

fields that bear a lot of implications toward mutual illumination.

– Ming Lee

Coming to Peace with Science: Bridging the Worlds Between Faith and Biology

By Darrel R. Falk
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Finding Darwin's God: A Scientist's Search For Common Ground Between God and Evolution

By Kenneth R. Miller
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125 years after Charles Darwin's death, his ideas continue to generate debate and controversy. While the scientific evidence supporting his ideas on evolution is by now overwhelming, many still try to either discredit him or at least point out evidentiary gaps in his theories. The USA currently abounds with what one can only describe as vehement and polemical attacks on Darwin. Books are constantly published proclaiming the error of evolutionary theory, and Christian radio and television stations launch biblically based attacks on Darwin masquerading as scientific evidence. Those who support Darwin's teachings (which automatically includes most scientists, since they have studied the scientific evidence) feel themselves compelled to defend evolutionary theory whenever

possible. If the media is to be believed, a battle is being waged over Darwin and evolution, and it is being fought on radio, on television, in schools, and in our most august political establishments.

To further confuse matters, the debate over evolution is often billed as a battle between science and religion, with the former represented by atheistic scientists and the latter by Bible-thumping Christian fundamentalists. To embrace Darwin, it is argued, is to deny God, or vice versa. Matters are not helped by extremists on both sides, who use the debate to support their own ideological or quasi-religious agendas. The evolutionary biologist Richard Dawkins does not hesitate to use evolution to push forward his radically atheistic agenda that denies any purpose and meaning to human life. Christian fundamentalists, on the other hand, accuse Darwin's theory of being anti-God and thus causing a breakdown in social morals. The result is a fight which is both ludicrous in its appearance and tragic in its implications. Scientific findings are either ignored or distorted, schoolboards and school textbooks become ideological battlegrounds, and religious and scientific beliefs are tied into straitjackets that stifle human imagination and intellectual growth.

Faced by this frenzy of shouting voices and polemical chaos, it is a pleasant surprise to discover that there are still rational minds that refuse to accept the views of Richard Dawkins or radical Christian fundamentalists. In their well crafted books, Darrel R. Falk and Kenneth R. Miller demonstrate that belief in a Christian God and acceptance of Darwinian evolution are not automatically incompatible. Since both authors are professional biologists well recognized in their field, and religious believers who are deeply committed to their Christian faith, we would do well to listen to what they have to say.

Darrel R. Falk, a self-confessed Evangelical Christian, is a professor of biology at Point Loma Nazarene University. This alone is already noteworthy, since there is often a mistaken tendency to equate Evangelicalism with biblical fundamentalism. Falk's book, *Coming to Peace with Science*, demonstrates that Evangelical Christian beliefs are not automatically anti-Darwinian. Falk begins with a personal account of how his study of biology affected his religious beliefs. While at first he found his faith severely challenged, he eventually came to the realization that scientific inquiry and religious faith are concerned with very different issues. Indeed, for Falk the greatest threat to belief in God does not come from science, but from "reducing the Bible to a scientific textbook, because this approach distracts from the task of searching for the Bible's deepest truths" [p. 36]. The Bible's purpose is to lead people closer to God, science's is to understand the physical world, two very different goals and purposes. In chapter two Falk presents a summary of his religious faith, a summary which most Evangelical and Fundamentalist Christians would have no difficulty accepting.

Beginning with chapter three, Falk presents the scientific evidence for Darwinian evolution and for the ancient age of the earth. This evidence is indeed overwhelming. In clear and concise prose, Falk explains the numerous and independent scientific findings that prove the great age of the earth, the long fossil record, and the geographic and genetic relationship between all animals. Falk does an excellent job in demonstrating that one can not just accept some scientific findings and reject others that support evolution without undermining the whole scientific foundation on which modern society rests.

In his final chapter Falk explains why these scientific findings do not automatically lead to atheism. Falk does not believe that science can either prove or disprove the existence of a creator God. All it can do is tell us how the physical world works. Once we begin asking questions of purpose and meaning, we have left science and entered into the realm of faith. Thus, for Falk, it is quite possible to interpret the scientific evidence from a religious perspective: "If any lesson has come out of biology, it is that God works in subtle ways. God clearly uses natural forces to accomplish God's purpose, and often we see God's hand only when we look back in faith at the finished product" (p. 206). In the very process of Darwinian evolution, a Christian can claim to see God's awe inspiring creative act. This, however, is an interpretation of the scientific evidence, and not a scientific statement in itself.

Unfortunately, Falk does not further explore the full implications of his argument. He fails to point out that the same situation obtains with atheistic interpretations of Darwinism. When an atheist claims that Darwinian evolution reveals a meaningless and purposeless universe, he or she is presenting an interpretation of the scientific evidence which in itself is not scientific. Science simply does not ask questions about meaning and purpose. Both atheism and theism, therefore, could be described as faith statements: they interpret the scientific evidence from a particular faith perspective, but that perspective can neither be proved nor disproved by science.

Like Falk, Kenneth R. Miller's scientific credentials are impeccable. He is a cell biologist at Brown University, has published numerous academic articles, and has coauthored a number of high school and college biology textbooks. In *Finding Darwin's God*, Miller adopts the intriguing position that evolutionary theory is actually consistent with

traditional Western religious belief. His book, therefore, is more than just a review of the overwhelming scientific evidence for evolution. It is an attempt to show that acceptance of Darwinism contributes to a proper understanding of God, and that the denial of evolution leads to a distorted and damaging image of God.

