

"It's a very dangerous thing to believe in nonsense."

-- James Randi

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A Central Illinois Scientist Responds to the Black Box

by Karen Bartelt

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Prior to his appearance, Behe was the subject of a large article by the Michael Miller, religion editor of the Peoria Journal Star. Piqued by what Behe might have to say to a receptive-but-nonscientific audience, I attended two of the three lectures. What follows are my responses - as a scientist - to Behe's lectures at the seminary and his October 3 interview in the Peoria Journal Star.[More](#)

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In his PJS interview, Behe described three lines of criticism from scientists. First, he said that scientists consider his findings to be of a religious nature rather than science. Since the standard definition of science tends to be something like "the systematic study of the natural world", it is hardly unfair for scientists to respond in this manner! If Behe and others want to explore the possibility of a "designer" that subsumes our current body of scientific knowledge, they are welcome to do so. Just don't call it science, and let's see how fruitful it is in ten years.

Behe went beyond this at Lincoln, however, saying (supposedly to mimic scientists), "That Behe fellow is a known Christian... Therefore design is a religious idea." This is a ridiculous assertion. Some of Behe's most vehement critics are also "known Christians," and never has the idea of design been rejected because it comes from a particular religious group; it is rejected by the bulk of the scientific community because there is absolutely no evidential support.

Aha, you say, but what about all of those wonderful examples of irreducible complexity (IC) in Darwin's Black Box? Behe used many of them at Lincoln. They have all been soundly refuted in scientific journals and on the web. Behe proposed that a mousetrap is irreducibly complex (all parts must be there for it to function) and therefore a good metaphor for IC in biological systems. On PBS' Firing Line in 1997, evolutionary biologist and "known Christian" Kenneth Miller demonstrated how that analogy fails - with Behe sitting across the table! There is a more basic flaw in Behe's assertion, however - that a molecular machine must perform a specific task, or it is useless to the organism. Just as a mousetrap without a critical part might function as a great paperclip or a very interesting earring, a proto-flagellum

or enzyme might be capable of some function (Indeed, this is what is seen). That's basic evolutionary biology.

This brings me to Behe's second allegation: scientists say that he "isn't the proper type of scientist to be discussing evolution." From my reading of many reviews, the criticisms tend to center around the fact that Behe is either selectively ignorant of the evolutionary literature that exists, or that he just doesn't know how to do a computer search! For example, at Lincoln he said that if one looks in the scientific literature for evidence of Darwinian evolution, this literature "is absent." In Darwin's Black Box (p.179) he is even more emphatic: "There has never been a meeting, or a book, or a paper on the details of the evolution of complex biochemical systems." How, then could John Catalano have done a keyword search of the word "evolution" and come up with 13,000 hits  
<<http://www.talkorigins.org/faqs/behe/publish.html>> - articles describing the evolution of the immune system, cilium, flagellum, blood-clotting system, eyes - subjects that Behe says do not exist! Perhaps Behe could be forgiven for being sloppy in 1996 when his book came out, but to make this statement in 1999 indicates either continuing ignorance or arrogance. Scientists have penetrated the "black box" to a much greater extent than Behe would have his general audiences believe!

Behe's purported third area of criticism from the scientific community is that he hasn't published enough in scientific journals on this topic. Behe agreed, saying later that he wants to see "real laboratory research on the question of intelligent design." Well, so would the rest of us scientists, and then perhaps intelligent design (ID) would be taken seriously! A recent keyword search of the words "intelligent design" turned up exactly one article, and it was about robots! This small well-funded (by the Discovery Institute) cadre of ID proponents is great at attending/hosting conferences, traveling and giving speeches (usually to general, not scientific, audiences), and writing apologetic books. Their own journal, *Origins & Design*, which I read regularly, should be brimming with research articles on "intelligent design." Instead, there are theological arguments and critiques, articles that address the design issue in general but do not detail any original research that supports intelligent design, book reviews, reports from conferences, and advertising for ID books, videos, tapes, and study kits.

