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## Darwin's Black Box: The Biochemical Challenge to Chemical Evolution (Book Review)

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*Darwin's Black Box: The Biochemical Challenge to Chemical Evolution* by Mike Behe, 1996 Free Press (A division of Simon and Schuster) 307 p.. Reviewed by James Mahaffy, professor of biology.

Through the ages, Christians seeing the marvelous complexity of the creation have marveled at the Creator. The intricate biology of the eye, the wonderful machinery of a cell, the heavens themselves, all seem to call out for a declaration, with the Psalmist of old, of how wonderful is his handiwork. Yet the irony of the strength of the neoDarwinian explanation and the secularism of today's science is that we Christians hesitate to use such an argument. In our culture, blind Nature has supplanted a Creator, and this world, no longer run by a providential God, chugs down self-directed tracks laid down by the rules of science. Not only has our culture (and perhaps too many of us) committed to a world that runs itself, but we have also bought into the apologetic of scientists like Dawkins. Such scientists tell us that the complexity in living things only seems to call out to their designer, and that all can be explained by the power of an evolutionary selection blindly and gradually selecting for the genes that optimize traits in all creatures.

In this book he restores the respectability of a design argument, using his incisive logic to argue that there are cellular structures and pathways so "irreducibly complex" that they simply can not be explained as having been produced by gradual steps but instead point to a designer. He reminds the reader that the cellular complexity he is talking about was not known or understood (a blind box) at the time of Darwin. Being a blind box, it was not something Darwin could or did refer to in his theory. But now having opened the box with advances in chemistry and the power of the electron microscope, the cellular box shows a level of complexity insurmountable to the standard explanation offered by blind neoDarwinian selection. The simplest cell is so complex that the odds of having all the necessary components at the right time and place are just too astronomical to be plausible. Behe asks the reader to consider cellular structures like the cilia, that have a number of complex parts all of which must work together in a certain fashion. Since removal of any one of a number of parts destroys the function of the structure, it seems impossible to postulate functional

intermediate structures (the structure that developed into the cilia) for structures like the cilia. Yet neoDarwinian theory requires precursors themselves to be useful while these structures developed. Behe uses similar arguments effectively in talking about the difficulty of explaining how clotting and the immune system would have developed.

Another thing that impressed me about this book is the clarity of the argument. Although he makes much of apologizing about the complexity of chemistry, Behe shows the teacher in himself and talks in clear and simple enough language that the average layman can readily follow his argument. He also makes effective use of the power of simple and appropriate analogy to illustrate his points. One of his examples is that of the impossibility of a squirrel surviving when trying to cross a highway that has a thousand busy lanes going in both directions. While the animal can conceivably make it across one lane alive, the reader readily sees that getting across all of the lanes is really impossible. This analogy gets at the argument that just suggesting a precursor or explaining one part of the puzzle (cross any one lane of the highway) can not explain the origin of the whole process, since many of the biochemical pathways or cellular structures are not useful until all the pieces are in place and working together. Analogies like this stick with you and help in understanding his argument.

Argumentation in this book is tightly focused on the biochemical challenges to the neoDarwinian theory. On this topic Behe knows what he is talking about. A biochemist from LeHigh University, Behe is someone active in research who knows both his chemistry and the primary literature. With his command of the literature, he shows he knows the evolutionary explanation and deals with it responsibly. (For instance, when talking about the hypothetical evolution of hemoglobin, he uses long quotes from an article in the literature suggesting how it formed.) The reader also learns that the professional literature is often different than what is found in the introductory texts. For instance, you learn something rarely mentioned in

college texts, that many of the research scientists in the area of spontaneous origin of life have some real doubts about a plausible scenario by which it could have evolved.

I find that tight focus on biochemistry to be both a strength and a weakness. On the one hand, Christians often fail to argue effectively by talking about a lot of things they really don't know that much about. That gives an opportunity for critics to pick up their weak points, while discounting their other strong arguments. Behe sticks to the area he knows best, biochemistry. Still the neoDarwinian theory is a broad unifying theory and by attacking only one aspect of it, the attack is less powerful than if the argument had included fossils (my own professional area) or genetics. I think that genetic arguments should have been addressed more thoroughly since they tie directly into some of the biochemical arguments.

Mike Behe, along with Phil Johnson, J. P. Moreland, and others, is part of a group of bright scientists who are sometimes called the intelligent design group. While not committed to the common flood model, they see the secularism of current science and are strong in their contention that a Creator's design would and does show in his creation. I suspect that books like Behe's may push lay people away from a flood model theory that, as often articulated, is weak enough in its scientific argument that it is often (and with some legitimacy) dismissed as pseudoscience. With their good scientific critique, this group provides a new and fresh approach. While this book may have its greatest effect on the Christian community, the gauntlet that Behe throws out is really to the community least apt to take the challenge, the scientific community. They, and not the layman, are the ones who can judge the power of his argument. Even if they do pick up the gauntlet, they will probably respond as a reviewer did in the *Wall Street Journal*--dismissing the book as lacking merit because it comes from a creationist, without really addressing the heart of his argument from design.

A weakness of the book, even though it will give it more force in the scientific community, is that Behe assumes that design is purely a scientific question that should be demonstrated only on scientific grounds. In one sense he is right since,

if design shows in the creation, it should be demonstrated empirically with scientific methodology. Yet I would like to see more of a realization that the scientific methodology occurs within a science that is not unaffected by world and life views. He is aware that proving a designer would shake the scientific community, but I don't think he realizes how powerful the effect would be in a science that assumes that no one affects the course of the world. Sadly because the very idea of a designer is so far from the paradigms of the scientist, I suspect the scientific world will avoid dealing with his argument. He also limits himself to using design argument only where it is clear that other explanations will not work and does not deal with other aspects of the neo-Darwinian theory. Because of this restricted critique, the book which powerfully shakes some of the dogma of the neo-Darwinian theory does not provide much of an alternative. Yet his powerful argument for design is a small step in the direction of changing the paradigm of the neoDarwinian as an all encompassing explanation. By showing some of the weaknesses of the current theory, it starts to answer Alvin Plantinga's call to evangelical scientists to develop an alternative Christian theory to the neoDarwinian synthesis (*Christian Scholar's Review* XXI:1 (September, 1991)). Mike Behe's case is clear and strong and should be read by every thoughtful Christian.