

Challenging Darwin's Myths by Mark Hartwig

It is absolutely safe to say that if you meet somebody who claims not to believe in evolution, that person is ignorant, stupid or insane (or wicked, but I'd rather not consider that).

--Richard Dawkins, prominent Oxford scientist and author

Ever since Darwin first published his theory of evolution, his defenders' favorite tactic against critics has been to attack their character and intelligence. Darwin himself used it against some of the greatest scientists of his day, accusing them of superstition and religious bias.

Now that Darwinism rules the scientific roost, such charges against dissenters are widespread. Not even schoolchildren are immune. Indeed, California's science education guidelines instructs teachers to tell dissenting students, "I understand that you may have personal reservations about accepting this scientific evidence, but it is scientific knowledge about which there is no reasonable doubt among scientists in this field. . ."

By today's rules, criticism of Darwinism is simply unscientific. The student who wishes to pursue such matters is told to "discuss the question further with his or her family and clergy."

But is Darwinism so obviously true that no honest person could doubt it? Are alternatives like "intelligent design" so unscientific that no reasonable person could embrace them?

The answer to both questions is a resounding *no*.

Elegant . . . But Wrong

The essence of Darwin's theory is that all living creatures descended from a single ancestor. All the plants, animals, and other organisms that exist today are products of random mutation and natural selection--or *survival of the fittest*.

According to Darwin, nature acts like a breeder, carefully scrutinizing every organism. As useful new traits appear, they are preserved and passed on to the next generation. Harmful traits are eliminated. Although each individual change is relatively small, these changes eventually accumulate until organisms develop new limbs, organs, or other parts. Given enough time, organisms may change so radically that they bear almost no resemblance to their original ancestor.

Most importantly, all this happens without any purposeful input--no Creator, no Intelligent Designer. In Darwin's view, chance and nature are all you need.

This all sounds very elegant and plausible. Problem is, it's never been supported by any convincing data.

For example, consider the fossil evidence. If Darwinism were true, the fossil evidence should show lots of gradual change, with one species slowly grading into the next. In fact, it should be hard to tell where one species ends and another begins. But that's not what we find.

As Darwin himself pointed out in his book, *The Origin of Species*:

. . . [T]he number of intermediate varieties, which have formerly existed on the earth, [must] be truly enormous. Why then is not every geological formation and every stratum full of such intermediate links? Geology assuredly does not reveal any such finely graded organic chain; and this, perhaps, is the most obvious and gravest objection which can be urged against my theory.

Darwin, of course, attributed this problem to the imperfection of the fossil evidence, and the youthful state of paleontology. As the discipline matured, and as scientists found more fossils, the gaps would slowly start to fill.

But time has not been kind to Darwinism. Paleontologists have certainly found more fossils, but these fossils have only deepened the problem. As the fossils piled up, what paleontologists discovered was not gradual change, but stability and sudden appearance. It seems that most fossil species appear all at once, fully formed, and change very little throughout their stay in the fossil evidence.

This poses quite a challenge for Darwinist paleontologists. One such paleontologist, Niles Eldredge, put it this way:

Either you stick to conventional theory despite the rather poor fit of the fossils, or you focus on the [data] and say that [evolution through large leaps] looks like a reasonable model of the evolutionary process--in which case you must embrace a set of rather dubious biological propositions.

Large jumps are *anathema* to good Darwinists because they look too much like miracles. You just can't have, say, reptiles giving birth to birds.

Things get particularly bad with the *Cambrian explosion*, which paleontologists believe took place about 530 million years ago. In an instant of geological time, almost every animal *phylum* seemed to just pop into existence from nowhere.

To understand just how big an "explosion" this was, it might help to understand what a phylum is. A phylum (*phyla* for plural) is the broadest classification of animals there is. As opposed to a single species, like a chimpanzee, a miller moth, or a crow, a phylum takes in a wide variety of organisms.

The phylum that contains humans also contains elephants, squirrels, canaries, lizards, guppies, and frogs. Indeed, it contains every animal with a backbone--and then some.