Perhaps part of Behe's publishing dilemma is that neither he nor anyone else in the ID movement can come up with a definition of design that differentiates designs done by their proposed "designer" from products of natural selection (elsewhere, fellow ID proponent William Dembski admits this, saying, "In principle, an evolutionary process can exhibit such 'marks of intelligence' as much as any act of special creation" [Dembski, 1998]). At Lincoln, Behe relied upon a particularly egregious "folk-science" type definition of design: Using a Far Side cartoon showing a person swept into the air and impaled by a jungle trap, Behe said, "You look and realize that the trap was designed. Just look at how the parts interact." You just know design when you see it! In fact, humans are not always able to discern real design from apparent design, and tend to impose design when it is not there; hence the "face on Mars", and the sightings of the Virgin Mary on the side of a building or the face of Jesus in a tortilla.

Furthermore, if we assume that Behe is correct, and that humans can discern design, then I submit that they can also discern poor design (we sue companies for this all the time!). In Darwin's Black Box, Behe refers to design as the "purposeful arrangement of parts." What about when the "parts" aren't purposeful, by any standard engineering criteria? When confronted with the "All-Thumbs Designer" - whoever designed the spine, the birth canal, the prostate gland, the back of the throat, etc., Behe and the ID people retreat into theology. At Lincoln, Behe rebuffed one of his critics, Russell Doolittle, who pointed out (referring to biochemical systems) that "...no Creator would have designed such a circuitous and contrived system" (Doolittle 1998). Behe accused Doolittle of defending evolution on theological grounds, (also saying that God could do whatever God wanted) but in fact, Doolittle was asking nothing but that an "intelligent designer" design intelligently! This is a big problem for ID proponents, as they admit elsewhere: "Charles Darwin ... saw the existence of what he regarded as poor biological engineering (suboptimality) ... as prima facie evidence that God could have not directly created the world. This viewpoint continues to undergird much evolutionary reasoning in our own day, and poses a difficult challenge to theories of intelligent design." (O & D, Winter 1999)

Behe has set himself (and the other intelligent design proponents) up as Davids-with-slingshots against the intractable Goliath of science. In the PJS article, Behe stated that "the scientific community resists such unorthodox ideas as intelligent design," and "I guess every profession has its codes, unwritten or written, and anybody who speaks out, especially in the field of biology, and especially in the field of intelligent design, risks some consequences to their [sic] career." In answer to a question at one of the lectures, Behe stated that though there really is "no place to go," scientists

hold to Darwinian theory because they are confirmed atheists and materialists. Scientists are conservative and don't support new ideas, he continued, noting that the chemiosmotic hypothesis was not supported initially, and the person who came up with the idea committed suicide. (The chemiosmotic theory is now a biochemical paradigm; to go into it in detail would require an extensive knowledge base in chemistry and biochemistry). How arrogant of Behe to misrepresent this information so completely! Peter Mitchell proposed the chemiosmotic theory in the 1960s. It did meet with resistance at first, but was well-accepted by the 1970s. Behe (conveniently?) left out a few little teensy facts: Mitchell was awarded the 1978 Nobel Prize for this theory - a nice monetary vindication! And Mitchell died in 1992. I don't know whether he committed suicide, but his demise occurred 14 years after basking in the glow of a Nobel Prize. This subtle demonization of the orthodox scientific community is important to the ID proponents. Since they have no data to support their hypotheses, they must rely solely upon casting doubts on well-established theories like evolution, and one way to do so is to make science look like a closed union shop unable to respond to new ideas.

So what to make of Behe and ID in general? Rather than the "shockwave in the scientific community," as one of the introductory speakers at Lincoln described Darwin's Black Box, it is really kind of a yawn. Behe and others are attempting to bring back the "argument from design," which goes back at least to the mid 1800s and William Paley. This argument was repudiated in that century, and Behe offers nothing new. Behe is welcome to attempt to resuscitate this dead horse, but he had better do so by taking an honest and complete look at the literature before he eliminates natural selection as an agent of apparent design. He should stop using his Christianity as a crutch to prop up his dubious science, get back into the laboratory, and start producing some results that support his premises. New ideas in science are treated with skepticism - not only Peter Mitchell, but biologists Barbara McClintock, Mitoo Kimura, and Sewell Wright went through periods where their ideas were thoroughly scrutinized and criticized. Why have they prevailed and their ideas become cornerstones of biology? Because they were able to support their ideas with evidence.

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