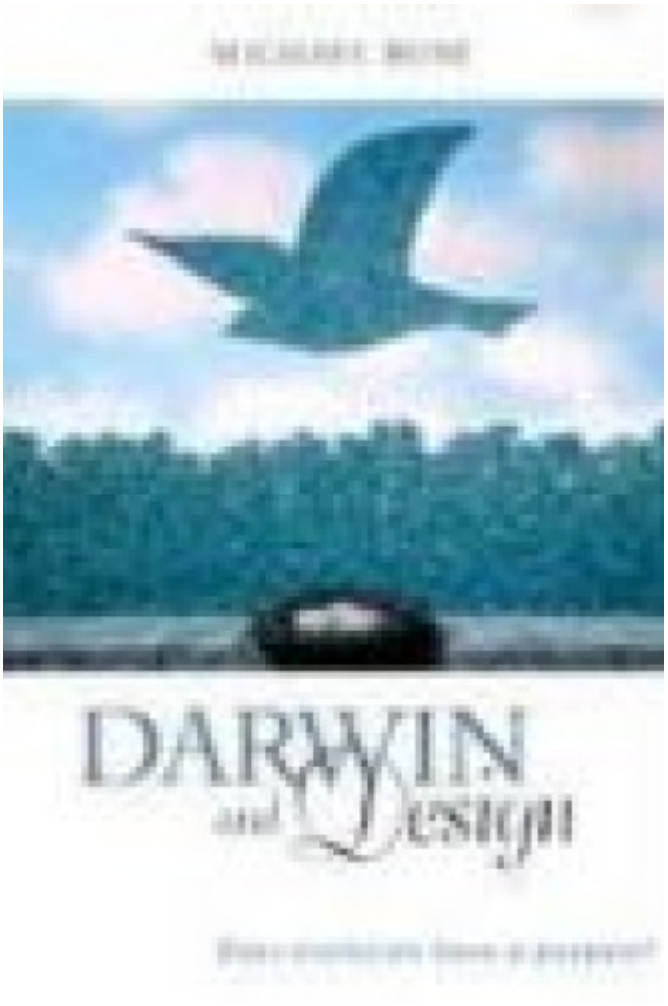
Made by design?

By John F. Haught in the December 13, 2003 issue

In Review



Darwin and Design: Does Evolution Have a Purpose?

Michael Ruse
Harvard University Press

Stegosaurus is a dinosaur renowned for the plates that run up and down its back. When we look at its fossilized remains today, it is hard to suppress the question of

what the plates were for. What function or purpose did they serve? Michael Ruse considers this an excellent question, even though science has tried to cover up thoughts about purpose, or teleology. In *Darwin and Design* he argues that biology should not turn its back altogether on “final causes.”

Stegosaurus’s plated spine is an example of what evolutionists call “adaptations,” characteristics that allow living organisms to survive long enough within specific environments to reproduce. The plates apparently served to regulate temperature, helping to keep members of the species in existence long enough to bear offspring. Likewise the beaks of Charles Darwin’s Galapagos finches—to give perhaps the most famous example of adaptive evolution—possess a variety of shapes and sizes tailor-made to feeding upon an assortment of seeds native to their particular habitats. If we ask why birds on one isolated island have beaks different from those on others, the Darwinian answer is that they have adapted to the size and other features of edible seeds where they live.

But the question arises: Do dinosaurs and finches possess their specific features *in order to* realize particular goals or *because* during the course of evolutionary experimentation they have accidentally acquired adaptive functions by an impersonal process of natural selection? Isn’t it really the mechanical cause rather than the final cause that provides the explanation? This is the kind of question that T. H. Huxley, Darwin’s famous advocate, thought we should ask. He sided with the mechanists rather than the teleologists.

Ruse, a renowned philosopher of science at Florida State University, wants to have it both ways. He considers it entirely appropriate for biologists to be concerned not only with how biological traits came about but also with what specific organic features are for, even though most scientists and philosophers of science place questions of purpose outside the realm of research. Unwilling to reduce biology to physics, this expert on Darwinian theory considers it silly, and not even good biology, to overlook the actual goals that specific features like plates and beaks serve. He adds that Darwin himself understood adaptive complexity in terms of end-directed causes.

Furthermore, since evolutionary biology cannot avoid metaphors, Ruse argues that the “metaphor” of design is helpful and explanatory. Evolutionary biologists need not apologize to physicists or chemists for using such loose language. Perhaps Ruse’s hope is also that by allowing features of living beings to have a purpose, at

least a little of the tension between science and religion after Darwin may be slackened. After all, isn’t purpose in nature a clear signal of divine design?

