

Sparks Fly Over Intelligent Design

Karl Giberson, Jonathan Wells, Michael Ruse, Michael Behe, William Dembski,
Robert Pennock, and Eugenie Scott

-- by Various

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Karl Giberson: Editorial Guidelines: Prejudice or Stewardship?

This month's Readers' Forum features an interesting cross section of thinkers speaking their minds on the topic of intelligent design (ID). The discussion was initiated by Jonathan Wells, one of the leaders of the ID movement. Wells argues that the editorial deck is stacked against the ID movement, with leading journals publishing negative reviews of ID books but refusing to give the authors space to respond to their critiques.

Phillip Johnson's *Darwin on Trial*, for example, received a remarkably scathing, hostile review in *Scientific American* (See "Impeaching a Self Appointed Judge" by Stephen Jay Gould, July 1992). The editors refused, however, to publish a response from Johnson. And, as Wells argues below, later books from the ID movement, like Michael Behe's *Darwin's Black Box*, have received similar treatment.

Because of the importance of this question and widespread interest in intelligent design, we invited a number of leading participants in the ID discussion to weigh in on this topic, responding where appropriate to the other contributors.

Wells' charge of editorial bias is more complex than it might seem on the surface. If an editor chooses to publish a hostile review of a book, common politeness would suggest that the author ought to have some space to respond. But editors have a "higher calling" than common politeness, namely the editorial mission and guidelines that inform every decision as to what will be printed and what will be rejected. I have learned, since becoming the editor of *Research News*, common politeness is often in tension with editorial priorities.

The mission of *Research News*, for example, includes publishing the latest findings in science-and-religion, as reported by credible scholars in those fields. In my role as editor, I must make decisions about the "fringe" material at or beyond the boundaries of the established science-and-religion dialogue. In my editorial judgment, the collection of ideas known as "scientific creationism" (which is not the same as intelligent design) lacks the credibility to justify publishing any submissions that we get from its adherents.

I would go even further, in fact. The collection of creationist ideas (6,000 year old earth, no common ancestry, all the fossils laid down by Noah's flood, Genesis creation account read literally, etc.) has been so thoroughly discredited by both scientific and religious scholarship that I think it is entirely appropriate for *Research News* to print material designed to move our readers away from this viewpoint. For example, we might publish a negative review of a book promoting scientific creationism (or astrology, or the healing power of crystals, for that matter), while refusing to allow the author a chance to respond. Is this an unfair bias? Or is it proper stewardship of limited editorial resources?

"Editorial guidelines" may occasionally be a cover for "editorial bias," but every editor has to make choices regarding what to print and what to reject.

This month's Readers' Forum raises this very interesting question in the context of intelligent

design.

Karl Giberson, Ph.D., is the editor of Research News.

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Jonathan Wells: Design Theorist Charges Academic Prejudice is a 'Catch-23'

In Joseph Heller's classic novel about World War II, an aviator could be excused from combat duty for being crazy. But a rule specified that in order to be excused he had to ask first, and anyone who asked to be excused from combat duty was obviously not crazy. The rule that made it impossible to be excused from combat duty was *Catch-22*.

A similar rule was invoked before the Ohio State School Board on March 11 by defenders of Darwinian evolution, who argued that intelligent design theory is not scientific because it has not been published in peer-reviewed science journals.

Science journals, especially in biology, are strongly pro-Darwin. I had my first personal encounter with this bias about four years ago. While a graduate student in embryology at the University of California, Berkeley, I noticed something disturbing about my biology textbooks: They contained drawings to show how early similarities in vertebrate embryos provide strong evidence for the common ancestry of humans and fish. Yet, I knew from my training in embryology that the early embryos of humans and fish actually look very different from one another. I soon learned that the textbook drawings had been faked by 19th century German Darwinist Ernst Haeckel, and I decided to write an article alerting biology teachers to this fact.

