions the Darwinian story must be as irrational as the mystic who denies that the 587.6 nanometer emission peak in the solar atmosphere signals the presence of helium!

Miller makes his fossil case by using the example of elephants. He begins by noting that “The skulls, teeth and jaws of elephants are distinctly different from other mammals, which makes extinct elephantlike organisms easily recognizable from fossils.” Passing over the mystery of how this basic elephant type came into existence in the first place, Miller reports that there are two living elephant species—the African and Indian elephants—and a number of extinct variations on the basic form. He then says, “I can imagine Phillip Johnson . . . telling me with a straight face” that each of these variations was separately designed, and that “the sequence of their appearances is a misleading coincidence.”<sup>6</sup> The argument embodies Miller’s typical methodology: first he creates a straw man, then he ridicules it. The real Phillip Johnson would say that elephant variation is yet another example of the pervasive pattern that we see both in the fossil record and in the living world. Variation and diversification occur, probably to a greater extent in the remote past than in the present, but only within the confines of the basic type. There is no scientific explanation for the origin of that easily recognizable elephant type other than speculation based on unjustified extrapolation.

Even if the basic type did “evolve” (in some sense of that vague term) from some very different predecessor, and ultimately from a single-celled organism like a bacterium, we do not know any mechanism capable of producing such an amazing set of transformations.

Exactly how much natural variation and diversification *has* occurred would be a fruitful question for scientists to address if they were able to do so. Such investigation cannot occur, however, if scientists are incapable of anything more sophisticated than Miller’s “all or nothing” way of defining the issue. Miller insists that “If evolution is genuinely wrong, then we should not be able to find *any* examples of evolutionary change *anywhere* in the fossil record.”<sup>7</sup> To say that a proposition as broad and vague as “evolution” must be either completely right or completely wrong is to rule out any intelligent discussion of the subject. Of course evolution has occurred, if evolution simply means *change of any degree or kind*, and so in that trivial sense evolution is necessarily “right.” But evolution is a much more dubious concept if it means *massive increases in genetic information produced by chance variation and differential reproductive success*. By that definition, evolution is very wrong.

Miller’s incomprehension of the information problem is particularly visible when he turns to embryonic development. He says that no intelligent design theorists—who, for maximum pejorative impact, he calls creationists—“would reject the proposition that a single fertilized egg cell—the classic specimen of developmental biology—contains the full and complete set of instructions to transform itself into a complex multicellular organism. Neither would any respectable creationist challenge the assertion that every step of that developmental process is ultimately explicable in terms of the material processes of chemistry and physics. Miracles aren’t required—the complexities of molecular biology will do just fine.”<sup>8</sup> That is correct. Miracles are *not* required, but an intelligent cause *is*

required. Instructions in the fertilized egg control embryonic development from the beginning and direct it to a specific outcome. This “full and complete set of instructions” *employs* the material processes of chemistry and physics but is not *created by* those processes. Similarly, the software in a computer employs natural processes to generate a word processing document, but the software has to be written by an intelligent agent. The relevant question is not whether miracles are required once the instructions are in operation but whether intelligence was required to create the instructions in the first place.

*Miracles and design are distinct concepts.* The resurrection of Jesus is a miracle, which means that it is an exception to the otherwise universal process of irreversible decay following death. When we ask whether design is present in biology, we are not asking about *exceptions* to normal processes but rather about what the normal process itself must have been. The issue is whether scientific evidence indicates that law and chance alone can accomplish biological creation or that an intelligence cause is also required. Musicians do not violate natural laws when they compose symphonies or perform on instruments, but they do add something to the laws without which music would not exist. Similarly, the genetic information does not violate any laws when it directs the development of the embryo in the womb, but it adds something to the laws without which development would not occur. It is the origin of that “something” that intelligent design theorists want to consider and that materialists want to rule out of consideration as “a question only a creationist would ask.” The design position is falsifiable, since advocates of naturalism could discover a natural process capable of creating the necessary information if such a process exists. (If neo-Darwinism were true as a general theory of biological creation, it would falsify our claim that some additional information-creating

mechanism is necessary.) The “design is religion, not science” position is not falsifiable because it decides the disputed question by the manipulation of words rather than by empirical investigation. *Hence, by the standard of falsifiability the intelligent design hypothesis is scientific, and the refusal to consider it on its merits is unscientific.*

### **Another Darwinist Responds: Robert Pennock**

Robert Pennock at least acknowledges the problem of information creation but succeeds only in showing that he does not understand it. As I explained in chapter two, Pennock thinks that a computer creates new complex information when it “selects” the correct letters from a random array to match a target sentence by comparing them with a copy of the desired sequence which a programmer has written into its memory. Of course, both the selection program and the target text itself are products of intelligent design. The error is elementary, but it is one that countless Darwinists continue to make. Because they do not understand the difference between intelligent and unintelligent causes, they assume that unintelligent causes can do everything that intelligence can do—and maybe even more! Responding to my argument that unintelligent processes cannot create life, Pennock crows triumphantly that “so far we do not have a single case of intelligent creation of life; rather, our universal experience to date is that *only* unintelligent material processes do so.”<sup>9</sup> Any logician would call that begging the question and also running away from the obvious. If human intelligence is incapable of creating life, then the logical inference is that a greater-than-human intelligence is required, not that inanimate matter can do the job on its own.

