

Surprised By Design

Is it rational to think that the greatest design of all is merely an accident?

During World War II and the Cold War which followed, Soviet Russia was well known for its skill in “reverse engineering.” That is, they were able to take apart and analyze captured enemy equipment and incorporate into their own weapons any innovations in design and performance made by enemy scientists and engineers. For example, the Russian Tupolev Tu-4 heavy bomber looked strikingly like the American B-29 bomber, and with good reason: it was patterned almost bolt by bolt after three captured B-29 aircraft which landed in Russian territory in 1945.

Another, less successful, example of reverse engineering was the Russian space shuttle called “Buran,” Russian for “snowstorm.” Its external dimensions and design are essentially identical to the United States space shuttle called STS for “space transportation system.” But without access to an intact STS shuttle to copy, the Russians were unable to produce a completed shuttle, and the Buran never flew with a human crew aboard.

Closer to home, I recently purchased a set of shelves for my office and liked them so much that I wanted to make an additional set via reverse engineering. So, using the completed shelves as a pattern, I carefully measured the sides, cross pieces, top and bottom, etc. When I looked at these measurements to determine how much wood was required for the shelves and how they might be cut most efficiently, I suddenly realized that the basic structural components of the shelves were designed to be cut out of a single piece of 4-foot by 8-foot oak laminated plywood. This is a standard, mass produced ply-

wood that is less expensive than solid oak but very strong due to the lamination. Suddenly, I found myself thinking the thoughts of the shelves’ designers after they had, simply by dissecting the finished product of their design. I

knew that questions of efficient supply of raw materials, minimization of waste, structural strength, and aesthetics were all answered by the intentional design of the shelves before me.

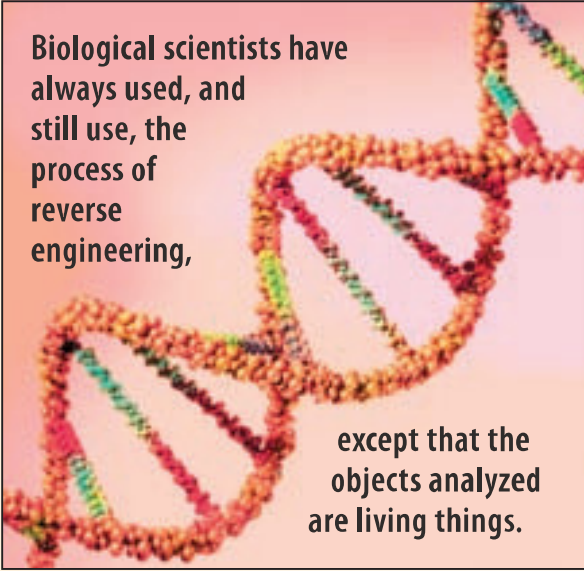
Biological scientists have always used, and still use, the process of reverse engineering, except that the objects analyzed are living things. The scientific method itself is really one of reverse engineering of a completed product—life.

During the 1950’s, James Watson and Francis Crick started with purified DNA

(deoxyribonucleic acid), a finished product, and were able to deduce its helical structure from X-ray diffraction patterns. This was soon followed by an appreciation of how DNA and other molecules were used to store, duplicate, and express biological information in a living cell.

These biological principles, derived from reverse engineering, are universally taught in schools today. But this familiarity should not dampen our sense of wonder and surprise at our ability to think the thoughts of God after Him. Scientists expect there to be understandable reasons for why the living world is the way it is. It is precisely this human expectation of being able to rationally determine how living things work that is the telltale evidence of the Creator God.

—MICHAEL G. WINDHEUSER, PH.D.



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