In 1998, I submitted an article about this to the peer-reviewed *American Biology Teacher*, the official journal of an organization whose declared mission is to empower educators "to provide the best possible biology and life science education for all students." My article did not criticize Darwinian evolution; in fact, it explicitly pointed out that "it would be illogical to conclude that Haeckel's distortions invalidate Darwin's theory," because Darwin did not base his inferences on embryological evidence alone. My article did, however, state, "It might be better to look elsewhere for evidence of evolution."

The article was given to two anonymous reviewers; one liked it, and the other did not. The only change recommended by the first was that I include more references. The second recommended, among other things, that I "emphasize what is useful about the study of embryology in evolution" and that I "detail some positive lessons that could be demonstrated through comparative embryology."

The journal editor wrote to me: "Your paper is acceptable for publication, provided you revise the paper according to the comments provided by the reviewers." I added some quotes from other biologists who thought that the study of embryology would add to Darwin's theory; with this mandatory affirmation of faith in evolution, my article was published in May 1999.

The pro-Darwin bias in biology journals effectively excludes an alternative scientific theory such as intelligent design. Michael J. Behe, a professor of biochemistry at Lehigh University, pointed out in a 1996 book, *Darwin's Black Box*, that some features of living things are "irreducibly complex" — that is, they function only when all of their parts are in place. Behe reasoned that such features could not have been assembled by "numerous, successive, slight modifications," as Darwin's theory requires, since the intermediate steps would have been non-functional and thus could not have been favored by natural selection. According to Behe, irreducible complexity points to intelligent design, rather than Darwinian evolution.

Darwinian biologists have criticized Behe's view in several peer-reviewed journals, including *Nature*, *Trends in Ecology and Evolution* and *The Quarterly Review of Biology*. Yet, peer-

reviewed science journals have consistently refused to publish Behe's responses to such criticisms. One journal editor, in refusing to publish one such response, cited a reviewer who wrote: "In this referee's judgment, the manuscript of Michael Behe does not contribute anything useful to evolutionary science."

When Behe submitted an essay to another biology journal, the editor wrote back: "As you no doubt know, our journal has supported and demonstrated a strong evolutionary position from the very beginning, and believes that evolutionary explanations of all structures and phenomena of life are possible and inevitable. Hence a position such as yours, which opposes this view on other than scientific grounds, cannot be appropriate for our pages." Since Behe's essay dealt with evidence for his position (the hallmark of scientific reasoning), the phrase "other than scientific grounds" simply reflects the fact that for this journal, "science" is equated with "evolution."

So the rule is this: A theory such as intelligent design, that fundamentally challenges Darwinian evolution, is not scientific so it can't be published in peer-reviewed science journals; and we know it's not scientific because it hasn't been published in peer-reviewed science journals. *Catch-23!*

Jonathan Wells holds a Ph.D. in biology from the University of California, Berkeley, and has published articles in several peer-reviewed science journals. He is currently a Senior Fellow at the Discovery Institute in Seattle and the author of Icons of Evolution (2000).

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Michael Ruse: Stop Whining and Do Science!

Jonathan Wells is a whiner, and like most whiners, his gripes are largely of his own making.

Look at the way in which his language loads his discussion: "The pro-Darwin bias in biology journals effectively excludes an alternative scientific theory such as intelligent design." Why is it "bias" to oppose something because one thinks it wrong, inadequate or out of place? "The pro-Einstein bias in physics journals effectively excludes an alternative scientific theory such as Ptolemaic astronomy?" "The pro-germ-theory bias in medical schools effectively excludes an alternative scientific theory such as witchdoctory?" Or how does Wells feel about: "The pro-heterosexual bias of the Bible effectively excludes alternative sexual practices such as homosexuality?" I bet he would be the first to deny that, in this last case, the word "bias" is appropriate — although his denial would probably be fighting it out in the rush with those of his other intelligent design buddies.

