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Frontiers of Science

L James Gibson Geoscience Research Institute

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FRONTIERS OF SCIENCE



Time Will Tell . . .

Science Magazine has set the clock back on a long-accepted evolutionary assumption. Its January 2, 1998 issue reports a discovery that radically recalibrates the mitochondrial clock.*

The article, "Calibrating the Mitochondrial Clock," explains one method by which scientists date ancient skeletal remains. Based on the assumption that five million years ago humans and the great apes shared a common ancestor, they compare the mtDNA in the two samples to estimate how many mutations separate the two. From the estimated number of mutations and the assumed time of evolutionary divergence, they have created a "clock," with each mutation being a "tick" of that clock. Each tick, then, represents 300 to 600 generations (6,000 to 12,000 years). All of which means that our great, great, great, etc., etc.,

grandpa's skeletal remains are five million years old.

Now, however, research stimulated by DNA testing done in 1992 to identify the last Russian tsar-an actual measurement rather than simply an assumption—has stunned scientists who created and wound the hypothetical clock. The DNA test supports a rate of one mutation every 40 generations (800 years). The enormity of the challenge to the generally accepted method of dating is implicit in the following, taken from the article: "Regardless of the cause, evolutionists are most concerned about the effects of the mutation rate. For example, researchers have calculated that 'mitochondrial Eve'-the woman whose mtDNA was ancestral to that in all living people-lived 100,000 to 200,000 years ago in Africa. Using the new clock, she would be a mere 6,000 years old."

According to Dr. L. James Gibson, director of the Geoscience Research Institute, in Loma Linda, California, the Mitochondrial Clock watcher should keep in mind that the duration of its "ticks" are based

^{*} From the Greek mitos (a thread) and chondrion, a small cartilage. Used today to describe various small, usually rodlike structures found in the cytoplasm of eukaryotic cells. These serve as a center of intracellular enzyme activity that produces the ATP need to power the cell.

on evolutionary assumptions. "Though the scientists who wound the clock are stunned," Gibson says, "creationists are not. They know that variations seen among humans can be accounted for within about 6,000 years rather than the 100,000 to 300,000 years derived from evolutionary assumptions."

A Cosmic Symphony?

"Differences between the particles [that make up the basic structure of the universe] arise because their respective strings undergo different resonant vibrational patters. What appear to be different elementary particles are actually different "notes" on a fundamental string. The universe—being composed of an enormous number of these vibrating strings—is akin to a cosmic symphony."—Brian Greene, *The Elegant Universe*.

Seeing Too Clearly

Camille Corot, the famous nineteenth century French landscape painter, had a habit of going out in the early morning and painting while there was a veil of mist upon the landscape. When the sun came out, things dried up and the land took on a very clear shape and form under the midday sun. Corot would then put away his painting materials and remark, "There is nothing more to be done now. One can see too clearly."

I think what he was talking about, at least in terms of the school of thought of his time, was that when one sees things exposed in a certain terrible clarity, one perhaps sees too much. Mystery, and the elusive shadows that are also part of the landscape disappear. Something goes out of it; and I think perhaps there is a little parable here in connection with our problems of evolution and neo-Darwinism. . . . Indeed, perhaps there is something about the neo-Dawinian approach and certain of its successes that has led us to assume that all of the mist and the shadows have departed and that everything is revealed under the midday sun. . . . It is sometimes easy to assume, when the veil grows thin, that we have the total and complete answer to all our questions....

I think we forget at times that even almost to the end, Charles Darwin was also troubled, I suspect, in the back of his mind by some of these very problems that still concern us. He used to say that the intricacies of the human eye gave him cold shudders....

Not long ago I received for comment a book praising the achievements of science. The author said, in essence, "It is the duty of the historian to hold up all scientific men of achievement as saints for the benefit of oncoming students of science."