If the differences within a phylum are vast, the differences between phyla are really wild. As much as a chimpanzee may differ from a fish, it differs even more radically from a sea urchin or a worm. In fact, you could say it's built on an entirely different architectural theme.

That's why the Cambrian Explosion is so troubling for Darwinists. What paleontologists find isn't just the sudden appearance of a few new species. What they find is the appearance of species so utterly distinct they have to be placed in completely different phyla.

Even Oxford zoologist and arch-Darwist Richard Dawkins has remarked, "It is as though they were just planted there, without any evolutionary history."

Worse yet, after the Cambrian Explosion, almost no new phyla appear in the fossil record--and many go extinct. By conventional dating, that's a 500 million year dry spell.

This is exactly the opposite of what Darwin would have predicted. According to Darwinism, new phyla are produced by the gradual divergence of species. As species split off from each other, they eventually become so dissimilar as to constitute a whole new body plan. Over time, then, we should see new species slowly appearing, followed by the much slower appearance of new phyla--what Harvard paleontologist Stephen Jay Gould calls a "cone of increasing diversity."

Instead, the cone is upside down. Even by conventional timelines, the fossils look very non-Darwinian.

Darwinists express confidence, of course, that future discoveries will clear up the mysteries. But so far, the research has only deepened them. A recent reassessment of the fossils has added perhaps 15 to 20 new phyla to the Cambrian zoo. Moreover, discoveries in 1992 and 1993 have shrunk the explosion's estimated duration from 40 million years to less than 10 million.

Science or Philosophy?

The fossil problem is just one of Darwinism's woes. Virtually every other area of research poses problems, too. But like the bunny in the Energizer battery commercials, Darwin's theory just keeps going.

Why? Because Darwinism is perhaps more a matter of wishful thinking than fact.

Professor Phillip Johnson is a professor of law at the University of California at Berkeley. While on sabbatical in England several years ago, he became fascinated with the serious problems in Darwin's theory. He was also struck by how Darwinists continually evaded these difficulties with tricky rhetoric and pulpit pounding.

As he dug deeper into the scientific literature, he eventually became convinced that Darwinism wasn't so much a scientific theory as a grand philosophy--a philosophy whose goal is to explain the world in strictly naturalistic terms.

"The whole point of Darwinism is to explain the world in a way that excludes any role for a Creator," says Johnson. "What is being sold in the name of science is a completely naturalistic understanding of reality."

According to Johnson, the reason Darwinism won't die is that its basic premise is simply taken for granted: namely, that chance and the laws of nature can account for everything we see around us. Even living things.

Once that assumption is made, Darwinism has to be true, because nothing else will work. Creation has been ruled out from the start, and the other naturalistic theories are even worse than Darwin's. So the argument that Darwinism is wrong can't even be heard.

Design as Science

If scientists are wrong about Darwinism, are they also wrong about the notion of intelligent design? Might not the notion of design be worthy of a second look?

A new breed of young Evangelical scholars thinks the answer to both questions is *yes*. They are arguing persuasively that design is not only scientific, but is also the

most reasonable explanation for the origin of living things. And they're gaining a hearing.

One such scholar is Stephen Meyer, a graduate of Cambridge University in the philosophy of science and now a professor at Whitworth College in Spokane, Wash. Like Johnson, Meyer believes that the prohibition of design has essentially stacked the deck in favor of Darwinism.

"There's been a kind of intellectual rigidity imposed on the origins discussion," says Meyer. "It's only possible to talk about origins in a naturalistic vein, because people believe that the rules of science prohibit talking about intelligent design."

But Meyer says this prohibition rests on a flawed view of science--one now rejected by many philosophers and historians of science.

The basis for this rejection is an attempt to distinguish science from other forms of reasoning. Scientists and philosophers who hold this view employ certain criteria that allegedly set science apart from other disciplines, such as theology, history, or literary criticism.

For example, someone might say that a scientific theory must explain everything in terms of observable objects and events, or that it must make predictions, or that it must be capable of being proven wrong. These criteria are called *demarcation standards*.

