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## The Flood of Antievolutionism<sup>1</sup>

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In 1963, American historian Richard Hofstadter wrote that "today the evolutionary controversy seems as remote as the Homeric era." The Biological Sciences Curriculum Study Project, supported in part by federal funds, was preparing secondary school texts that openly presented evolution as the foundation of biology. And George McCready Price, an outspoken leader of the protest against evolution in the days of the Scopes "monkey trial" and author of numerous antievolutionary tomes, including *The Phantom of Organic Evolution* (1924), *A History of Some Scientific Blunders* (1930), *The Modern Flood Theory of Geology* (1935), and *Genesis Vindicated* (1941), died at the age of 92. But 1963 was also the year that the Creation Research Society—and with it, organized "scientific creationism"—was born.

The Creation Research Society was founded by a group of ten men led by Walter E. Lammerts and William J. Tinkle. Many of these men were disaffected members of the American Scientific Affiliation, a theistic organization founded in 1941 and devoted to the reconciliation of science and evangelical Christianity. The increasing domination of the organization by evolutionists disturbed those who wanted it to oppose evolutionism. The "team of ten" vowed to work, through what they regarded as scientific endeavors, for a revival of belief in special creation as described in the King James version of the Bible. While they held populist William Jennings Bryan, the Scopes prosecutor, in high esteem, the new activists were creationists of a different kind.

Bryan had mocked his scientific opponents: "You believe in the age of rocks; I believe in the Rock of Ages." He had preached to the masses, "I would rather begin with God and reason down than begin with a piece of dirt and reason up." But the new creationists profess no disdain for science. College-educated fundamentalist Christians with a strong commitment to both science (particularly in the form of technology and engineering) and to a literal interpretation of the Bible, they have set out to convince the public that "true science" supports the creation model of world and life origins. Denying that they are trying to bring religion into the public schools, they are seeking to have their model taught as science.

By the end of 1980, seventeen years after Hofstadter had pronounced the evolution controversy dead, "two-model" scientific education bills—which would require public schools to present creation as a scientific model alongside evolution—had been introduced and debated in the state legislatures of Florida, Georgia, Illinois, Iowa, Kentucky, Louisiana, Minnesota, New York, South Carolina, Tennessee, and Washington and were being introduced elsewhere. In addition, various local school boards around the country had passed resolutions that made concessions to creationist pressure. The membership of the Creation Research Society, based in Ann Arbor, had grown to 2,500. Sister organizations such as the Bible Science Association (Minneapolis), the Creation Social Science and Humanities Society (Wichita), the Institute for Creation Research and the Creation Science Research Center (San Diego) had been formed to defend scientific creationism and promote the teaching of creation as equal with evolution.

Led by virtually the same nucleus of antievolutionists, these organizations have become efficient factories of purportedly scientific creationism.

tific antievolutionary propaganda. Conventions, as well as debates, textbooks, and films, are the means to the political end of building a constituency. The Institute for Creation Research (ICR) now offers college- and graduate-level programs as well as summer institutes (offering optional college credit) on creationism; distributes antievolutionary books, pamphlets, and cassettes; and sponsors creation/evolution debates and nationally distributed weekly radio broadcasts. And the ICR also funds research: to find evidence of Noah's ark and a global flood; evidence of coexisting humans, trilobites, and dinosaurs; and proof of a recent creation of the universe and the planet Earth (the earth is assumed to be roughly 10,000 years old). The Creation Research Society developed the first "creation science" biology textbook meant for use in public secondary schools, and since 1964 the society has published a quarterly journal dealing with evidence that supports a literal interpretation of the Bible.

The scientific creationists make no attempt to hide the proselytizing role of their various research organizations. Emphasis Creation 1980 was a Mid-western convention of scientific creationists sponsored jointly by the ICR and the Bible Science Association. The Director of the ICR, Henry Morris, gave explicit instructions, which appeared in the newsletter of the ICR's Midwest Center:

*The purpose of such a convention should not be to provide a forum where various creationists get together to present papers arguing for their own particular interpretations on details of science or Scripture. Rather, it should seek to reach as large and general an audience as possible with carefully chosen papers (and other activities) by qualified speakers who will make the greatest impact for the creationist cause in general.*

The newsletter went on to list acceptable and unacceptable topics. The former included refutations of evolutionism; legal, political, and educational aspects of teaching creation in schools; scientific evidence for a recent creation of the earth and universe, and "flood geology," which attributes a wide range of fossil-bearing geologic deposits to a single catastrophic global event, the Noachian deluge. Unacceptable topics included plate tectonics and continental drift (listed among others as areas of questionable or peripheral significance to creationism) and all "highly technical and specialized treatments of individual problems."

