CURRENT ITEM I.

Reflections on the Arkansas Creation Trial

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The Arkansas “Balanced Treatment for Creation-Science and Evolution-Science” bill—passed into law as Act 590—was authored by a Biblical literalist from South Carolina, Paul Ellwanger. Trained neither in law nor science, but rather in respiratory therapy, he is perhaps the key person behind both the Arkansas and Louisiana creation bills. In 1977–1978 he prepared a “Model Bill,” taken in large part from the writings of Wendell R. Bird, staff attorney for the Institute for Creation Research (ICR), and conveyed it to the Rev. W. A. Blount, a fundamentalist minister who chaired the Greater Little Rock Evangelical Fellowship. That organization voted to seek introduction of the bill into the Arkansas legislature and thus the bill was eventually conveyed to State Senator James Holsted, a born-again Methodist literalist.

During March of 1981 the bill was given a 15 minute discussion on the Senate floor, followed by comparable deliberations in the House Education Committee. Act 590 was passed on 18 March and signed quickly into law the next day by Gov. Frank White who, by his own admission, had never read the legislation before signing it.

Ellwanger is a leader of the Citizens for Fairness in Education, a group which seeks to indoctrinate—by law—the school children of the United States in the literal truth of the Bible. In written documents subpoenaed for the Arkansas case, Ellwanger remarks to Senator Bill Keith of Louisiana, who introduced a similar bill in that state, “I view this whole battle as one between God and anti-God forces, though I know there are a large number of evolutionists who believe in God—it behooves Satan to do all he can to thwart our efforts and confuse the issue at every turn.”

There exists a spectrum of “professional creationists,” running from Biblical literalists like Ellwanger, who make few pretenses about putting religion back into the public school curriculum, to the “scientific creationists,” who seek an air of respectability in the eyes of the public by concealing the exact same fundamentalism under the guise of science. With their pleas for a fair hearing, the scientific-creationists, in particular those at the ICR, excel at duping the public and manipulating both the press and their adversaries. How else can one explain their countless speaking invitations from secular universities and the willingness of many scientists to debate them, as if “scientific” creationism were an intellectual equal of evolutionary biology or, more accurately, science as a whole? This is not to advocate censorship of their ideas—not at all. The more the entire content of “scientific” creationism is brought before the public, and the more theologians, philosophers, and scientists expose exactly what it is that creationists are saying, the sooner we will be rid of this nonsense. But this will not happen so long as scientists give the appearance of treating creationism as the equal of science. Debates are to the advantage of the creationists especially when they create the ground rules: “we will only debate the scientific evidences . . . religion and philosophy will not be subjects for discussion . . . .” Structured in this way, debates invari-

* The author was science advisor to the ACLU during the course of the trial.

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ably place scientists on the defensive because the creationists seek to promote a dualistic philosophy: evidence against evolution, they argue, is evidence for creationism. On the other hand, it is no surprise that creationists are reluctant to debate an altogether different proposition: Is “scientific” creationism science or religion? This is the critical issue, and it was the focus of the lawsuit brought by the American Civil Liberties Union (ACLU) in Arkansas. Even with considerable help from the ICR, the defense was unable to support their contention that creation-science is a legitimate body of scientific knowledge. The ICR and other creationist groups are now instigating a public relations campaign to convince their followers, and the public, that the reason for losing the lawsuit was a poor defense by the Arkansas Attorney General and that the scientific content of creationism did not receive a fair hearing (see the ICR’s Acts and Facts, Impact No. 105, for March 1982).

“We do not advocate,” ICR staff members constantly remind the press and public, “advancing creation-science through the legislative process or the courts. We believe it can stand on its own scientific merits.” That this is a deliberate deception was repeatedly documented during the Arkansas litigation. Consider the following:

1. Wendell Bird, staff attorney for the ICR, has written extensively about the constitutional legality of creationism and the methods of introducing bills into state legislatures. He is the chief architect of many of these attempts (through people like Ellwanger).

2. Bird and the ICR sought to intervene on the side of the defense in the Arkansas case, but were denied by the Court; also the Arkansas Attorney General, Steve Clark, turned aside their direct participation in the litigation.

3. Bird and the ICR provided Clark with a list of potential witnesses and the trial record shows that Bird contacted many on that list, encouraging them to participate.

4. The ICR has been active in seeking donations for the Arkansas and Louisiana Creation Science Legal Defense Funds.

5. Duane Gish, Associate Director of the ICR, was an official advisor for the defense at the Arkansas trial.

6. Wendell Bird has sued in the Western District of Louisiana to compel the state to enforce the creation law and he has been deputized in the Eastern District, apparently to help defend against the ACLU suit.

