"'Rational Design' and 'Directed Evolution'"

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As discussed often in this column, scientists have been developing techniques by which they can manufacture protein molecules (the building blocks of life) based on computer programming. Willem Stemmer, the inventor of DNA breeding, and Brett Holland, assistant professor of biology at California State University, reported: “At present two different but complementary strategies are being pursued for the optimization and redesign of proteins. They are generally known as rational design and directed evolution” (2003: 527 [italics original]).

The first of these two terms sounds remarkably like “Intelligent Design,” which evolutionists reject. However, rational design is clearly Intelligent Design undertaken by human beings. The two scientists wrote: “Rational design, also known as computer modeling, attempts to modify or create [protein] molecules for specific applications by predicting which amino acid sequence will produce a protein with the desired properties” (Ibid.).

Such a task clearly requires outside, intelligent forces. In fact, Stemmer and Holland note that there is no way such an endeavor could ever have been accomplished by pure chance: “Unfortunately, the task of accurately modeling protein function is Herculean—there are a staggering number of interdependent variables that influence protein function. Cells go through many steps between DNA and an active protein—including but not limited to RNA and peptide synthesis, post-translational modification, subcellular targeting and intermolecular binding—and each step is regulated by multiple mechanisms. Protein folding and stability alone are sensitive to dozens, if not hundreds, of internal and external factors, and the consideration of any additional properties, such as activity in the presence of organic solvents, complicates matters further” (Ibid. 527-8).

If “rational design,” directed by human beings for the express purpose of creating protein molecules, is a “Herculean” task, then why do evolutionists suppose that the exact same occurrence—the formation of the earliest protein molecules—happened by pure chance, without the slightest possibility of Intelligent Design?
The second term, directed evolution, involves “harness[ing] natural selection at the molecular level and direct[ing] the evolution of proteins that are customized to meet specifications set by medicine, agriculture and industry” (Ibid. 528). The most powerful form of directed evolution, DNA breeding, was invented by Stemmer, who describes it thus: “Select promising parents, breed them to create a diverse pool of genetic variants and select those offspring that have the best combination of desirable traits. Our task resembles that of early man who domesticated the dog 14,000 years ago” (Ibid.).

This form of "evolution," however, does not match what Darwin had envisioned, because 1) it requires an outside intelligence, not blind chance; 2) it does not create brand new species (macroevolution), only improvements within a species (microevolution); and 3) it does not take millions of years, but happens rapidly. Stemmer performed directed evolution on 4 distantly related microbes, testing their ability to produce the enzyme that fights off penicillin. Random (i.e., natural) mutations were allowed to occur, followed by directed evolution. The rate of anti-penicillin production under directed evolution exhibited a 270-fold increase over the production rate from random mutations (Ibid. 530). However, no new species was created.

Experiments on the bacterium *Streptomyces* gave similar results. For a span of 20 years, a team of scientists bred over 1,000,000 *Streptomyces* bacteria, allowing them to mutate at natural rates until they attained a 6-fold ability to produce the natural antibiotic tylosin. Via directed evolution, Stemmer and Holland were able to produce the same result in 1 year with only 24,000 *Streptomyces* (Ibid.). Again, no new species was created.

So, neither “rational design” nor “directed evolution” prove the blind, chance-driven macroevolution postulated by Darwin. Instead, they argue strongly for the existence of an outside, rational Designer who “programmed” the elements to come together to form the first protein molecules. As for directed evolution, if it occurs in nature, then who directed it? Moreover, if directed evolution improves a species without creating a new one, then where is the proof of macroevolution?

Reference:


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