Field or laboratory research represents a very minor charge of scientific creationists. Most efforts are directed toward rewriting the discoveries and interpretations of evolutionists. In this endeavor, numerous evolutionists are portrayed as scientists who have all the evidence to disprove evolution (and support creation) at their fingertips, but who are either too stubborn or too deeply indoctrinated in evolutionary dogma to appreciate it. Arguments of anthropologists, biologists, chemists, geologists, astronomers, physicists, and engineers are reinterpreted or taken out of context. In this way, as I will show below, creationists manage, among other things, to convert arguments about the pattern and process of evolutionary change into arguments about the existence of change.

The primary tactic of the scientific creationists is to find controversy, disagreement, and weakness in evolutionary theory—by no means a difficult task. Having demonstrated problems with various

aspects of evolutionary theory (some fabricated, some real), the creationists then conclude that we must accept the Judeo-Christian biblical account of creation as the only possible, logical alternative. Thus scientific creationism proceeds by constructing an artificial dichotomy between two models—evolution and creation—both incorrectly represented as monolithic.

Actually, various evolutionary explanations are possible, and numerous models, both Darwinian and non-Darwinian, have been posed. They have in common the notion that the earth's life forms are related by common ancestry, whether or not they have since achieved reproductive isolation. Evolutionists agree that the evidence supports this premise of genetic continuity although, as scientists, they do not rule out the logical possibility that life could have arisen independently on more than one occasion on the earth or in the universe.

Creationism, on the other hand, is based on the idea that reproductive isolation usually signals the absence of common ancestry. Given genetic discontinuity, numerous creation-based explanations are nevertheless possible: witness the global diversity of creation myths. Ignoring this diversity, however, scientific creationists begin with one specific and detailed explanation of the universe and require its acceptance on faith as a prerequisite of membership in their various research organizations. The Statement of Belief of the Creation Research Society begins: "The Bible is the written Word of God, and because we believe it to be inspired throughout, all of its assertions are historically and scientifically true in all of the original autographs." The scientific creationists do not pose and test alternative creation models. Doing science is not the business of scientific creationists; destroying the public credibility of evolution is their real goal. "New evidence," the press is told, reveals "major weaknesses" in evolution. Oddly, the creationist tactic of discovering controversies within evolutionary biology amounts to discovering that evolutionary biologists are guilty of doing science—posing, testing, and debating alternative explanations.

One scientific debate in particular, that between the neocatastrophists (or punctuationalists) and the phyletic gradualists, has fueled the fires of scientific creationism. In 1972 Niles Eldredge of the American Museum of Natural History and Harvard paleontologist Stephen Jay Gould launched their new theory of evolution by "punctuated equilibria." Evolution, they claimed, proceeds by rapid fits and starts, punctuating long periods of relative stasis. Drawing from the work of other paleontologists and neontologists, Eldredge, Gould, and later, Steven Stanley of Johns Hopkins developed the implications of a punctuational model of evolutionary change. In so doing, they challenged the assumption that most evolutionary change occurs as a byproduct of slow, ceaseless natural selection acting on variation in well-established populations.

While they have not abandoned the concept of natural selection as an important evolutionary process, the punctuationalists have reinterpreted its role. Central to their argument is the view that most evolutionary change occurs in association with speciation, that is, the formation of independent species by the splitting of lineages into reproductively isolated populations. They argue that speciation may be achieved rapidly in small, geographically isolated populations and that, in such populations, chance (as well as natural selection) can exert much greater influence on genetic change in form than is otherwise possible. They further argue that rapid or dramatic evolutionary changes cannot occur in the *absence* of speciation. The mechanisms and importance of speciation lie at the heart of the debate between the punctuationalists and their opponents. Unlike the phyletic gradualists, the punctuationalists conclude that in macroevolution (evolution viewed in the long range and on a large scale), an episodic pattern of change is the expectation, rather than an exception to the rule.

