Finding Miller's King

Finding Darwin's God by Kenneth Miller (HarperCollins 1999) ISBN 0-06-017593-1
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Prior to the Boston Massacre of 1770, it was generally felt that King George III was the rightful ruler of the 13 colonies. Though there was much dissatisfaction with this tyrant, the majority of the colonists, if asked, "Who rules us: ourselves or the king?" would have begrudgingly answered, "the king."

In *Finding Darwin's God* Kenneth Miller, biology textbook author and professor at Brown University, asks a similar question, "Who made us: God or evolution?" Though he appears dissatisfied with the way Darwinistic evolution has been used to suppress religious thinking, Miller chooses the latter. He then goes on to discourage any revolt against Darwin and instead proposes a way for Darwinism to be reconciled to a belief in God: or more accurately, for God to be reconciled to Darwinism.

If Darwinism is true, then those who believe in God can only hope that He somehow fits with a Darwinistic origin of life. But if Darwinism proves to be false, it is our duty, like the patriots of old, to rise up and win freedom for our schools, our families and our minds.

How would we determine whether Darwinism is true or false? Would it take the blood of snowball-throwing Bostonians to get us to change our answer to the question: "Who made us?" from "evolution" to "God" or vice versa? Thankfully, Prof. Miller offers us a more peaceful solution: "[Science] really does depend, as its final judge of truth, on the objective reality of the world around it." If Darwinism is true, it should conform to the objective reality of the evidence.

This review will first briefly describe Miller's main points in favor of Darwinian evolution. A second section will present, in more detail, his critique of one recent alternative to Darwinism, Intelligent Design. The third portion will discuss Miller's unique method of reconciling Darwinism and theism. Finally, this review will compare Miller's science to "the objective reality of the world around it" and investigate his philosophical underpinnings.

Laying down the cards

Kenneth Miller does an excellent job of organizing his arguments. In chapter one, he sets forth the question "Who made us: God or evolution?" Wrapped in a retelling of his own experience of reading Darwin for the first time, Miller describes how the two different answers to the question: "Who made us?" has caused misunderstandings among scientific and religious people alike. He makes the purpose of his book clear: to find out whether God and Darwinian evolution can coexist.

In chapter two, Miller lays down what he considers to be Darwin's five best cards. First, he cites the fossil record as confirming the overall pattern of evolution predicted by Darwin: a gradual progression from simple to complex. Second, Miller moves on to discuss the geographical distribution of fossils and organism, claiming that finding similar looking animals near to one another lends support for Darwinism. In his third proof, Miller discusses the fossil record as it relates to more localized change, such as in the brain sizes of different hominids. Miller's point is that at the level of small changes, Darwinism fits the evidence. As his fourth proof, Miller offers the drug-resistance of bacteria and viruses to establish the neo-Darwinian creative mechanism (natural selection plus chance mutation). Finally, Miller claims that Darwinism is proved by the "test tube selection" experiments of molecular biology in which large pools of molecules are subjected to artificial selection and chance mutation.

From chapters three to five Miller looks at alternatives to Darwinism. He then launches into his stated purpose of the book: to reconcile Darwinism and theism. As will be discussed below, Miller's formulation of how God could act in nature without disturbing the flow of Darwinian evolution is quite interesting. But before considering Miller's theology, a closer look at his critique of a recent alternative to Darwinism is in order.

Misunderstanding Intelligent Design

Miller spends two chapters criticizing an alternative to Darwinism known as "Intelligent Design," or ID for short. By way of introduction, Miller first describes how ID posits an intelligent designer as the source of "the intricate structures and stunning diversity of life". In its simplest form, ID says nothing about the nature of this designer, but does allow for the designer to be non-material. One of Miller's most interesting arguments against ID is found in chapter five: his critique of Lehigh biochemist Michael Behe, author of *Darwin's Black Box*.

Behe's argument for ID involves the molecular workings of a cell. Like a mousetrap which requires several parts working together before even one mouse is caught, a feature Behe calls "irreducible complexity," the cell has molecular components which need to be completely assembled before a particular cellular function can occur. This means that the mechanism of natural selection (which selects *functional* cellular machinery) operating on chance mutations (which modifies only *one* component at a time) is insufficient to explain the origin of multi-component cellular machines.

To refute this argument, Miller first addresses Behe's claim that cilia, the cell's "rowing" machines, are irreducibly complex. However, it appears that Miller misunderstands Behe. Thinking that he is concerned simply with the number of rod-like fibers inside the cilia, Miller proceeds to show evidence of cilia with different numbers of fibers. This, he claims, destroys Behe's arguments.

Yet, the essence of ID is that, just like for the mousetrap, what really matters is the number of *different* parts. In the cilia, this means there needs to be 1) flexible, rod-like

fibers (at least two), 2) springs connecting the fibers, and 3) motors to slide the fibers relative to one another in order to power the bending motion of the fibers (and thus the cilia). Each of these three parts in turn is composed of different interlocking proteins which themselves are made up of complex amino acid sequences. Without all these components working together, cells will not row even a little bit. Thus, despite Miller's misunderstanding, the cilia's irreducible complexity still points to ID.