In any case, it is simply false to claim that there is a pro-Darwin bias. Wells is playing the same card tricks as performed by such past masters as Duane T. Gish and Henry Morris, conflating the belief in evolution with a putative mechanism for evolution, in this case Darwinism. Biology journals are 100 percent for evolution, but Darwinism is another matter. Look at the space that *Paleobiology* has given to Steve J. Gould over the years, and dare to say that it has a pro-Darwin bias.

Look at the space that is now being given evolution journals to constraints and "evo-devo" (evolution and development), and dare to say that they have a pro-Darwin bias. Frankly, as a committed Darwinian, I wish there were a little more bias.

Why should science journals give space to intelligent design (ID) or any other crackpot pseudo-theory, manufactured to cover the nakedness of biblical literalism in scientific dress to get around the U.S. Constitution's separation of church and state? Does *Physics Review* have an obligation to give space to Velikovsky or to the speculations of *Genesis Flood*? It is a false dichotomy — an illicit appeal to the American sense of fair play — to say that it is wrong to criticize without giving space to the alternative position. When one is faced with a dangerous political movement — and the stuff going on in Ohio and elsewhere shows that ID is political and dangerous — one has

every right to comment on it and no obligation to give it equal time. I regard Quebec Separatism as a dangerous political movement — explicitly designed to break up my country, Canada — and I am certainly going to talk about it and discuss it, without feeling the need or obligation to give separatists equal time in my publications, or those I support.

Of course, Wells and company would say that the analogy is unfair, because ID is a legitimate scientific hypothesis and as such has a claim on the space of science journals. But, with respect, scientists have looked at ID in some detail and found it sadly wanting. Take Michael Behe's notorious discussion, in *Darwin's Black Box*, of blood clotting.

The man whose work is at the center of the discussion, Russ Doolittle, denies explicitly that Behe's consequences follow. Worse, he points out that Behe does not use the more technical discussions, omits vital points about the ways in which pieces are recycled, fails to understand the workings of evolution and is simply not up to date. And the rest of the scientific community agrees. If, as the ID folk claim, Doolittle completely and utterly misunderstands the implications of his own work, why rely on the work in the first place? There comes a time when you cry "Enough!" Free speech allows Behe and fellows to push ID all they like, but not necessarily on our patch.

Finally, in any case, the "Establishment" (if I might so call it) has been remarkably tolerant and open to the discussion of ID and offering the opportunity to respond. ID is not science — it is at best philosophy (although it pains me to say so) and most truly religion (of a crude, 19th century, American variety). Philosophy journals have let the ID gang have a good run for their money. Behe has had his say in the flagship philosophy-of-science journal, *Philosophy of Science*. In the journal I used to edit, *Biology and Philosophy*, we have had Phillip Johnson, Paul Nelson and most recently, Behe himself. Cambridge University Press has published Bill Dembski and is going to publish a volume (for and against) intelligent design, edited by Dembski and myself. (Debating Design: From Darwin to DNA). Of the eight referees that we had, seven and a half were in favor of publishing this collection, although my suspicion is that not one of the eight was an ID enthusiast at all.

Stop whining and do some real science. Then we will start to take you seriously as scientists.

Michael Ruse teaches philosophy of biology (especially Darwinism) ethics, and the history and Philosophy of Science at Florida State University.

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Michael J. Behe: Michael Ruse is Just Confused!

If nothing else, Michael Ruse haschutzpah. Let me tell a little story about blood clotting, Russell Doolittle and Michael Ruse. In 1996 in *Darwin's Black Box*, I argued ("notoriously") that the blood-clotting cascade is irreducibly complex (that is, if a part is removed the cascade doesn't work) and so, is a problem for Darwinian evolution and is better explained by intelligent design.

