

placed on top of terrestrial materials and subjected to several thousand years of physical and chemical dynamics at a glacial/terrestrial interface. Seely is stretching our present knowledge too far.

Geology has consistently shown us only one thing about Noah's flood: If it was global, it must have been unlike any other flood. If we have erred in looking for global flood evidence, this error relates to our tendency to look for what we expect: the usual suspects of deposition and erosion. This may turn out to be equivalent to looking for the medium that propagates light waves. The absence of *ordinary* evidence may ultimately prove to be a positive part of the demonstration of an *exceptional* flood.

There is a sublime interplay between faith and the evidences of our Creator. If we think we are ready to close the door on global flood conceptions, we must consider every possibility, especially the unexpected. Many fine scientists lived in a recent world where it would have been inconceivable to suggest that God made the Himalayas by slamming the Indian subcontinent into Asia.

The Genesis flood story has compelled us to look for easy and obvious evidence. In failing to find such evidence, we have become uncertain about the story. This is a necessary step in our evolution, and we cannot foresee the final outcome. The only mistake we can make is to base our faith on a demand that God's creation matches our tiny and temporary human conceptions. We do not have to decide that a global flood never occurred. The phrase "appears naturally improbable" suits both our science and our theology much better.

Derek Eshelbrenner
3657 CR 1500
Havana, KS 67347

On Del Ratzsch's article

I appreciated Del Ratzsch's article, "Design: What Scientific Difference Could It Make?" (*Perspectives on Science and Christian Faith* 56, no. 1 [March 2004]: 14).

Definitions make the difference when juxtaposing methodological naturalism and design. The fundamental question is: "Does methodological naturalism describe how the universe *usually* works or does it describe how the universe *exclusively* works?" To know that methodological naturalism describes how the universe exclusively works would require knowledge of the cause of every physical event for the history of the universe. Since such knowledge is lacking, methodological naturalism is merely a presupposition, which can never be proven. Further, it is disproved by a single miracle.

Methodological naturalism does remain a reasonable basis for scientific investigation and is probably the ultimate definition of science. If data fall within boundaries established by methodological naturalism, the enterprise can be labeled as scientific. If the data fall outside the boundaries of methodological naturalism, the enterprise is not scientific. Macroevolution and biological origins are singular events, which were not observed and cannot be experimentally reproduced. Does the probability of their occurrence fall within the boundaries established by methodological naturalism?

John Reidaar-Olson and Robert Sauer from MIT used amino acid substitutions to calculate the probability of the random assembly of a λ repressor in *E. coli* bacteria. They determined that the probability of the random assembly of a λ repressor is about one chance in 10^{63} for each new protein segment made up of 92 amino acid residues.¹ The expectation that every *E. coli* in any given collection would have a new segment of DNA coding for a new protein composed of 92 amino acid residues is an extreme improbability. A collection of 10^{50} *E. coli*, each with such a new segment of DNA, would have only one chance in 10 trillion of containing one *E. coli* with a λ repressor. A collection of 10^{50} *E. coli* has never existed. Such a collection could fill a hole that is 70% of the volume of planet Earth every day for more than 3.5 billion years. As a corollary of interest, a total of fewer than 10^{50} individual organisms from all species have existed on planet Earth over the past 3.5 billion years. The expectation that random assembly or naturalistic macroevolution would produce an *E. coli* with a λ repressor is a highly irrational scientific hypothesis. Time, matter, a suitable environment, food supply, and good luck are all insufficient for accomplishing this one step in macroevolution.

The amino acid, histidine, is produced by *E. coli* when it is in short supply.² When histidine is in short supply, a segment of DNA, which codes for nine unique enzymes, is copied. These nine enzymes are required for the assembly of the histidine molecule. Each of the nine enzymes involved in histidine production is a complex enzyme. The best probability for the naturalistic assembly of a complex enzyme is about one chance in 10^{65} per try.³ The best probability for the naturalistic assembly of all nine enzymes is about one chance in $[[10^{65}]^9]/9!$ per try or about one chance in 10^{579} per try. With fewer than 10^{50} tries from every species, the best overall probability of ever assembling all nine enzymes is less than one chance in 10^{529} . If a wager were made of one hydrogen atom at the odds of one chance in 10^{529} , a win would net all of the atoms in over 10^{449} universes.

The probabilities of the naturalistic macroevolution of a λ repressor or of the nine enzymes needed for the assembly of histidine fall outside the boundaries of methodological naturalism. Naturalistic macroevolution is a highly irrational scientific hypothesis.

Methodological naturalism explains neither macroevolution nor biological origins. Such events are not scientific but are adequately explained by supernatural genetic engineering, supernatural biotechnology and/or progressive creation.

Notes

¹J. F. Reidaar-Olson and R. T. Sauer, "Functionally Acceptable Substitutions in Two α -Helical Regions of λ Repressor," *Proteins: Structure, Function, and Genetics* 7, no. 4 (1990): 315.

²L. Gonick and M. Whellis, *The Cartoon Guide to Genetics* (New York: Harper Perennial, 1983), 172.

³H. P. Yockey, "A Calculation of the Probability of Spontaneous Biogenesis by Information Theory," *Journal of Theoretical Biology* 67 (1977): 387.

Fredric P. Nelson, MD
ASA Member
2801 Island Avenue, Suite 2
Philadelphia, PA 19153