In chapter five, Miller also proposes an "acid test" for the Darwinian mechanism by asking it to "develop a multipart system." But as Behe has pointed out (see the website listed below), this is not an acid test for Darwinism at all, since Miller could always claim that if a Darwinian experiment failed to develop a multipart system, it was performed incorrectly. Furthermore, the particular experiment Miller selects does not demonstrate the development of a multipart system. The details of this experiment and a response to Miller's other critiques are found in Behe's *A Response to Critics of Darwin's Black Box* (http://www.iscid.org/papers/Behe_ReplyToCritics_121201.pdf). The take-home lesson from this on-line article and from the cilia example is that Miller, though confident in his attack on Behe and other ID supporters, misunderstands what is the essence of ID and seems to misrepresent the evidence.

Miller's theology

The latter half of *Finding Darwin's God* is an intriguing attempt to reconcile theism to Darwinism. In chapter six, Miller claims that the rift between God and evolution is the fault of over-zealous scientists who use their platform to castigate religion. Yet in the same chapter, he reveals the assumption that drives his efforts towards reconciliation: The belief that Darwinism is supported by *indisputable* evidence. Any religious person must therefore be reconciled to this truth or risk putting themselves (and Miller) to shame. Consequently, Miller spends much more of his time chiding religious people who look for errors in Darwinism than he does addressing the one-sidedness of modern academia.

Miller's scorn for those who point out the limitations of Darwinism underscores his second core assumption: The belief that science will eventually pin God-free explanations on all the secrets of the universe. When this happens, according to Miller, there will be no gaps in our scientific knowledge where God could hide: no gaps but one. Miller describes, in chapter seven, how quantum mechanical uncertainties make deterministic explanations insufficient for predicting the future or for explaining why the past happened in the way it did. In this way, quantum mechanics leaves a safe refuge for God, one approved by the authority of science itself. Miller uses the religious principle that God can work through the random occurrences and uncertainties of life to bring about his will in each individual. However, most religions also allow for God to act in a way that is distinct from mere chance events. Indeed, a god that works through random uncertainties is no god at all: certainly not the God of Christianity, Judaism or Islam. Ultimately, if God only operates in the contingencies of quantum mechanics, Liz Mariantes of the *Christian Science Monitor* is perfectly justified in stating that Miller's

God is "unappealingly distant: since for the most part, it's evolution, not Deity, shaping our lives".

In chapter eight, Miller presents a line of reasoning that describes how his view of God does not contradict science. For example, if science says the universe began in a big bang, then God could have been the First Cause. Or, when science says the physical constants are tuned to allow our existence, God could be the one to set those values. Does science say life is the product of multiple quirky contingencies? In that case, Miller's God would have wanted it that way in order to give us independence from his will. For science to say it took billions of years for us to evolve is not a problem, says Miller, since God is patient. Science says that nature is brutal, but this is essential, according to Miller, to give us free will. Science says the Biblical creation story is dead wrong, but Miller says it should be taken as a metaphor. After all these concessions, it seems that it is Miller, not the critics of Darwinism, who seeks to insert God into the gaps of science.

In the end, Miller concludes that when asked what kind of God he follows, he replies that he believes in Darwin's God. Ironically, Miller prefaces this conclusion by explaining that Darwin was quite confused about the nature of God. Was He the First Cause, was He involved in creating life, or did He exist at all? Miller presents Darwin as running the gambit from fence-sitting agnosticism, to wonder-filled theism. Perhaps Miller is a man equally befuddled by the nature of God. Perhaps this is because both Darwin and Miller begin from the wrong starting point: That truth-finding must conform more to the philosophy of materialism than to the evidence. But before addressing Miller's philosophical presuppositions, let us reexamine the science he uses to prove Darwinism.

Sloppy science

Looking back at Miller's five proofs of Darwinism, it is clear that some of what he says does not conform to "the objective reality" of the evidence. For example, contrary to what Miller says in his first proof, the fossil record shows the opposite of what Darwin had predicted. Instead of the major differences in organisms showing up *late* in the fossil record we see a massive explosion of nearly all the biggest differences in animals appearing *early*, at the onset of animal life. This sudden differentiation occurs in a geological instant called "the Cambrian explosion." Thus, the prediction that life-forms would steadily become more different given more time is not supported by the evidence.

Miller's second point, involving the geographical distribution of animals, could be a proof of Darwinism. However it could also be interpreted differently. Suppose there are pencils and pens in a drawer, and in another drawer are envelopes and paper. One could argue that this proves pens evolved from the more primitive pencils and envelopes from simple sheets of paper. But we know that pencils, pens, envelopes and paper are products of intelligent design. Likewise, their grouping into different drawers are the result of design. Thus, when similar animals are found living near to each other, this could simply be another example of design, and not evidence of Darwinian evolution.