The point of this is that the leading creationist organization provided significant help in defending “creation-science” as science, and it failed hopelessly. The case for scientific creationism was lost not by the inadequacies of litigation but by the inescapable religiosity of creationism itself. If one examines the content of Act 590, the reasons for its failure are self-evident.

Act 590 had three critical sections. Section 1 established the requirements for balanced treatment. It stated that whenever lectures, textbooks, library materials, or other educational programs considered the subject of the origins of man, life, the earth, or the universe in any way, “balanced treatment” would be required for “creation-science” as well as for “evolution-science.” According to the act, the “balanced treatment” requirement would be triggered with any such discussion in the elementary or secondary school systems.

If balanced treatment is to be given to “creation-science” and “evolution-science,” it would help if teachers knew exactly what those terms encompassed. That was the purpose of Section 4, and 4(a), which attempted to define the content of “creation-science,” and which became the focus of most of the testimony:

“Creation-science includes the scientific evidences and related inferences that indicate: (1) Sudden creation of the universe, energy, and life from nothing; (2) The insufficiency of mutation and natural selection in bringing about development of all living things from a single organism; (3) Changes only within fixed limits of originally created kinds of plants and animals; (4) Separate ancestry for apes and man; (5) Explanation of the earth’s geology by catastrophism, including the occurrence of a worldwide flood; and (6) A relatively recent inception of the earth and living kinds.”

Section 4(b), which defined “evolution-science,” adopted concepts reflecting a dualist approach: emergence of the universe and life by naturalistic processes, sufficiency of mutations
and natural selection in causing descent with modification, emergence of man and apes from a common ancestor, acceptance of uniformitarian explanations of earth's geology, and a timescale for the origin of earth and life in the billions of years.

Finally, in Section 6 the legislature reminded their constituents that their purpose was pure of heart: to protect academic freedom, ensure freedom of religious exercise, guarantee freedom of speech, prevent discrimination on the basis of beliefs, and to prevent the "establishment of Theologically Liberal, Humanist, Nontheist, or Atheist religions." These "religions," it was argued on subsequent pages of the act, include a "religious belief" in evolution as part of their doctrine.

Once having set down the canons of truth and justice, the legislators assured any who might question their motives that Act 590 does not permit any religious instruction or establish religion in any way. And lest the courts or other do-gooders miss the point, they mention this in three separate sections of the act.

Taking issue with Act 590, the ACLU filed suit May 27, 1981, on behalf of 23 plaintiffs, including 16 religious leaders and organizations. The constitutionality of the act was challenged on three grounds: (1) it establishes religion in violation of the First Amendment, (2) it violates the academic freedom of teachers and students under the First Amendment, and (3) it is impermissibly vague, thus abridging the Fourteenth Amendment. The trial began 7 December and lasted 10 days, during which time spectators were treated to 17 witnesses for the plaintiffs and 11 for the defense. Federal district court judge William R. Overton went out of his way to allow both sides to enter into the record virtually any testimony or documents they wished, thereby establishing his desire to consider the arguments as fairly and completely as possible.

The strategy of the plaintiffs, of course, was to prove Act 590 unconstitutional, and to do so, the litigation was organized into "cases" on religion and history, philosophy, science, and education. Although the science case received the bulk of the publicity in the national press, it is important to point out that only four of the 17 witnesses who testified were scientists (William Mayer, also a scientist, testified for the education case). By and large, the constitutional arguments were not established by the science witnesses; rather, the prime purpose of their testimony centered around documenting that the scientific claims of creationists are, first, absolute nonsense and, second, consistently characterized by faulty reasoning and distortion of conventional scientific data.

Legally, the religion and history, philosophy, and education cases were more crucial than the science case. First, they established the religiosity of Act 590 by tracing the history of Christianity and Fundamentalism and by demonstrating the parallels between their doctrines and the language of the act. Second, they compared the content of religion and science and showed that the former permeates "creation-science." Finally, these cases demonstrated the entanglement between the state and religion that would inevitably arise in all educational programs if Act 590 were implemented. Taking each of these cases in turn, it is easy to appreciate how important they were.

The religion and history case was built around the testimony of five witnesses, all taking the stand on the first day of the trial. The Rev. Ken Hicks, a plaintiff himself, was the first witness. Hicks is a Bishop of the United Methodist Churches of Arkansas, and his gentle, eloquent voice established the high tone of the ACLU challenge. Yes, he said, a person can be religious and still support the separation of church and state, keeping that which is religion in the churches and that which is science in the classroom. Furthermore, he noted, in his professional opinion Act 590 promotes a fundamentalistic religious doctrine.