What an ironic reversal, in a sense, of our whole conception of

what science ought to be, compared with its struggles in the nineteenth century! Now we hold the platform; but let us not engage, either as historians or scientists, in either regarding ourselves as saints or failing to recognize that over the apparently hard, empirical landscape across which we gaze there may still lie some morning haze, some shadows, which we may hopefully illuminate.—Dr. Loren C. Eiseley, University Professor of Anthropology and the History of Science, University of Pennsylvania, in an introduction to the conference "Mathematical Challenges to the Neo-Darwinian Interpretation of Evolution," at the Wistar Institute of Anatomy and Biology, April 25, 26, 1966.

Mere Creation

Why should Christians bother with "mere creation" [what minimally one must hold to be a Christian] when they already have a fullfledged doctrine of creation? Sadly, no such doctrine is in place. Instead we find a multiplicity of views on creation, many of which conflict and none of which commands anywhere near universal assent. As a result the Christian world is badly riven about creation. True, Christians are united about God being the ultimate source of the world, and thus they are united in opposing naturalism, the view that nature is self-sufficient. But this is where the agreement ends....

Short of the bland "God is responsible for the whole show," any proposed "essential feature" of creation is sure to come under fire. One advocate of creation thinks it is essential that God intervene in the causal structure of the world. Another thinks it is essential that God not upset the causal structure of the world. One advocate of creation thinks it is essential to read Genesis literally and accept a young earth. Another thinks it does not matter how old the earth is. It appears mere creation can achieve unity but only at the cost of sterility-by affirming platitudes and voiding controversy.—William A. Dembski in Mere Creation, Inter-Varsity Press, P.O. Box 1400, Downers Grove, Illinois 60515. E-mail: mail@ivpress.com

Scientists and God

In 1916, researcher James Leuba shocked the nation with his survey, which found only 40 percent of scientists believed in a supreme being. He predicted such ungodliness would spread as education improved.

To test his prediction, two scientists in 1996 surveyed 1,000 randomly chosen scientists with the same questions. The conclusion: As many as 40 percent of scientists believe in a God.

Most inclined to believe: mathe-

maticians (44.6 percent).

Least inclined: physicists and astronomers (69.5 percent).

Both figures, however, are considerably lower than for the population as a whole: Gallop polls show 93 percent of Americans profess belief in God.

Rodney Stark, a professor of sociology and comparative religion at the University of Washington, says that, because of its narrow phrasing, the Leuba survey probably underestimated the commitment among scientists. Several random surveys of religious belief among scientists, says Stark, show that American college professors are as likely to express a belief in God as Americans as a whole.

A study made by Stark and coworkers shows that teachers of the so-called hard sciences, like math and chemistry, are more likely to be devout than are professors of such softer sciences as anthropology and psychology or of the humanities.

One scientist, asked whether he desired immortality, answered: "It is pointless to desire the ridiculous."

Another said, "But it would be nice."

Information is taken from "Scientists Are Still Keeping the Faith," Nature, April 3, 1997, pp. 435, 436.

Appearance or Reality?

Richard Dawkins, biology professor at Oxford University, has said: "Biology is the study of complicated things that give the appearance of having been designed for a purpose."

How, then, can one tell whether they are, indeed purposefully designed? William A. Dembski, author of *Mere Creation: Science, Faith, and Intelligent Design*, offers an "explanatory filter" that will help sift out the truth.

First, can a phenomenon be explained as the result of natural law? If so, there is no need to invoke design.

Second, is the phenomenon plausibly explained by chance? If so, there is no need to invoke design, although design cannot be ruled out, because it can mimic chance.

Third, is chance implausible? If so, the remaining explanation is design. Though it may not be possible to mathematically prove design, one can reasonably invoke design as the best inference to be derived from the evidence.

There is still a problem, which one might call the "plausibility criterion." People differ in their judgment of what is plausible. Nevertheless, the explanatory filter is a useful tool to identify the degree of improbability one must accept to avoid, as Hawkins does, admitting the probability of a Designer.—L. James Gibson, Director, Geoscience Research Institute, Loma Linda, California.