However, Russell Doolittle — professor of biochemistry at the University of California, San Diego, member of the National Academy of Sciences, and lifelong student of the blood-clotting system — disagreed. Writing in 1997 in *Boston Review*, a publication of MIT, Doolittle pointed to a then-recent report which, he claimed, showed that several parts of the clotting system — plasminogen and fibrinogen — could be "knocked out" of mice without ill effect. (Fibrinogen is the fabric of the clot. Plasminogen removes clots once healing is complete.) He wrote:

"Recently the gene for plaminogen [sic] was knocked out of mice, and, predictably, those mice had thrombotic complications because fibrin clots could not be cleared away. Not long after that, the same workers knocked out the gene for fibrinogen in another line of mice. Again, predictably, these mice were ailing, although, in this case, hemorrhage was the problem. And what do you

think happened when these two lines of mice were crossed? For all practical purposes, the mice lacking both genes were normal! Contrary to claims about irreducible complexity, the entire ensemble of proteins is not needed. Music and harmony can arise from a smaller orchestra.”

So, said Doolittle, if one component is removed, the mice are in bad shape, but if two components are removed, the mice are normal. While that would be an interesting result, it is incorrect. Doolittle misread the report.

The authors of the paper wrote in their abstract, “Mice deficient in plasminogen and fibrinogen are phenotypically indistinguishable from fibrinogen-deficient mice.” In other words, mice lacking both components have all the problems that mice lacking just fibrinogen have. Those problems include failure to clot, hemorrhage and death of females during pregnancy. The mice are very far from “normal.” They are decidedly not promising evolutionary intermediates.

Now, what can we conclude from Doolittle’s mistake? At the very least, it shows that he does not know how clotting evolved in a Darwinian fashion. If he did, he would have simply told the readers or pointed to papers where the information could be found. Instead, he cited a paper on hemorrhaging mice. And since Professor Doolittle is the world’s expert on the evolution of blood clotting, the incident shows that nobody else knows, either.

That includes Ruse. A year later, apparently unaware of Doolittle’s mistake, Ruse instructed the readers of *Free Inquiry* on why intelligent design proponents are scorned:

“For example, Behe is a real scientist, but this case for the impossibility of a small-step natural origin of biological complexity has been trampled upon contemptuously by the scientists working in the field. They think his grasp of the pertinent science is weak and his knowledge of the literature curiously (although conveniently) outdated.

“For example, far from the evolution of clotting being a mystery, the past three decades of work by Russell Doolittle and others has thrown significant light on the ways in which clotting came into being. More than this, it can be shown that the clotting mechanism does not have to be a one-step phenomenon with everything already in place and functioning. One step in the cascade involves fibrinogen, required for clotting, and another, plaminogen [sic], required for clearing clots away.”

And Ruse went on to quote the passage from Doolittle I quoted above. Ruse was so impressed with Doolittle’s work that he even copied his typo-misspelling, “plaminogen.” Let me state clearly what this means.

Ruse is a prominent academic Darwinian philosopher. Yet, he apparently did not even bother to look up and understand the original paper on the hemorrhaging mice before deciding Doolittle was right and I was contemptibly wrong! To this day he takes sides in a scientific dispute he shows no signs of understanding.

But perchance Ruse is so confident because “the rest of the scientific community agrees” with Doolittle (how does Ruse know that?) that I am “simply not up-to-date.” Ho, ho. Well, maybe many scientists do agree with Doolittle. But those who do are as wrong as he was.

In my travels, I have had quite a few scientists sneeringly throw his erroneous *Boston Review* argument at me. Recently, Neil S. Greenspan, a professor of pathology at Case Western Reserve University, wrote in *The Scientist*, “The Design advocates also ignore the accumulating examples of the reducibility of biological systems. As Russell Doolittle has noted, in commenting on the writings of one ID advocate.” Greenspan goes on to approvingly cite Doolittle’s mistaken argument in *Boston Review*.