Ruse, of course, knows that Darwin did not understand purpose or final cause in specific organisms as having any theological implications whatsoever. Traditional natural theology had considered adaptation to be a sign of divine design, either direct or indirect. Pre-Darwinian natural theologians believed that God fashioned the features of living beings for precise functions; hence the scientific detailing of these functions implicitly glorified the Creator. How marvelously adapted the round eyes of marine creatures are, for example, to the refraction of light rays under water, thus allowing them to see clearly. And how else could we explain such fine-tuning except by supposing the existence of an intelligent designer who fits organisms so precisely to their environments?

After Darwin, however, adaptive complexity has received an alternative explanation—one that many scientists and philosophers now consider a rival to divine providence. Natural selection of accidentally favorable adaptations during a seemingly endless span of cosmic and biological time provides an account of organic life that appears to make any appeal to divine influence or purposiveness superfluous.

Correspondingly, in the thinking of many evolutionists, talk about purpose just opens the door to annoying theological imposition. Science does not need to deal with the question of what things are for, so it should avoid language that hints of an intentionality underlying natural phenomena. Instead it must be content to ask simply how all the living organisms acquired their adaptive features during their evolution. For many if not most biologists, natural selection alone seems to be explanation enough.

Ruse engages in animated conversation with these purists. He considers the self-restriction of science to the study of mechanical or material causes to be an unnecessarily rigid methodological requirement, at least in biology. He does not wish to assert that final causes actually exist or that they have any explanatory place in a purely physicalist understanding of nature. But his readable and instructive new book dwells on the apparent paradox that even though, strictly speaking, Darwinism is incompatible with design, biologists “still go on using and seemingly needing this way of thinking.”

Thus he considers the question of living complexity—which has recently drawn much attention in science and religion discussions—to be important. Unlike most other philosophers of science, he does not immediately cast scorn on the likes of William Dembski and Michael Behe, who have focused on the apparent design of cells and organisms. In fact, he finds something wholesome, and in keeping with "old-fashioned" wonder at the marvelous complexity in the work of nature, in the work of Intelligent Design theorists.

In the final analysis, however, it is clearly the materialist evolutionism of a thinker like Richard Dawkins rather than the implicit theism operative in Dembski's or Behe's writings that guides Ruse's reasoning. Whatever design we observe in nature is, he admits, only apparent. He repeatedly uses expressions such as "seeming design" or "apparent design" in order to make it clear that he cannot countenance the argument that adaptive complexity is the consequence of divine influence. In order to cushion himself against such an obsolete inference, he distinguishes between what he calls the "argument to complexity" on the one hand, and the "argument to design" on the other.

By "complexity" Ruse means "adaptive complexity," and he sees evolutionary biology as in effect arguing that this or that characteristic of living beings can often be rendered intelligible only if we consider what function or purpose it serves. Thus there is room in biology for teleological language as long as we don't use it as a jumping-off point to natural theology. Criticizing those philosophers of science who are obsessed with efficient and material causes to the absolute exclusion of teleology, he wants to return to the more commonsense approach of Darwin himself.

Nevertheless, he admits, "end-directed thinking—teleological thinking—is appropriate in biology because, and only because, organisms *seem* [my emphasis] as if they were manufactured, as if they had been created by an intelligence and put to work." For Ruse, no less than Dawkins, final causes have no real explanatory status.

By "argument to design" Ruse is referring to natural theology's claim that organized complexity cannot be fully accounted for naturalistically, but requires divine intelligence. What, though, is Ruse really attempting to get across in pressing the distinction between complexity and design, and in tolerating final-cause language as essential to an integral biology even though it is not to be taken literally? Is he trying to facilitate discussions between science and religion by demonstrating that science

is not so opposed to considerations of purpose as it is usually thought to be? At times the reader almost gets such an impression. Substantively speaking, however, Ruse clearly believes with Dawkins that organic traits are only “design-like,” not really intended. And this qualification would seem to put him in the company of contemporary evolutionists who consider Darwinism to have destroyed final causes and, along with them, the foundations of theology.

Does Ruse’s nominal tolerance of teleology, yet virtual expulsion of divine design, itself entail atheism? He does not leap to this conclusion. He has previously identified himself as an agnostic and, philosophically speaking, a materialist, but in another recent book—*Can a Darwinian Be a Christian*?—he makes it clear that a contemporary evolutionist can be a theist, especially since the likes of Ronald Fisher and Theodosius Dobzhansky have been devoutly so.

Ruse’s generous and sincere outreach to the theological community on issues in science and religion is both inviting and intriguing. Unlike many other evolutionists, he takes theologians seriously. Ruse’s works are accessible and invaluable sources of information on evolutionary history and philosophy. They can be of great help to those in the theological and religious communities who wish to take Darwin seriously. *Darwin and Design* is no exception.