Although scientists and philosophers have proposed many demarcation standards, says Meyer, none of them do what evolutionists want them to--which is to exclude intelligent design as a scientific theory.

“When applied even-handedly, demarcation standards either confirm that design is scientific, or they exclude evolution, too,” says Meyer.

For example, Darwinists like to argue that design is unscientific because it appeals to unobservable objects or events, such as a Creator. But Darwinism also appeals to unobservables.

“In evolutionary science you have all kinds of unobservables,” says Meyer. “The transitional life forms that occupy the branching-points on Darwin's tree of life have never been observed in the rock record. They've been postulated only because they help Darwinists explain the variety of life forms we observe today.”

When scientists are trying to reconstruct past events, appealing to unobservables is entirely legitimate, says Meyer. What's illegitimate is to say that design theorists can't do the same thing.

Indeed, the concept of design is regularly used by scientists and non-scientists alike.

William Dembski, another Evangelical scholar, is director of the Center for Interdisciplinary Studies at Princeton University. He holds a Ph.D. in mathematics from the University of Chicago and another in philosophy from the Chicago campus of the University of Illinois. He has also been a National Science Foundation doctoral and postdoctoral fellow.

Dembski argues that intelligent design, far from being a strange and exotic notion, is something we encounter and recognize every day. Dembski points to entire industries whose very existence depends on being able to distinguish accident from design: including insurance fraud investigation, the criminal justice system,

cryptography, patent and copyright investigation, and many others. We do not call these industries “unscientific” simply because they look for evidence of design.

Indeed, whole scientific disciplines could not exist without the notion of intelligent design. Anthropology and archaeology are two such disciplines.

“How could we ever distinguish a random piece of stone from an arrowhead except by appealing to the purposes of primitive artisans?” says Dembski.

According to Dembski, we recognize design in events or objects that are too improbable to happen by chance. Stones don't turn into arrowheads by natural erosion. Writing doesn't appear in sand by the action of waves. A fair coin doesn't come up heads a hundred times in a row. These things only happen when intelligence is allowed to determine the outcome.

On the other hand, there's more to design than low probabilities. For instance, if you toss a coin a hundred times, any string of results will be extremely improbable. (If you don't believe that, try getting exactly the same string of results twice.) Still, if someone told us they flipped a penny a hundred times and got results like the following, we'd probably believe them:

Toss	1	2	3	4	5	...	96	97	98	99	100
Results	T	H	T	H	H	...	H	H	H	H	T

On the other hand, says Dembski, “Suppose this person comes to you and says, ‘Would you believe it? I just flipped this penny 100 times, and it came up heads each time.’ You would be ill-advised to believe that this person is telling the truth.”

So what's the difference between the first set of results and the second? If you look at just the probabilities, there's no difference at all. Yet the second sequence makes us suspicious, while the first one does not. We would also be suspicious if the tosses came up all tails, or if the first 50 tosses were heads and the next 50 were tails-- or if the same sequence came up two times in a row.

Thus, it's not just the low probability that makes us raise our eyebrows. It's also the kind of sequence we get.

“Our coin-flipping friend who claims to have flipped 100 heads in a row is in the same boat as a lottery manager whose relatives all win the jackpot or an election commissioner whose own political party repeatedly gets the first ballot line,” says Dembski. “In each instance public opinion rightly draws a design inference and regards them guilty of fraud.”

If detectives can use this kind of thinking to spot election and lottery fraud, if archaeologists can use it to spot arrowheads, why can't biologists use it to look for design in the living world?

Currently, Dembski, Meyer, and Paul Nelson, a biologist and Ph.D. candidate in philosophy at the University of Chicago, are writing a book that details precise scientific criteria for recognizing design, and applies them to biological systems.

Irreducible Complexity

Even without precise definitions, however, it's not hard for most of us to recognize design in the living world. The exquisite complexity of living organisms

virtually proclaims the existence of a Creator. In fact, many Darwinists admit this-- except they say it's only an illusion, produced by strictly natural forces.

For Michael Behe, a Catholic biochemist at Lehigh University in Bethlehem, Pa., this complexity is just too extreme for Darwinism to be plausible. He argues that many systems in living organisms are irreducibly complex. They consist of several parts, all of which must be present for the system to work.