Then with innocent irony, Greenspan continues, “These results cast doubt on the claim by

proponents of ID that they know which systems exhibit irreducible complexity and which do not.” But since the results of the hemorrhaging-mice study were precisely the opposite of what Doolittle, Ruse, Greenspan and other copycats thought, the shoe is on the other foot. The Doolittle incident shows that Darwinists in fact do not know how natural selection could assemble complex biochemical systems. Worse, it shows that they either cannot or will not recognize problems for their theory.

I’ll bet a philosopher like Ruse could think of some other reasons why a lot of the scientific community is up in arms over intelligent design besides spurious claims that we “fail to understand the workings of evolution.”

Michael J. Behe, the author of Darwin’s Black Box, is a professor in the department of biological sciences at Lehigh University.

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William Dembski: ID Will Win in the End

When the Athenian court convicted Socrates for subverting the youth of Athens, he was given the option of proposing an appropriate punishment for his misdeeds.

Since Socrates was convinced, not merely of his innocence, but also of his good worth, he proposed that Athens “punish” him by honoring him as a city benefactor.

This proposed punishment did not set well with the Athenian court. Had Socrates proposed exile, he probably would have lived. As it was, his proposal earned him a hemlock milkshake.

Just as Socrates was a benefactor for Athens, so intelligent design is a benefactor for science. Just as the Athenian court thought otherwise, so does the scientific community.

If I have one gripe with the scientific community’s reception of intelligent design, it has nothing to do with its less-than-cheerful acceptance of the idea. Rather, what I find objectionable is its willful refusal to admit that intelligent design is accurately focusing attention on some deep conceptual problems in biology (however they end up being resolved). Even Michael Ruse, whom I regard as a friend, exhibits this narrowness when, in responding to Jonathan Wells, he writes “Scientists have looked at ID in some detail and found it sadly wanting.”

Have they really? Some scientists have reflexively reacted against intelligent design because they see it as a political movement (unfortunately with some justification) or as a variant of biblical creationism (fortunately without justification). The fact is that intelligent design is asking biology some tough questions and forcing evolutionary biology to own up, not to some minor crevices that need papering over, but to vast conceptual lacunae that require fundamental rethinking of the discipline. But do not take my word for it.

A prominent biologist and member of the National Academy of Sciences with whom I maintain an irregular correspondence wrote me last year. He sees three main alternatives for biology: 1) intelligent design; 2) Darwinism; and 3) some natural biological process, as yet undiscovered, that yields organisms without relying solely on natural selection. Commenting on these alternatives, he writes: “Of these, I sort of favor the last. If it is true, then Darwin, et al. have found a mechanism that works in simple cases (which it certainly does!) but misses more important mechanisms of evolutionary change and adaptation. The search for the missing mechanisms can only be helped by people like you asking tough questions. Keep at it!”

This biologist (I’m not at liberty to say who he is) exemplifies the best of the classical liberal tradition of John Stuart Mill. For Mill, the health, vigor and prosperity of an idea depended on the idea having critics who disagreed with it, not merely as a matter of show, but who were firmly

committed to an opposite point of view. Only in this way can the acceptance of an idea avoid becoming a blindly held dogma. Only in this way can the ramifications, as well as limits of an idea be properly appreciated.

Making room for intelligent design in science has nothing to do with what Michael Ruse calls “an illicit appeal to the American sense of fair play.” The academy in general, and the scientific community in particular, are quite rightly meritocracies. For intelligent design to have a place at the table, it must earn a place at the table. Yes, there is prejudice and resistance. But slowly we are earning a place at the table. In my own case, I have no problem publishing my work on intelligent design in academic journals and books. Quite the contrary, without my knowledge or permission, MIT Press recently reprinted two of my essays in an anthology devoted to intelligent design edited by Robert Pennock.

Granted, my work is mainly at the intersection of philosophy of science and statistics and therefore not in biology proper. However, my biologist colleagues are now publishing intelligent design relevant articles in the peer-reviewed molecular biology and bioinformatics literature (like the *Journal of Molecular Biology*).