In order to locate and appreciate Ruse’s point of view, however, it is essential first to look carefully at the range of positions available on the question of God and evolution. There are at least four main parties involved in this important conversation (leaving the creationists aside for now). The first of these is made up of the evolutionary biologists themselves; the second consists of those who believe that evolution requires a materialist, and hence atheistic, interpretation (evolutionary materialism); the third group comprises the proponents of Intelligent Design Theory (IDT); and the fourth is the evolutionary theists, those who consider Darwinian evolution not only compatible with biblical faith, but an illuminating framework for arriving at a deeper understanding of God than is implied in the notion of a designer.

Evolutionary biologists (Group 1) are interested only in gathering and laying out the empirical evidence for evolution, using such notions as variation, adaptation and selection to make sense of the data from biology, geology, paleontology, comparative anatomy, biogeography, genetics, radiometric dating and so on.

The evolutionary materialists (Group 2) go beyond pure science. They embed the evolutionary data, often unconsciously, in a purely physicalist worldview, taking Darwinian science to be the ultimate explanation of life's complexity. They have no room for any theological "argument to design" since to them it is clearly blind physical processes alone, and not God, that account for what seems to us humans to be so design-like in finches' beaks and dinosaurs' plates.

IDT disciples (Group 3) reject the materialist claim that natural selection could conceivably be the ultimate explanation of adaptive complexity. But like their opponents in Group 2 they fuse their scientific observations with a metaphysics—in their case a firm belief in the direct causal agency of "Intelligent Design"—thus resorting to a kind of explanation normally excluded from scientific inquiry. Not surprisingly, they draw hostile reactions not only from Group 2 but also from Group 1, which they sometimes fail to distinguish carefully from Group 2.

And their opponents also include those in Group 4, the evolutionary theists. These are scientists, theologians and philosophers who consider Darwinian explanations to be appropriate to biology, but who cannot take evolutionary processes to be the ultimate or final explanation of life and its complexity. Evolutionary theists would concur with the IDT advocates that at some point the search for adequate explanation must appeal to the notion of divine intelligence—or better, divine wisdom—if the idea of God is to have any relevance at all. However, they are not obsessed with the idea of design. And because they allow for many levels in the quest to understand the universe, they do not feel obliged to force theological explanation into what is more properly the sphere of purely scientific clarification. They are content to allow science to exclude methodologically any direct appeal to intelligence, intentionality, purpose or God. But by allowing for an extended hierarchy of explanations, they can accept Darwinian accounts as appropriate at one level, while still leaving ample room for theological understanding at a deeper one.

In light of this fourfold division, it appears that the current disputes about Darwin and design are at bottom not so much conflicts between science and religion as disagreements about whether there is room for only one level—not a plurality of levels—on which to understand the story of life. If we assume that only one explanatory slot is available for everybody, we will be forced to take as ultimate explanation whatever we can squeeze into that solitary aperture.

Evolutionary materialists and IDT disciples, fierce rivals though they are, share a tendency toward explanatory monism. They both try to channel what could be a fertile hierarchy of distinct levels of explanation into a restrictive cognitive bottleneck wherein scientific accounts of adaptive complexity merge indistinguishably with metaphysical or theological claims. Although they are in conflict on the relevance of Darwinism, Groups 2 and 3 apparently agree that Darwinism and theology—assuming intelligent design to be at least implicitly theological—must compete for the single explanatory opening available.

Ruse seems to belong to Group 2, that of evolutionary materialism. Even though he does not explicitly trumpet such an allegiance, he nevertheless reveals a tendency to conflate evolutionary biology with philosophical materialism. This amalgamation is not at all uncommon among evolutionists today, and it is one to which IDT advocates are especially sensitive. IDT spokesperson Phillip Johnson has even pointed out that Ruse once “gave away the store” when the latter publicly admitted that Darwinism goes best with materialism.

Ruse, unlike some of his favorite biologists, is at least conscious of his metaphysical assumptions. But the question he needs to address more carefully is: How can we be certain that a materialist worldview is the most illuminating setting for evolution? How would one go about gathering evidence to support such a belief? And is it completely inconceivable that a theistic worldview, one in which God (no longer understood simply as an engineer) opens up the universe to an ever new future, could provide a fertile setting for understanding evolution?

In any case, the two groups in our bunch that can get along best with each other, without compromising the integrity of either science or theology, are 1 and 4. Unfortunately, efforts to push forward a careful alliance of theology with evolutionary biology are often obscured by the more sensational spats going on between IDT defenders and creationists on the one side, and evolutionary materialists on the other. It does not help things, either, that most members of Group 2 do not distinguish clearly between Groups 3 and 4, generally taking them both to be just as misguided as creationists are.

It is to Ruse’s great credit that, unlike most of his friends in Group 2, he sees and respects the nuances of theological discussion. And although he still seems to feel most at home with the evolutionary materialists, his openness to dialogue is promising. Theologians and other readers will find in Ruse an author with whom they can easily converse, and whose writings will always educate. *Darwin and Design* is a

good place to start.