It is also interesting to note that the geographical distribution of animals highlights an embarrassment to Darwinism known as "convergent evolution. For example, certain marsupials, which are said to have evolved in Australia from a single marsupial relative, look very similar to certain placentals (e.g. marsupial wolves vis-à
-vis placental wolves) yet quite different from their closer marsupian relatives (e.g. marsupial wolves vis-à-vis marsupial moles). Though "just-so" stories abound in explaining how animals that are supposed to be only distantly related can share so many features, the conundrum of convergent evolution remains.

In his third proof, (and in his final two proofs) Miller seems to make a mountain out of a molehill. For example, he takes a four micron change in the glass-like region of *Rhizosolenia's* cell walls over millions of years to be evidence that natural selection can create new species. But for Darwinism to be true it must explain how life originated in all its vast complexity, not just how a species changed slightly over time. Furthermore, when Miller turns to human evolution, he (and his textbooks) obscure the fact that experts disagree on whether the fossils he presents are even ancestors to humans. Only the careful reader, who checks Miller's footnotes, will discover that his graph of smooth human evolution is taken from an article that gives evidence for the graph's drastic need of revision.

For his fourth proof, Miller again makes large extrapolations from examples of small change. Based on evidence that bacteria and viruses mutate and become resistant to antibiotics and drugs, Miller claims that blind natural selection can "choose" beneficial characteristic and that chance mutations can "rewrite" genetic systems. But selection and mutation cannot choose or rewrite much of anything. At most they can knock out the systems that, when in place, are targets of man-made drugs. Granted, a bacterium that does not have a target for a certain antibiotic is better off than those that do, but this is not proof of the creative powers of neo-Darwinism. Rather, this is a sign of the destructive effects of mutations.

For his final proof involving test tube selection, Miller ignores the question of information. Since test tube selection experiments are a form of molecular computation (as are the documented cases of natural selection operating on variation) they must follow the same rules that govern computer programs. Namely, the amount of specified information that comes out of a system cannot exceed the information given to the system in the beginning. In other words, with generating information there is no such thing as a free lunch. This restriction is the death knell of Darwinism. It means that in order for Darwinism to explain the complexity of life, all the information present in life must have been present before life existed. Where was this information? How was it transferred to life? Miller has no answer.

Unholy matrimony

The root of Miller's sloppy science seems to be his effort to wed science to materialism: the belief that "objects and events of the natural world can be explained in terms of their material properties." Miller claims that it is essential to assume scientific materialism in order to answer the question, "Who made us: God or evolution?" He says that if non-material causes are required, it "would put a lid on curiosity, experimentation, and the human creative imagination." Miller admits that "scientific materialism makes a considerable leap of faith." But it seems a considerable leap of logic to justify this faith by claiming that its alternative would crush human creativity.

How is our creativity squelched when a non-material cause produces an effect that can be measured in the material world? How does it help science to be wed to the philosophy of materialism, which must rule out certain causes before looking at the evidence? Miller fails to address these questions and insists that if science is divorced from materialism, it will die altogether.

But will it? If science is separated from the assumptions of materialism, and follows the evidence wherever it leads, will it become sterile? No. Science was following the evidence, and was making great strides, long before materialism seduced Kenneth Miller and many in the scientific community. Even now, our scientific and technological breakthroughs are not the result of courting materialism or its younger sister, Darwinism, but from carefully following the evidence to the best explanation.

Geneticist Theodosius Dobzhansky claimed "Nothing in biology makes sense except in light of evolution." Miller carries this to the extreme, making evolution his king: the centerpiece of not just biology, but theology and philosophy as well. A more cautious student of science would insist that nothing about evolution can make sense except in light of the *evidence*.

Finding truth

A better alternative to the materialistic viewpoint presented in *Finding Darwin's God* would be a careful assessment of what is really true about Darwinism and a commitment not to teach falsehoods. For instance, many of the "icons" we use to teach our children about evolution are false, from the peppered moth story to the pictures of similar looking embryos from different animals (see for example Dr. Jonathan Wells's recent book *Icons of Evolution*). Moreover, these icons have been documented as false by scientists for many years. This pattern should not be allowed to continue. There is no reason, based on the evidence, why we must blindly follow Miller's king of Darwinian evolution. Rather, it seems wiser, for ourselves and our children, to find out what is *true* about the world in which we live.

We rightly give a certain authority to those who can tell us the truth about where we came from and how our world works. But if we are giving authority to the likes of Kenneth Miller, who tells us something other than the truth, we will ultimately suffer. Certainly, the colonists' prospects of self-governance did not look too bright in the winter of 1770, but the time had come to say, "Enough!" Perhaps the time is right for us to throw off the tyranny of Darwinism and insist on finding truth ourselves instead of letting Kenneth Miller, or anyone else, find it for us.