According to J.B.S. Haldane, the acceptance of radical ideas that challenge the status quo proceeds in four stages. First, the idea is regarded as preposterous — it is so absurd as not to merit consideration. Second, it is regarded as pernicious — the idea is firmly on people’s radar but now is regarded in moral and even apocalyptic terms (intelligent design spells the end of science). Third, it is regarded as possible — it is now evident that the idea is not entirely absurd and may even have far-reaching consequences. Fourth and finally, it is regarded as plausible — a new status quo has emerged and the mainstream cannot imagine how people in times past could have thought otherwise. With intelligent design, we are now at the transition from stage two to stage three. This is the hardest transition.

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Robert Pennock: ID’s War: What is it Good For?

In 1975, a Japanese soldier emerged from the Philippine jungle. For decades, he had continued to fight WW II, refusing to accept that the war was over.

The intelligent design (ID) “wedge” movement is of a similar kind. Most religious scholars argue that the warfare between Christianity and science is a thing of the past, but the wedge is keeping it in play. Wedge participants portray their battle against evolution as part of a culture war between a theistic worldview and a science-based modernism. Their rhetoric is thick with the metaphors of combat.

Rebuttals of their arguments made in a respectful manner are ignored, evaded, or met with personal attacks.

The current controversy involves Wells’ complaint of a “catch 22” against ID on the part of scientific journals. Other wedge activists make similar charges of “bias” or “censorship” by scientific “gatekeepers.” It is true that one searches in vain for peer-reviewed scientific articles supporting ID. For *Intelligent Design Creationism and Its Critics* I wanted to include their best published articles but, except for a few pieces by Philip Johnson, Alvin Plantinga and Paul Nelson in philosophy journals, I was forced to get reprint permissions from non-peer-reviewed popular journals. So, what is the reason for this deficit? Does a naturalist conspiracy censor ID submissions?

Dembski discusses the significance of peer-reviewed articles in a 1998 review of Jeffrey Satinover's book promoting the "Bible Code" (purportedly hidden information in the Hebrew Bible found by statistical analysis of letter sequences) in *First Things*.

Dembski explains, "Satinover's fascination with the Bible Code is that it may provide evidence for God's existence." Dembski also says that this research program is not unique and that ID is closely related. Both look for complex specified patterns. Both may help reverse the "long dismal trend of science eroding faith in God."

Dembski highlights how "after an arduous review" the journal *Statistical Science* published a study about improbable matches involving names of famous rabbis. He writes, "Suddenly the Bible Code had a measure of academic respectability." The ID movement wants into journals to get scientific respectability.

Of course, as Dembski admits, "one paper in a prestigious journal is hardly enough to settle so controversial a topic." The Bible Code is not ready for prime time, and ID does not begin to be a viable alternative to a science as well established as evolution. The pro-evolution "bias" in journals is founded upon a century and a half of evidence laid out in thousands upon thousands of articles. Science has no trouble with tough questions, but it will not abide easy answers like "a designer did it." Where is the evidence?

Why don't Behe or Dembski publish their "research" in a journal like *Statistical Science*? In an interview in the *Chronicle of Higher Education*, Dembski said that he had "just gotten kind of blasé" about submitting his work to professional journals. He explained that he prefers the quick feedback (and the money) he gets from posting on Internet sites and publishing books. Given such an attitude, there ought to be no complaining about the dearth of peer-reviewed articles.

What about Behe? A "Catch-22"? Might not the simpler explanation be the one the journal gave — that his article did not provide scientific grounds for its conclusion? Scientists typically describe their important research on their academic web pages, but Behe's description of his research does not even mention intelligent design, nor does he include a single article on ID in his list of representative publications. Wedge members publish their own journals where they can print whatever they want. *Metanexus* gives ID an open platform that presumably, the Darwinist conspiracy does not control. However, one can wade through this (highly redundant) mass of material and never find any positive evidence that biological complexity was intentionally designed.