A second important issue in evolution that has attracted the attention of creationists is the question of the relative importance of chance as a factor in evolutionary change. Using computer simulations, David Raup and his colleagues at Chicago's Field Museum of Natural History have argued that chance is very important in macroevolution as well as microevolution. Raup believes that many genetic changes that do not greatly affect "fitness" may survive or fail to survive owing to chance. Such evolution by chance is called neutral, or non-Darwinian, evolution. The debate in evolutionary biology is over its relative importance, not its existence.

It is hard to imagine creationists drawn to the arguments of Eldredge, Gould, and Raup, since they are antithetical to creationist tenets. First, the question of the genetics of speciation, which is central to the theory of the punctuationalist school, is foreign to creationism. "Speciation" is rarely part of creationist vocabulary; "special creation" is used instead. Creationists claim that each life form was created as a separate "kind" (a common-sensical, undefined concept) and that nature permits variation only within such created kinds. Thus they must ignore a large body of biological data on the mechanisms of speciation and examples of its occurrence observed both in the laboratory and the field. Scientific creationists deny the existence of the very process that punctuationalists argue is critical to evolutionary change.

Nothing about punctuationalism supports the creationist viewpoint. Punctuationalists simply maintain that while much evolutionary change is very slow or static, very rapid "jumps" can occur naturally and these are the important stuff of macroevolutionary change. Genetically, such jumps are as comprehensible as slow phyletic changes. Indeed, whether they are perceived as jumps at all depends upon one's expectations concerning the scale and pace of evolutionary change. As Gould has written (*Natural History*, August 1979):

*New species usually arise, not by the slow and steady transformation of entire ancestral populations, but by the splitting off of small populations from an unaltered ancestral stock. The frequency and speed of such speciation is among the hottest topics in evolutionary theory today, but I think that most of my colleagues would advocate ranges of hundreds or thousands of years for the origin of most species by splitting. This may seem like a long time in the framework of our lives, but it is a geologic instant, usually represented in the fossil record by a single bedding plane, not a long stratigraphic sequence.*

Second, "chance" is also foreign to creationism. One Florida-based organization puts out a flier that reflects the widespread creationist notion that nothing (or nearly nothing) ever happens by chance: "Evolution demands what has not, and cannot happen, even with careful planning—much less by total accident!" It is, of course, a mis-statement of evolution to claim that this body of theory argues that change comes about "by total accident," for selection is not a random process. Yet, the non-Darwinian school ascribes to chance a much more central role than is admitted by other evolutionary biologists. Ironically, in their effort to show disagreement among evolutionists, the creationists are citing the work of paleontologists whose arguments are, in many ways, the most antithetical to creationism.

One reason creationists are able to exploit the current debates among evolutionists is that certain key phrases have entirely different meanings for paleontologists and for creationists (or their constituency). When such phrases are lifted from the work of evolutionists and inserted into creationist literature, they acquire new meaning simply because of differences in assumed knowledge. For example,

the “neocatastrophism” of paleontology (widely quoted in support of creationist catastrophism) has nothing to do with either creation or a great flood. But creationists automatically associate the term “catastrophism” with the concept of the Noachian deluge.

Creationist Gary Parker wrote an essay on neocatastrophism that was circulated in the October 1980 issue of *Acts and Facts*, the free monthly newsletter of the ICR. Reading his article one cannot avoid the conclusion that Raup and Gould consider the creation model tenable, if not actually preferable to evolutionism. Here is a passage from Parker’s essay:

“Well, we are now about 120 years after Darwin,” writes David Raup of Chicago’s famous Field Museum, “and the knowledge of the fossil record has been greatly expanded.” [Parker cites a 1979 article by Raup.] Did this wealth of new data produce the “missing links” the Darwinists hoped to find? “. . . ironically,” says Raup, “we have even fewer examples of evolutionary transition than we had in Darwin’s time. By this I mean that some of the classic cases of darwinian change in the fossil record, such as the evolution of the horse in North America, have had to be discarded or modified as a result of more detailed information.” Rather than forging links in the hypothetical evolutionary chain, the wealth of fossil data has served to sharpen the boundaries between the created kinds. As Gould says, our ability to classify both living and fossil species distinctly and using the same criteria “fit splendidly with creationist tenets.” “But how,” he asks, “could a division of the organic world into discrete entities be justified by an evolutionary theory that proclaimed ceaseless change as the fundamental fact of nature?” [Parker cites a 1979 *Natural History* article by Gould.] “. . . we still have a record which *does* show change,” says Raup, “but one that can hardly be looked upon as the most reasonable consequence of natural selection.” The change we see is simply variation within the created kinds, plus extinction.