Dr. F. Bruce Vawter, a Biblical scholar from DePaul University, testified to the narrative quality of the Bible, noting that only the Biblical story of creation fits the words of Section 4(a) so precisely. In a statement later to find its way into Overton's decision, Vawter declared the unmentioned reference for Section 4(a) to be the first 11 chapters of Genesis.

The next witness, Dr. George Marsden of Calvin College, traced the development of Fundamentalism, from its beginnings in the late nineteenth century to the present. A crucial part of his testimony established a theme carried
throughout the plaintiffs' case: fundamentalists' beliefs are characterized by a dualist philosophy. You are either with us or with Satan. And like Vawter before him, Marsden was called upon to affirm the religiosity of Act 590.

Sociologist Dorothy Nelkin of Cornell University, an expert on the creationist movement, explained that creationists, and others sharing their beliefs, perceive science as a threat because it is uncertain, often appears immoral, and the secularism it tends to advance is viewed as causing a loss of faith. Nelkin then introduced the oath of the Creation Research Society which all full members must sign. The oath is a statement of fundamentalists' tenets, including Biblical inerrancy, and it was repeatedly referred to later in the trial, particularly during the cross-examinations of defense witnesses. (The text of the oath can be found in Overton's decision; see Science, 215:942–943 [1982], footnote 7.)

Dr. Langdon Gilkey, a theologian from the University of Chicago, completed the religion-history case and the first day of the trial. His testimony was especially important because it drew connections between the concepts of creator and creation as found in the Judeo-Christian-Islamic ethic and the use of the words in Act 590. Gilkey pointed out that "creation from nothing"—creatio ex nihilo—as found in Section 4(a) is perhaps the most religious of statements.

On the second day, Dr. Michael Ruse of the University of Guelph set forth the philosophical arguments against creation-science and contrasted the content of science and religion at length. He observed that the content of Sec. 4(a) is not derived from the scientific literature but from creationists' writings, the sole purpose of which is the validation of a literal reading of Genesis. Finally, Ruse testified that the so-called definition of "evolution-science" in Sec. 4(b) is a caricature, a manifestation of creationists' dualism, and not at all an accurate representation of contemporary evolutionary theory.

The science case began with population geneticist Francisco Ayala from the University of California at Davis. Ayala gave Overton and the audience a basic discourse on genetics and the molecular evidences for evolutionary relationships. In particular, he outlined the ways in which creationists distort the roles of mutation and natural selection in evolutionary change. Ayala was an especially tough witness for the defense, not only because of his scientific credentials but also because of his religious training for the priesthood; in fact, when ACLU lawyers objected to defense questions of a philosophical-religious nature, it was Overton himself—with obvious admiration—who stated that Ayala seemed more than qualified to answer. An overriding happily accepted by the plaintiffs.

A short break in the science case followed when State Senator James Holsted was called to the stand to recount the chain of events that resulted in his introducing the bill. With his good ol' boy attitude, he remarked that he did not seek advice on the constitutionality of the bill from the Attorney General because, "Clark's opinion is just an opinion." Even Clark was amused.

But Clark was to have the last laugh. At the time of the trial Holsted was under indictment for embezzling money from his family insurance business. In January, Holsted was forced to resign from the State Senate in exchange for the charges being dropped. It seems that even born-again Christians and creationists, as well as evolutionists and secular humanists, can be crooked.

The next witness was Dr. G. Brent Dalrymple of the U.S. Geological Survey at Menlo Park. Dalrymple can only be described as a lawyer's witness. Having had an opportunity to examine his testimony prior to his arrival in Little Rock, I was astonished at the fidelity of his answers; good lawyers want their witnesses to answer questions only in the way they are instructed, with minimal deviation, thank you. Dalrymple fulfilled all expectations. Like Ayala, he gave a clear concise introductory lecture, this time on radiometric dating. He explained how geologists make certain samples are "clean" before attaching any reliability to their ages, and he also hit hard at creationists' distortions of the radiometric data. Few witnesses raked the creationists over the coals quite so well.

