

Endless Forms Most Beautiful meets The Edge of Evolution

In 1996 Michael Behe's *Darwin's Black Box* was published, setting off a debate that rages even today. Behe, a biochemist, argued for Intelligent Design (ID) based on a concept he introduced: irreducible complexity. Because this is a key cog in Behe's argument I'll provide his definition. "By irreducibly complex I mean a single system composed of several well-matched, interacting parts that contribute to the basic function, wherein the removal of any one of the parts causes the system to effectively cease functioning. An irreducibly complex system cannot be produced directly (that is, by continuously improving the initial function, which continues to work by the same mechanism) by slight, successive modifications of a precursor system, because any precursor to an irreducibly complex system that is missing a part is by definition nonfunctional.)"

To explain this concept he used the simple mousetrap as an example. A typical mousetrap is made of 4 or 5 parts that have to be assembled in a particular arrangement in the proper sequence for it to work. If the pieces aren't assembled correctly or if a piece is missing the trap doesn't work.

Behe shows that in the biochemical world there are many examples of irreducibly complex structures and processes. The blood clotting mechanism and vision are examples of irreducibly complex processes which Behe devotes some time to explaining. However, he spends a good portion of the book on the cilium, the whip like tail that bacteria use for propulsion. Behe shows that the cilium is made like a motor complete with gears, bearings, mounts, etc. He claims that chemicals bumping into one another could not assemble this "machine". It had to be designed, according to Behe.

Darwin's Black Box created a cottage industry of books for and against intelligent design. Just recently I read one from each side of the debate: Sean Carroll's *Endless Forms* and Behe's sequel *The Edge of Evolution*. Carroll's book relies on recent developments in genetics to explain the diversity of living organisms while Behe extends, expands, defends and refines his earlier work. In *The Edge of Evolution* Behe revisits the flagellum to report that recent findings reveal even more complexities than were known in 1996. Behe explains the finely tuned, automated repair mechanism that transports materials from the main organism out to the end of the flagellum. Behe also spends a lot of pages discussing how the malaria

Endless Forms provides interesting and enlightening insights from the latest developments and discoveries in genetics. (On a personal note, I happen to play tennis with his brother who first told me about Sean's work.) While Carroll's book nicely captures how variations can occur within a species he doesn't really address how the original forms, such as something "simple" like the cilium,

emerged out of its original chemicals. Carroll's book explains how we can change the color of the paint on a Boeing 777 but doesn't explain how the plane itself came to be. His book is on a different level than Behe's, a level that Behe readily admits in *Endless Forms* where Darwinism can work.

Like other ID critiques that I have read, Carroll's arguments do not address Behe's points head on. Towards the end of his book in a few paragraphs Carroll dismisses Behe's case as "empty" without elaborating. After making this unsupported declaration he moves on to quote various creationists who impugn the motives of Darwinists. Well, as the saying goes, two wrongs don't make a right. In addition, Carroll fails to distinguish that not all advocates of ID are creationists. The reverse might be true: all creationists are advocates of ID but arguing for ID doesn't automatically make someone a creationist. In my case, I've been an atheist for decades. However, I feel the Darwinians have not come up with good counter-arguments. In many cases the Darwinists would rather use *ad hominem* than objective thinking.

On the other hand I believe ID advocates erroneously jump from pointing out possible evidence of intelligence built into life to the conclusion that there is a God in form of the Christian model. There could be other reasons for the incredibly organized complexity of life, from a principle of non-conscious organization inherent in the universe to a Buddhist-like spirit from which everything emanates. In either case I believe we should pay attention to the evidence ID proponents offer even if we don't buy the entire package they're selling.