In all its variations, the ID assault on evolution is no more than a "God of the gaps" argument. In his current reply to Ruse, Dembski repeats his claim about gaps in biology. ID points, Dembski says, "not to some minor crevices that need papering over but to vast conceptual lacunae." In a 1990 article in *Perspectives on Science & Christian Faith* he presented such purported gaps as a test of Christianity: "[T]here are," he writes, "gaps which theology says science shall never fill." Intelligent design, Dembski said in a 1999 *Touchstone* article, "is just the logos theology of John's Gospel restated in the idiom of information theory." In the Beginning was the Word. (Hmm, is there really, as he claims, no justification for seeing ID as a variation of biblical creationism?)

In my book, *Tower of Babel*, I discussed an ironic feature of Johnson's argument; although he is ostensibly attacking scientific naturalism, he fails to recognize the log of naturalism in his own eye. Other ID leaders exhibit the same blindness. "Theology," Dembski boldly claims in his *Perspectives* article, "is falsifiable by science." Well, sure, if your theology insists upon specific empirical claims based on something like a literalistic hermeneutic.

Dembski cites the apostle Paul, on the Resurrection, as one example, but for him claims involving what he calls "the historic position" of the Genesis account of the creation of man's mind and body are among other potential falsifiers. Dawkins' statement that "Darwin made it possible to be

an intellectually fulfilled atheist” is mild compared to this do-or-die theology. Given such a view, it is no wonder that ID theorists insist upon a fight to the finish.

So, what should one do in the face of ID’s continued war mongering? Turning the other cheek to personal attacks is good advice someone once gave. It applies to the wedge’s other attacks as well.

Scientists and philosophers are assessing ID and finding it wanting. Science should maintain its requirement for evidence and ignore ID baiting tactics so as not to help them feed and extend the conflict. Lt. Hiroo Onoda continued to fight WW II for 30 years after the end of the war before he turned in his sword. Let us hope that the ID movement does not take as long to lay down its wedge.

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Eugenie Scott: Still Waiting for ID Proponents to Say More Than ‘Evolution is Wrong’

Once again, intelligent design (ID) proponents have an opportunity to reach a new audience, to promote new ideas and present new evidence to support their position — but what do we get? Haeckel’s embryos, the blood-clotting cascade and conspiracy theories about how ID is unfairly getting the shaft from the establishment. I half expected to hear yet again about that damned mousetrap.

The only way ID will convince the scientific community that it is a worthwhile approach to understanding nature is if its proponents actually do some research informed by an ID perspective. Unfortunately, nothing resembling empirical support for ID appeared anywhere in these three essays (or anywhere else, for that matter). Instead, we got — well, Ruse is right — whining about the alleged weaknesses of evolutionary theory.

Sorry, but that will not cut it. ID cannot be just “Evolution is wrong!” ID has to present a positive theoretical perspective that answers what the standard model answers, explains observations not yet explained, and solves puzzles not yet solved. In vain, critics have asked and pleaded, really, for some insight into what research informed by the ID perspective would look like. The lack of a response is not, I believe, because ID proponents are lazy, uninterested or unscholarly. I think it is because they cannot agree on a coherent model.

What is the ID model? Did evolution (common descent) happen? No, say the young-Earth creationists and progressive evolutionists within the ID crowd; yes, say the few theistic evolutionists. How old is the universe? Ancient say some; young say a few; let’s ignore the question, say most.

Is it “Darwinism is wrong”? Well, what is “Darwinism”? Evolution by natural selection? Does it include sexual selection? Does it include neo-Darwinism? Sometimes “Darwinism” is equated, absurdly, to philosophical naturalism. “Darwinism” — vaguely, natural selection — is acceptable in ID when it is limited to producing adaptedness (as the fit of bird beaks to seed size); for some (but not all) ID proponents, natural selection can even produce complex anatomical structures such as the vertebrate eye. But ID proponents contend that natural selection, acting upon random variations, cannot explain basic body plans or “irreducibly complex” (IC) molecular structures. So, what does explain IC structures? Ah, here is where we get to the nitty-gritty.