The arguments Parker presents outside, as well as inside, quotation marks seem to be those of Raup and Gould. Given these selected tidbits, there is no way to interpret the statements of Raup and Gould except within the framework of the creation model. The reader is not told what Raup and Gould are arguing but is left instead to surmise, incorrectly, that evolution itself is under attack. Furthermore, Parker has chosen to cite titles that seem to support such an interpretation. Raup’s article is called “Conflicts between Darwin and Paleontology.” Gould’s is entitled “A Quahog Is a Quahog.”

Those familiar with Raup’s research will not be surprised to find that his article is actually a treatise concerning problems with Darwinian gradualism. Raup first deals with the complex, uneven record of evolutionary change. His point, quoted more fully, is that “some of the classic cases of darwinian change in the fossil record, such as the evolution of the horse in North America, have had to be discarded or modified as a result of more detailed information—what appeared to be a nice simple progression when relatively few data were available now appears to be much more complex and much less gradualistic.” Raup goes on to discuss the potential of chance processes to bring about apparently patterned evolutionary change—in particular, the extinction of lineages.

Gould’s article is also about problems with Darwinian gradualism. It takes to task those biologists and anthropologists who argue that

species boundaries are artifacts of the human capacity to classify and construct artificial divisions. Gould argues, as Ernst Mayr did years before, that species are real biological entities, but he does not suggest that they are genealogically unrelated to one another or that they cannot give rise to new species.

Despite the attempts of scientific creationists to play up the signs of controversy among evolutionists, there is actually widespread agreement in scientific circles that the evidence overwhelmingly supports evolutionism. Confirmation has sometimes taken unexpected forms, as in the high correlation between the degree of bio-chemical difference between pairs of species and the amount of paleontological time since their apparent separation.

There is agreement that the pattern of origin of taxa in the paleontological record strongly supports genetic continuity and, therefore, evolution. The punctationalists’ concept of evolutionary stasis has been misused by creationists to argue against such a pattern, but evolutionary stasis contradicts only strict gradualism, not evolution. The fact is, the genus *Homo* does not occur in the Mesozoic alongside brontosaurus, as the creationists claim; if it did, we would indeed have to question our evolutionary assumptions.

Scientists do ask questions about the pattern of evolutionary change. In particular, does the fossil record bear witness to the slow, continuous, gradual change envisioned by Darwin and supported by neo-Darwinists? Although still a matter of considerable debate, some form of punctationalism is gaining increasing support among evolutionists. Scientists also ask questions about the process or mechanism of evolutionary change: for example, given a pattern of punctational change, is Darwinian natural selection the best explanation for macroevolutionary trends?

The current debate is complicated because the concept of natural selection embraced by Darwinians has changed with the introduction of population genetics. Steven Stanley’s concept of species selection (the differential survival of species) is part of natural selection as formulated by Darwin and some modern biologists, but not as formulated by population geneticists focusing on selection operating within populations. Therefore, when Eldredge, Gould, and Stanley proclaim natural selection to be an inadequate explanation of macroevolutionary change, it is important to realize that they are talking about natural selection as mathematized, reformulated, and restricted to populational variation by population geneticists in the 1930s.

When a creationist such as Parker describes the putative failure of natural selection, however, it is to an audience that simplistically equates natural selection with evolution—an audience that does not know the difference between natural selection and species selection. Most students of scientific creationism know little about the debate between the phyletic gradualists and punctationalists or that between proponents of Darwinian (nonrandom) and non-Darwinian (random) processes of change. And they will not learn what the debates are about from Parker and his colleagues.

“It’s so utterly infuriating to find oneself quoted, consciously incorrectly, by creationists,” Gould has said. “None of this controversy within evolutionary theory should give any comfort, not the slightest iota, to any creationist.” Yet the scientific creationists, by misrepresenting the ongoing work of evolutionists, have helped the antievolutionary cause to gain more momentum than ever before in the twentieth century. Scientific creationists are widely viewed as learned scholars with impressive credentials, and more and more people are being persuaded that staggering evidence is on their side. Many scientists are baffled that such poor science can be so easily swallowed, and that creation is being taught as science in some schools around the country. Scientific creationism may be poor science, but it is powerful politics. And politically, it may succeed.