"It's like a mousetrap," says Behe. "A standard household mousetrap has about five parts, all of which must be present for the trap to work. If you take away any of those five parts, you don't have a functioning mousetrap. You can add the parts one by one, but until you get to the full 5 parts, you have no function. It's an all or nothing kind of thing."

This irreducible complexity exists even at the level of a single cell.

"It was originally thought in Darwin's day that cells were very, very simple things--like little blobs of gel," says Behe. But as science has progressed, it's shown that cells are extraordinarily complex, more complex than anybody thought."

One example is the system that transports proteins within the cell from where they're made to where they're used.

As it turns out, the cells that make up most organisms have several compartments. For the most part, proteins and other molecules don't just float around loose in the cell, but must be moved from place to place to place.

Enzymes are a class of protein that helps the cell digest other kinds of proteins. They are created in a compartment called the *endoplasmic reticulum*. But they do all their work in another compartment, called the *lysosome*.

In order to get from the one compartment to the other, they have to be stuffed into a kind of bus (actually, a *vesicle*). The “bus” then travels to the destination compartment and eventually merges with it, spilling its contents into the compartment.

Achieving this task requires several very specific proteins. You need certain proteins (along with certain fats) just to form the little capsule that contains the enzyme. You need others to help the capsule grab onto just the right protein, since the endoplasmic reticulum creates all sorts of proteins at the same time. Finally you need proteins that help the “bus” attach itself to the destination compartment and merge with it.

“Now if you think about irreducible complexity,” says Behe, “virtually all of these proteins have to be there from the beginning, or you simply don’t get any function.”

That makes it tough for Darwinists to argue that design is simply an illusion produced by mutation and natural selection.

“Darwin said one thing pretty strongly in the *Origin of Species*. He said that if it could be shown that any system or organ could not be produced by many small steps, continuously improving the system at each step, then his system would absolutely fall apart.

“Now the thing about irreducibly complex systems is that they cannot be produced by numerous small steps, because one does not acquire the function until close to the end, or at the end. Therefore, with irreducibly complex systems, they cannot be produced by Darwinian evolution.”

So maybe design is not an illusion after all. Maybe it's the way things really are.

Gaining Ground

Of course, most scientists are far from throwing in the towel on Darwinism or accepting design. Nevertheless, it's getting easier to gain a hearing.

In March 1992, a landmark symposium took place at Southern Methodist University in Dallas. At that meeting, Phillip Johnson, Stephen Meyer, William Dembski, Michael Behe, and other Christian scholars squared off against several prominent Darwinists. The topic of debate was "Darwinism: Science or Philosophy?"

The proceedings of the meeting have since been published in a book by the same title. (See accompanying "resources" sidebar.)

The remarkable thing about the meeting was the collegial spirit that prevailed. Creationists and evolutionists met as equals to discuss serious intellectual questions. Of course, few issues were resolved. But in today's climate, where dissent is frequently written off as religious bias, just getting the issues on the table was an accomplishment in itself.

What's more, several months after the debate, one prominent Darwinist who participated in the symposium publicly conceded that one of the points Johnson made at the meeting was correct: namely that Darwinism is ultimately based as much on philosophical assumptions as on scientific evidence.

This admission, which took place at a national meeting of country's largest science society, the American Association for the Advancement of Science,

scandalized the Darwinist community, which likes to portray evolution as an indisputable fact. It was all the more scandalous because the speaker had specifically been invited to the meeting to denounce Johnson.

So things are slowly beginning to change. Creationists are still far from winning, but things are getting better. As Johnson points out, creationist arguments are getting more sophisticated, while most Darwinists are still responding with cliches. Thus, it's now the creationists who come across as asking the hard questions, and demanding fair debate.

But ultimately, says Johnson, it's not the debates or the arguments that will win the day.

“It's reality that's doing it. It's just the way the world is. And sooner or later, scientists will have to acknowledge that fact.”

An edited version of this article first appeared in the May issue of Moody Magazine.

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