The headings of a number of his chapters reinforce this point. In chapter three, "God the Charlatan," Miller explains why biblical fundamentalist attempts to explain away the scientific evidence for the great age of the earth leads to the belief in a deceiving God. Fundamentalists argue that God created the world c. 6000 years ago, and only made it appear to be much older. But if this is true, then God is not to be trusted: "What saddens me is the view of the Creator that their intellectual contortions force them to hold. . . . Their version of God is one who intentionally plants misleading clues. . . . [W]ho has filled the universe with so much bogus evidence that the tools of science give us nothing more than a phony version of reality. In other words, their God has negated science by rigging the universe with fiction and deception. To embrace that God, we must reject science and worship deception itself" [p. 80].

In chapter four, "God the Magician," and chapter five, "God the Mechanic," Miller challenges the arguments that claim either that microevolution does not lead to macroevolution, or that some biological systems are so complex that they could not have evolved from simpler processes (the "irreducible complexity" argument). Supporters of these positions agree that mutations are constantly affecting organisms at the genetic level, but insist that these mutations are too slow to explain geologically rapid transitions from one species to another, or can not account for complex biological processes and systems. Thus, major evolutionary

changes must require either the magical hand of God, or a divine mechanic who creates ready made complex machines. Miller, however, shows "that the microevolutionary processes so scorned by critics of evolution are more than sufficient to account for even the fastest transitions documented in the fossil record" [p. 111]. To claim that God now and then suddenly jumps in and "creates" a new species out of the blue is to believe in "a magician who works cheap tricks." For Miller, God's "magic lies in the fabric of the universe itself" [p. 128]. Likewise, scientific experiments have proved that complex biological systems can evolve from less sophisticated processes: "The multiple parts of complex biochemical machines are themselves assembled from smaller, working machines developed by natural selection" [p. 150]. To claim otherwise is to believe in a God who "rolled up his sleeves, packed all of his sweat, craftsmanship, and biochemical skill into a single, ancient cell, and then let things roll" [p. 162].

Miller's scorn, however, is not limited to people who ignore scientific evidence because it does not harmonize with their particular idea of God. In chapter six, "The Gods of Disbelief," he is equally scathing toward those who use Darwinism to deny the existence of God or meaning. Figures like Richard Dawkins, Daniel C. Dennett and William Provine are quoted as examples of individuals who use evolution to attack religious belief. In the face of such attacks, Miller is not surprised that believers who are not scientists draw the erroneous conclusion that evolution and belief in God are incompatible. Miller, however, agrees with the National Academy Science, which states that "Religion and science answer different questions about the world. Whether there is purpose to the universe or a purpose for human existence are not questions for science" [p. 169].

Miller believes it is possible to accept evolution and still allow for the possibility

of divine activity. However, this activity must be part of the natural processes themselves: “What if the regularities of nature were fashioned in a way that they *themselves* allowed for the divine?” [p. 191] In the most fascinating section of his book, Miller applies nuclear physics to evolutionary theory to argue that there may be more going on than meets the scientific eye. Miller draws attention to the fact that science works because it is based on causality: it is able to determine what causes what and make predictions. From this perspective, nature can be seen as a complex but deterministic system in which A causes B causes C, etc. However, when we enter the subatomic world, this concept of reality breaks down. Quantum physics has discovered that unpredictability is built into the subatomic world itself. The very structure of nature itself means that “we cannot predict in advance what will happen, no matter how precise our knowledge of the system might be” [p. 200]. The reader may ask what the subatomic world has to do with the evolution of species, but Miller is quick to point out that genetic mutations, which are one of the driving forces of evolution, take place because of events at the subatomic level: “In other words, evolutionary history can turn on a very, very small dime – the quantum state of a single subatomic particle” [p. 207]. Humans, therefore, can not have ultimate knowledge of what causes what. For Miller, the religious consequences of these findings are profound: “That ought to allow even the most critical scientist to admit that the breaks in causality at the atomic level make it fundamentally *impossible* to exclude the idea that what we have really caught a glimpse of might indeed reflect the mind of God” [p. 214]. Although Miller does not say so explicitly, the fact of quantum uncertainty makes it possible to believe in a God who shapes natural history within the laws of nature themselves.

Darel R. Falk’s and Kenneth R. Miller’s arguments are invaluable contributions to the evolution vs. God debate. They show that the debate itself is wrong footed and reflects both poor science and poor religious belief. One can only hope that what they have to say will eventually be heard in a debate that at the moment is more shaped by acrimony, rhetoric and ideological intransigence than any form of reasonable inquiry.

– Kenneth A. Locke

Awakening to the Infinite Light: The Heart of Amitabha Sutra

By Kodo Matsunami
Tokyo : Buddhist Searchlight Center
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The *Amitabha Sūtra* (*Sukhāvāṭīvyūha Sūtra* [Sutra of the Buddha of Infinite Light] is one of the most widely read / chanted sutras. This text recounts the world of Ultimate Bliss, the Pure Land, into which those who trust in Amitabha (Amida) Buddha’s Vows and embrace various forms of Pure Land discipline are born. This sutra was translated by an imperial edict of the Later Qin (384 – 417). The great translator Kumārajīva undertook the translation project. The Chinese and Japanese have been greatly influenced by the version made by Kumārajīva.

This *Amitabha Sutra* depicts an ideal world, a “Land of Bliss” that is located in the West Paradise. Adherents believe that Amitabha Buddha provided an alternate practice towards attaining enlightenment: the Pure Land. Instead of solitary