Pennock’s main line of attack, however, is indicated by the title of his book *Tower of Babel*. He points out uncontroversially that a kind of evolution occurs in languages, so that (for example) both French

and Spanish have gradually evolved from Latin. Exactly how far back this process of language evolution can be carried is unknown or disputed, but for convenience we may go along with Pennock's speculation that perhaps it can be extrapolated to a single initial language (now extinct) from which all the others developed.<sup>10</sup> A single origin of language would be comparable to the standard scientific assumption that all of today's organisms evolved through a chain of extinct ancestors from a single first replicator which emerged from a chemical soup. Pennock uses this example to make two points: first, the Tower of Babel story in Genesis is wrong because languages evolved gradually rather than being specially created with the fall of the Tower; second, objections to biological evolution made by persons such as Behe and Johnson must be insubstantial because they can be overcome in the case of linguistic evolution.

Pennock's argument from analogy actually tends to prove the opposite of what he intends. In the first place, intelligent design advocates (the "new creationists" targeted in Pennock's subtitle) do not bring Genesis into the discussion at all and hence claim no stake in the Tower of Babel story. That makes the whole argument irrelevant. But not to spoil the fun, let's suppose we did want to defend the story as history. In that case we would be delighted to discover that all modern languages evolved over time from a single original universal language, because the story relates that God "confused their language"—*not* that God created a bunch of utterly dissimilar languages from scratch. One would therefore expect that clues to the existence of the original common language might be found in the products of the confusion. The most impressive clue I can imagine would be a universal grammar, itself of mysterious origin, which underlies and governs all the superficially diverse languages that have evolved since humans first began to speak.

Ironically, the very enthusiastic Darwinist Steven Pinker uses the

Babel story to illustrate how diverse human languages could arise within the boundaries of the universal grammar that actually does characterize all of them. “God did not have to do much to confound the language of Noah’s descendants,” says Pinker. “In addition to vocabulary—whether the word for ‘mouse’ is *mouse* or *souris*—a few properties of language are simply not specified in the Universal Grammar and can vary as parameters. . . . There seems to be a common plan of syntactic, morphological, and phonological rules and principles, with a small set of varying parameters, like a checklist of options. Once set, a parameter can have far-reaching changes on the superficial appearance of the language.”<sup>11</sup> Pinker observes that the “Universal Grammar is like an archetypal body plan found across vast numbers of animals in a phylum.”<sup>12</sup> The archetype itself does not evolve, and succeeding generations of humans employ it without needing to be taught. If isolated groups of people invent new languages, their inventions will always be variations on the basic pattern that is common to all language.

In other words, language evolution is very much like the kind of biological evolution that scientists actually observe in that it occurs within the boundaries of an unchanging type that is itself of unknown origin. As with observed biological evolution, language evolution involves no increase in complex information or invention of new capabilities. It is precisely the fact that primitive languages are as complex as modern ones that first led linguistic scholars to the discovery that spoken language is the product of a special and uniquely human instinct, rather than a cultural invention like writing or agriculture. As Pinker puts it, “There are Stone Age societies, but no Stone Age language.”<sup>13</sup> Evolution that takes the form of variation within the type without the creation of any new capability is entirely consistent with the proposition that intelligence was required to create the language instinct itself with its universal

grammar. To use the vocabulary previously suggested, language evolution is horizontal, and it provides no explanation for the vertical leaps. If Pennock had wanted to cite a genuine analogy in language to vertical evolution in biology, he might have chosen the invention of the alphabet or arabic numerals. Only a creative intelligence could have invented the alphabet, but subsequent changes in the form of the letters could easily result from copying errors or other accidents of history.

The human language capacity (with its universal grammar) is a particularly serious difficulty for Darwinists, because it seems to have arisen all at once in humans without any true animal predecessors. That is why the famous linguist Noam Chomsky, who is the furthest thing from a creationist, is notoriously skeptical of the ability of the Darwinian mechanism to explain the origin of the language instinct.<sup>14</sup> Pennock acknowledges this fact and likens the problem to the origin of life itself, which “remains largely a mystery,” but then invokes methodological naturalism to disallow any inference of design for either of these unsolved problems. That is to decide the question by arbitrary fiat. The origin of life and the origin of the human language capability both required immense quantities of new genetic information, which could not be generated by any combination of law and chance. Materialists are welcome to prove that assertion wrong, but to do so they will have to demonstrate the existence of a mechanism that can generate the necessary information. Imposing rules that make materialism or naturalism unfalsifiable is authoritarian politics, not science.