The third day of the trial saw the completion of the science case. First to testify was Dr. Harold Morowitz, a biophysicist from Yale University, who addressed one of the key arguments of the creationists—the absurd claim that the
second law of thermodynamics proves evolution is false. Morowitz pointed out that the creationists characterize the biosphere as an isolated system when in fact it is open, exchanging energy and, to some extent, matter across its boundaries. Under such circumstances, it is not classical interpretations of the second law which are relevant, but the more recently developed irreversible thermodynamic theory.

The final science witness was Dr. Stephen J. Gould of Harvard. Gould’s testimony also focused on creationists’ misunderstandings and distortions of contemporary science: the meanings of catastrophism and uniformitarianism, the use of the geological record to support a Noachian deluge, gaps in the fossil record, the sudden appearance of diversity in the Cambrian, and the problem of transitional forms between major groups. As did all of the science witnesses, Gould’s time on the stand subtracted a proper amount of credibility from the scientific claims of the creationists.

With the close of the science case, it was time for the educators to have their turn at Act 590 and the creationists. Over the next two days, six witnesses—five high school teachers or administrators, and Dr. William V. Mayer of the Biological Sciences Curriculum Study—drove the final stake through the heart of Act 590. The importance of the education case is shown by the attention given to it by Overton in writing his opinion. At issue here was whether Act 590 fails the Establishment Clause, and one measure is the extent to which the act fosters “excessive government entanglement with religion.” Each of the education witnesses observed that after examining creationist materials, they concluded it was religion, not science. Consequently, they asked, how can we develop a science curriculum based on religion, how can we explain to students the young age of the earth and its organisms, or the presence of a worldwide flood, without recourse to the Bible? In matters of curriculum development, textbook selection, and enforcement of the law, Judge Overton recognized entanglement when he saw it.

If the testimony of the plaintiffs’ witnesses was impeccable (sensu stricto), that of the defense can only be characterized as bordering on the bizarre. Every one of the 11 witnesses had something very severely wrong with his picture of reality. This is not to say that they were not decent, genuinely kind human beings—virtually all were—but in this day and age, after hundreds of years of intellectual struggle and sacrifice in the face of religiously-inspired ignorance and persecution, one can only equate creationists’ views of reality—a universe and earth only thousands of years old and a denial of descent with modification—as being on a par with belief in a flat earth or witchcraft. Clearly, one’s perception of the nature of their testimony rests upon one’s own view about the nature of the world. Many in the courtroom no doubt looked upon this testimony as fulfilling God’s work in an increasingly hostile (read secular) world. Unfortunately for them, cooler heads prevailed, and it was decreed that at least in this instance, they were simply going to have to practice their brand of religious exegesis in their churches and not in the public school classroom.

The first witness for the state established the spirit of their case. The following morning after his testimony, the local headlines blared:

State’s 1st witness says UFOs show Bible true.

The state’s philosophy-religion case rested with Dr. Norman Geisler, a theologian from the Dallas Theological Seminary. Like all the witnesses to follow him, Geisler’s testimony was characterized by apologetics and special pleading. Geisler teaches logic and philosophy. Consider what he said:

1. To believe that there is a creator has no religious significance; one must believe in a creator.

2. We do not rule out stones from a geology class because some people worship stones. And we should not rule out God from the science class merely because some people worship God.

3. There are only two philosophical views of ultimate origins: intelligent intervention or no intelligent intervention.

Geisler was also aware of recent advances in the philosophy of science, noting that the Big Dipper is a good example of a scientific model. But he went down in courtroom history, somewhat ignominiously, for his satanic delights. Like many strict Bible believers, he sees manifold manifestations of Satan in the world, each
leading us astray. For Geisler, these included demon possession, occult activities, exorcism, and unidentified flying objects.

Lest one believe Geisler to be unique, consider the following words of Dr. Henry M. Morris, Director of the Institute for Creation Research (Morris, 1978:66–67):

“. . . the possibility is at least open that the fractures and scars on the moon and Mars, the shattered remnants of an erstwhile planet that became the asteroids, the peculiar rings of Saturn, the meteorite swarms, and other such features that somehow seem alien to a ‘very good’ universe as God must have created it may have been acquired later. Perhaps they reflect some kind of heavenly catastrophe associated either with Satan’s primeval rebellion or his continuing battle against Michael and his angels . . . . Furthermore, the well-documented association of certain ‘U.F.O.’ sightings with occultic influences and tendencies suggests that the ‘rulers of the darkness of the world’ (Ephesians 6:12) are increasingly imaginative in their battles for the minds of men. Angels, both good and bad, can be shown Biblically to have considerable knowledge and power over natural processes and, thus can in many cases either cause or prevent physical catastrophes on earth and in the heavens. In any event, this type of cause warrants further research as a potential explanation for apparent disturbances in the stars and planets since their creation.”

