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Design for Living

By MICHAEL J. BEHE FEB. 7, 2005

BETHLEHEM, Pa. - IN the wake of the recent lawsuits over the teaching of Darwinian evolution, there has been a rush to debate the merits of the rival theory of intelligent design. As one of the scientists who have proposed design as an explanation for biological systems, I have found widespread confusion about what intelligent design is and what it is not.

First, what it isn't: the theory of intelligent design is not a religiously based idea, even though devout people opposed to the teaching of evolution cite it in their arguments. For example, a critic recently caricatured intelligent design as the belief that if evolution occurred at all it could never be explained by Darwinian natural selection and could only have been directed at every stage by an omniscient creator. That's misleading. Intelligent design proponents do question whether random mutation and natural selection completely explain the deep structure of life. But they do not doubt that evolution occurred. And intelligent design itself says nothing about the religious concept of a creator.

Rather, the contemporary argument for intelligent design is based on physical evidence and a straightforward application of logic. The argument for it consists of four linked claims. The first claim is uncontroversial: we can often recognize the effects of design in nature. For example, unintelligent physical forces like plate tectonics and erosion seem quite sufficient to account for the origin of the Rocky Mountains. Yet they are not enough to explain Mount Rushmore.

Of course, we know who is responsible for Mount Rushmore, but even someone who had never heard of the monument could recognize it as designed. Which leads to the second claim of the intelligent design argument: the physical marks of design are visible in aspects of biology. This is uncontroversial, too. The 18th-century clergyman William Paley likened living things to a watch, arguing that the workings of both point to intelligent design. Modern Darwinists disagree with Paley that the perceived design is real, but they do agree that life overwhelms us with the appearance of design.

For example, Francis Crick, co-discoverer of the structure of DNA, once wrote that biologists must constantly remind themselves that what they see was not designed but evolved. (Imagine a scientist repeating through clenched teeth: "It wasn't really designed. Not really.")

The resemblance of parts of life to engineered mechanisms like a watch is enormously stronger than what Reverend Paley imagined. In the past 50 years modern science has shown that the cell, the very foundation of life, is run by machines made of molecules. There are little molecular trucks in the cell to ferry supplies, little outboard motors to push a cell through liquid.

In 1998 an issue of the journal Cell was devoted to molecular machines, with articles like "The Cell as a Collection of Protein Machines" and "Mechanical Devices of the Spliceosome: Motors, Clocks, Springs and Things." Referring to his student days in the 1960's, Bruce Alberts, president of the National Academy of Sciences, wrote that "the chemistry that makes life possible is much more elaborate and sophisticated than anything we students had ever considered." In fact, Dr. Alberts remarked, the entire cell can be viewed as a factory with an elaborate network of interlocking assembly lines, each of which is composed of a set of large protein machines. He emphasized that the term machine was not some fuzzy analogy; it was meant literally.

The next claim in the argument for design is that we have no good explanation for the foundation of life that doesn't involve intelligence. Here is where thoughtful people part company. Darwinists assert that their theory can explain the

appearance of design in life as the result of random mutation and natural selection acting over immense stretches of time. Some scientists, however, think the Darwinists' confidence is unjustified. They note that although natural selection can explain some aspects of biology, there are no research studies indicating that Darwinian processes can make molecular machines of the complexity we find in the cell.

Scientists skeptical of Darwinian claims include many who have no truck with ideas of intelligent design, like those who advocate an idea called complexity theory, which envisions life self-organizing in roughly the same way that a hurricane does, and ones who think organisms in some sense can design themselves.

The fourth claim in the design argument is also controversial: in the absence of any convincing non-design explanation, we are justified in thinking that real intelligent design was involved in life. To evaluate this claim, it's important to keep in mind that it is the profound appearance of design in life that everyone is laboring to explain, not the appearance of natural selection or the appearance of self-organization.

The strong appearance of design allows a disarmingly simple argument: if it looks, walks and quacks like a duck, then, absent compelling evidence to the contrary, we have warrant to conclude it's a duck. Design should not be overlooked simply because it's so obvious.

Still, some critics claim that science by definition can't accept design, while others argue that science should keep looking for another explanation in case one is out there. But we can't settle questions about reality with definitions, nor does it seem useful to search relentlessly for a non-design explanation of Mount Rushmore. Besides, whatever special restrictions scientists adopt for themselves don't bind the public, which polls show, overwhelmingly, and sensibly, thinks that life was designed. And so do many scientists who see roles for both the messiness of evolution and the elegance of design.

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