Each IC phenomenon had to have been produced by an intelligent designer (God; no one for a moment thinks that the ID proponents have in mind material agents such as extraterrestrials) — because “Darwinism” supposedly cannot explain such phenomena. So God intervenes at the big

bang, at the appearance of DNA, at the first replicating, membrane-bound structure, at the first bacterial flagellum (and presumably again at the later appearance of the different, eukaryotic flagellum), at the appearance of the vertebrate blood clotting cascade and at any other time other IC structures appeared.

Setting aside the serious theological ramifications of this position, the scientific consequences are astonishing. Perhaps recognizing that God's serial intervention makes ID a form of progressive creationism, Behe and Dembski have responded similarly to the question "What did God do, and when did God do it?"

Behe suggests in *Darwin's Black Box* that there was an uber-cell that contained all the genetic information for all the subsequent evolution of all the IC structures for all living things that existed from 3.8 billion years ago to the present. As the uber-cell radiated into the myriad of living and extinct lineages that have existed through time, these genes somehow managed not to drift, mutate or get lost. As if Behe's vision of the genes for mammalian blood clotting patiently waiting intact in the uber-cell for 3.4 billion years was not sufficiently stupefying on its own, Dembski suggests that maybe God front-loaded everything — all the irreducibly complex structures and everything else — into the big bang, and homunculus-like, the universe has unfolded over *15 billion years*; or maybe God front-loaded part of it later. Maybe not.

Obviously, as Dembski concedes, there is still much work to be done in ID theory (which begs the question of why it is being proposed for inclusion in high school curricula in Ohio and elsewhere). The fuzziness of ID reflects the fragmented nature of the movement, split between a scholarly attempt to distinguish design produced by intelligence from design produced by natural causes and a political and religious "cultural renewal" movement, promoting theism over materialism.

The ID goal, as proclaimed at the Center for the Renewal of Science and Culture, is to oppose philosophical naturalism and replace it with a theistic understanding that nature and human beings are created by God. At the heart of ID's "cultural renewal" component is promotion of a sectarian God who is active, personal and intervenes in the natural world. Proponents of ID try to demonstrate the weaknesses of "Darwinism" and evolution (common ancestry), thereby supporting the theological view that God repeatedly and directly intervenes in the natural world.

Ultimately, saying what did not cause something does not demonstrate what did. ID needs to step up to the plate and show us some hits, rather than just complaining about the other team's batting. To reiterate: how would a scientific investigation informed by ID be an improvement over one informed by an evolutionary approach?

This is why the three articles written by ID proponents for this *Research News Reader's Forum* are so frustrating, and why the scholarly community is rapidly losing patience with ID, and why ID proponents may in the future find fewer scientists willing to appear on panels and at ID conferences (ID-ers do not seem to attend conferences of professional scientific societies). If this occurs, it will not be because of some dark conspiracy, but because the academic audience has grown tired of hearing the same arguments made over and over (for how long will Doolittle's misstatement be reiterated?) and because ID's long-standing promises of actual "calculations" and "research" applying the ID perspective — whatever it is — remain vaporware.

Science explains by natural cause, but ID proponents lash out at "Darwinism" and evolution — though not at cell division, equally restricted to natural cause — confusing methodological and philosophical naturalism. They are fond of quoting philosophical materialists who gleefully encourage using science and/or evolution to attack faith, ignoring other philosophical materialists (such as Michael Ruse and I) who strongly discourage the use of the public school or college classroom as a forum for promoting one's personal philosophy. We argue for classroom neutrality: science is an equal-opportunity epistemology that proscribes neither fundamentalism, theistic evolution, philosophical naturalism nor any other religious/philosophical view.

Can't the ID proponents join us in this effort to present science neutrally? Surely, theism can be promoted without the constant drumbeat of "Evolution is wrong."

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