### **The Culture War**

Miller and Pennock make various other points based on similar confusions, but to go into more detail would exhaust the reader's patience without making any real contribution to understanding

what the dispute is all about. Like the denunciations that scientists and journalists directed at the Kansas state board of education in the controversy reported in chapter three, the barrage of rhetorical missiles is an offensive in a culture war rather than a serious attempt to grapple with the scientific issues. The essential conflict does not turn on evidentiary details, but on fundamentally opposed ways of thinking. If you accept and internalize the logic of scientific naturalism, then naturalistic evolution in some form will probably seem so obviously true that you will have trouble imagining how any well-informed, rational person can doubt it. You will ask not “Is there something wrong with evolution?” but “What hidden motive do these people have for denying the obvious?” That is why most elite scientists and intellectuals, including theistic modernists, do not even attempt to hold a reasoned discussion with their adversaries. Seeing themselves as embattled in a culture war against barbarians who want to return society to something like the Dark Ages, the defenders of scientific naturalism are extraordinarily indiscriminating about the arguments they employ. The strategy is to throw everything that comes to hand at the enemy in the hope that something will destroy this baffling, irrational menace.

Darwinists can take in stride any debates over the particulars of their theory, however strident, so long as the underlying principle of naturalistic explanation is not threatened. That is why the blatant heresies of Stephen Jay Gould, to take one example, were cheerfully tolerated until very recently. As John Maynard Smith, the British dean of Darwinists, famously summed up the professional judgment after Gould finally pushed the envelope too far, “The evolutionary biologists with whom I have discussed [Gould’s] work tend to see him as a man whose ideas are so confused as to be hardly worth bothering with, but as one who should not be publicly criticized because he is at least on our side against the creationists.” Gould’s

anguished response went to exactly the same point: “We will not win this most important of all battles [against the creationists] if we descend to the same tactics of backbiting and anathematization that characterize our true opponents.” Everything is negotiable except the vital objective of keeping God out of objective reality. As Gould’s ally Richard Lewontin put it, “we cannot allow a Divine Foot in the door. . . . To appeal to an omnipotent deity is to allow that at any moment the regularities of nature may be ruptured, that miracles may happen.” In the materialist mentality, the appearance of the Lawgiver is equated with the disappearance of the laws.<sup>15</sup>

Heresy within the confines of the scientific community is one thing. The same heresy in the context of a popular revolt against scientific authority becomes an intolerable threat. When the Kansas state school board picked up the idea, long associated with Gould, that there might be a difference in kind rather than merely in degree between micro- and macroevolution, Darwinists universally responded with vehement denunciations implying that no respectable scientist had ever considered such nonsense. Of course there have been many scientists who have doubted that a grand evolutionary mechanism could be extrapolated from modest evidence of cyclical variations within a fundamentally stable species. The difference was that the scientists were speculating within the boundaries of methodological naturalism, whereas the Kansas board members clearly wanted to insert the divine foot in the door. Once the foot is in the door it is hard to shut out the rest of the divine presence, not to speak of the millions of people who are gathered behind it.

The need to shut out that foot explains not only the barrage of poorly reasoned scientific arguments from the Darwinist camp but also the accompanying insistence that “evolution” and “religion” are in no way in conflict. When the Darwinists are worried about popular revolt, they tell the Darwinian story with a mildly theistic spin.

They realize that it is safer to allow God a shadowy existence in human subjectivity than to run the risk that this very threatening presence will burst into objective reality. That is when we hear the standard vague reassurances that “many people believe in both God and evolution,” or that “science does not say that God does not exist,” or that “science and religion are separate realms.” That is also when modernist leaders of mainstream denominations come forward to denounce those “fundamentalists” who are bringing Christianity into disrepute by mindlessly opposing “scientific knowledge,” such as the knowledge that mosquito populations evolve a resistance to DDT. Once the danger is past, the reassurances will be put back on the shelf, and we will again hear that a proper understanding of “evolution” requires us to recognize that humans are just another animal species which, like all the others, is an accidental product of a purposeless cosmos.

In the final analysis, it is not any specific scientific evidence that convinces me that Darwinism is a pseudoscience that will collapse once it becomes possible for critics to get a fair hearing. It is the way the Darwinists argue their case that makes it apparent that they are afraid to encounter the best arguments against their theory. A real science does not employ propaganda and legal barriers to prevent relevant questions from being asked, nor does it rely on enforcing rules of reasoning that allow no alternative to the official story. If the Darwinists had a good case to make, they would welcome the critics to an academic forum for open debate, and they would want to confront the best critical arguments rather than to caricature them as straw men. Instead they have chosen to rely on the dishonorable methods of power politics.

Is there an alternative to Darwinism? When Darwinists ask that question, they have in mind an alternative of the same kind, meaning a new scientific explanation that involves only law and chance. In

that sense, I doubt that there is an alternative. Many persons have tried to find such a theory by postulating innovative macromutations (perhaps in the so-called *hox* genes that are common to many distinct groups) or vaguely-defined self-organizing systems or chaos theory or new laws of physics. None of this ever comes to anything more than unkept promises, which is why neo-Darwinism retains its status as the default position. If nature is all there is, and matter had to do its own creating, then there is every reason to believe that the Darwinian model is the best model we will ever have of how the job might have been done. To confirmed materialists and other persons who are bemused by the mystique of science, that means that the theory has to be accepted as true regardless of all the reasons to believe that it is false. To me it means that there is good reason to conclude that materialism is false and that we need to consider a different kind of explanation for the situation in which we find ourselves.