Inasmuch as Dr. Morris and others like him want to exercise control over the public school curricula, those reading this should take it upon themselves to make Dr. Morris’ judgments about science available to local school boards, religious leaders, and state legislators. After all, he is Director of the most important creationist organization in the United States and will be directly involved in writing educational materials for the public schools if creationists get their way.

The “education case” of the defense consisted of three witnesses: Dr. Larry Parker (Georgia State University), Dr. W. Scott Morrow (Wofford College), and Jimmy Don Townley, an Arkansas high school teacher. Parker and Mor-

row both adopted a hostile manner, arrogantly proclaiming Act 590 stimulating, thought-provoking, and an instrument of sound education. The schools, Parker declared, belong to the people, and the polls show they want creationism taught; schools should be responsive, and Act 590 is a step in the right direction. For Morrow, who claimed to be an evolutionist, creationism should be taught in the interest of fairness, and he went so far as to state that the flat-earth would be an interesting “model” to consider in geology classes. The third witness, Townley, said merely that he wanted to teach creationism, to which Judge Overtton responded: “But this isn’t Sunday school we’re talking about!”

All three were dispatched with quick cross-examinations. Parker has been a creationist since high school and has never read any evolution literature or even a complete biology text. Morrow’s testimony was shown repeatedly to be different from that of his pretrial deposition; upon his arrival in Little Rock he suddenly changed his mind about many things and his allegiance to creationism improved markedly, no doubt a result of considerable last minute coaching. It did not help; Overtton admonished him for voicing opinions with no evidence to support them.

The defense then proceeded to present seven “science” witnesses. The substance of their testimony has been recounted nicely in Science by Roger Lewin (1982), therefore there is little need to repeat it here. It was decided by the ACLU not to engage in a scientific debate during cross-examination but simply to demonstrate that the scientific views of each witness were derived solely from religious beliefs and that they used science as a vehicle for religious expression. With only one exception, all had signed the CRS oath and it was hung, like a tight noose, around their scientific necks by the ACLU lawyers. To add to their embarrassment, all that remained was to establish that each had published only a few papers in refereed scientific journals throughout their entire careers.

The only non-creation scientist among the defense witnesses was Dr. N. C. Wickramasinghe, a mathematician-astronomer from the University College of Wales. He was an enigma, causing everyone to wonder why a professor Hindu, with undeniable academic cre-
dentials, was consort ing with this crowd of Fundamentalists. The answer was not long in coming, as he announced that a person would have to be "deranged" not to see life as a cosmic phenomenon (there are genes out in space, probably embedded in the frigid hearts of comets, "seeding" the solar system, cosmically). Pressed on cross-examination, he also confessed it was a possibility that insects are smarter than we humans and are not letting on to us because they are doing so well. He also testified, much to the chagrin of the defense, that no rational scientist could possibly believe in a very young earth, Noachian deluge, or that evolution has not occurred.

Is there any wonder Judge Overton ruled the way he did—that creationism has no scientific or educational value. The Louisiana case, if it ever goes to trial, probably will not be significantly different from the Arkansas case. The Louisiana statute has the same goals as Act 590—to wrap Genesis in the cloak of scientific respectability. But the state will be unable to do this, for after the Arkansas trial what creationist could convince a judge of his scientific credibility? Any creationist who thinks he can should stop and think: Is he willing to undergo a seven or eight hour pretrial deposition? Is he willing to subject himself to a highly controlled cross-examination by the ACLU? During the litigation, several potential defense witnesses quickly retreated when they saw what fate awaited them. And let the word go out: we welcome the opportunity for them to discuss their views about science and religion at the next trial, under oath.

The future of the creationism-evolution conflict lies not with state laws but with the actions of local legislative bodies and school boards. The creationists have learned that they cannot fight the Constitution in the federal courts. So it is important that scientists, and others opposed to creationism, support—financially—their local (and national) ACLU chapter. This is the surest way to guarantee that pressure will be placed on public officials, none of whom will want to face an expensive law suit he cannot possibly win.

Finally, the scientific community owes the staffs of the ACLU and the New York law firm of Skadden, Arps, Slate, Meagher, and Flom sincere thanks and admiration for an exquisitely prepared case. More importantly, the litigation team should be recognized publically:


ACLU (Little Rock): Robert Cearley, Philip Kaplan, Joan Vehick, and Sandra Kurjiaka (Director, ACLU of Arkansas).


Literature Cited