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RECENT DEVELOPMENT

SCIENCE IN SCHOOL: FROM ANTIRELIGION TO SCIENTIFIC CULT

Science has always held an honored, yet ambiguous, place in United States law. At the Constitutional Convention, fifty-five delegates voted, unanimously and without debate, to protect science through patent and copyright provisions.¹ The Framers did not, however, define science. Nor did the Framers suggest how to educate scientists or estimate the relative value of science should the good of science conflict with other protected values. The modern conflict between biological science and fundamentalist religion over human origins shows that the legal structure has not resolved these problems. The uncertain role of science in American law has forced scientists to defend their right to pursue and teach scientific ideas as part of other personal freedoms.

This article notes a three-stage trend beginning with *Scopes v. State*² in 1927, and ending with *Edwards v. Aguillard*³ in 1987. During this sixty-year span, religious groups have tried to control science in the public classroom. They attempted this first through statutes to exclude specific evolutionary tenets of biology, and then through statutes to require a "balanced treatment" of biological and Biblical views of human origins. In response, scientists challenged these statutes in court. Case law, however, has not defined science in a way that is subtle enough to include all the methods of a nonexperimental science like evolutionary biology, yet discriminating enough to distinguish scientific results from a less empirical form of truth like religious faith. Thus, science remains vulnerable to a third line of attack. This article concludes with the prediction

1. "The Congress Shall have the Power. . . . To Promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. 1, § 8[8]. For a brief account of the origins of United States protection of science and inventions, see H. FORMAN, *Two-Hundred Years of American Patent Law*, in 200 YEARS OF AMERICAN AND ENGLISH PATENT, TRADEMARK, AND COPYRIGHT LAW 21 (1977).

2. 154 Tenn. 105, 289 S.W. 363 (1927).

3. 107 S. Ct. 2573 (1987).

that antievolutionary groups will try to remove evolutionary biology from the public classroom totally on the grounds that evolution is just another "theory" or unsupported belief.

The first-stage legal attack began in the 1920's when several states enacted laws based on the premise that evolution was an anti-religious doctrine.⁴ Tennessee decreed that teachers in publicly funded schools could neither deny "the story of the divine creation of man taught in the Bible," nor teach about how "man has descended from a lower order of animals."⁵ In an effort to test this new law, officials charged John T. Scopes with the crime of teaching evolution in a high school biology class.⁶ On the appeal of Scopes' conviction, his defenders tried to invalidate the antievolution statute on the theory that the Tennessee Constitution mandated support for science.⁷ The appellate court, however, refused to equate bad science with bad law. If popular prejudice induced the legislature to derail the course of science education, the court would not interfere.⁸ In short, the *Scopes* court defined science in the classroom as a political matter. Furthermore, the court did not find any religious objection to a law that simply kept doctrine out of the classroom without inserting the tenets of any one religion.⁹

During the years following *Scopes*, antievolution forces lost legal ground. Tennessee finally repealed its statute in 1967.¹⁰ One year later, in *Epperson v. Arkansas*,¹¹ the United States Supreme Court invalidated a similar statute that had barred evolution from textbooks in Arkansas. According to the *Epperson* Court, the first amendment prohibited any law that tied teaching or learning to any religious dogma.¹² Thus, *Epperson* signaled a clear end to judicial support that banned science from the classroom simply because scientific tenets did not coincide with certain religious ones.

Even before the *Epperson* decision, antievolution forces regrouped for a second-stage attack. In an attempt to combat the growing evolution movement, they developed their own explanation of human origins called scientific creationism, which contradicated the facts of evolutionary theory concerning the age of the earth, the

4. E. LARSON, TRIAL AND ERROR: THE AMERICAN LEGAL CONTROVERSY OVER CREATION AND EVOLUTION 7-27, 50-57 (1985).

5. 1925 Tenn. Pub. Acts, ch. 27.

6. LARSON, *supra* note 4, at 58-63.

7. TENN. CONST. art. I, § 8 (1925).

8. *Scopes*, 154 Tenn. at 120, 289 S.W. at 366.

9. *Id.* at 120, 289 S.W. at 367. Even though it upheld the antievolutionary law, the appellate court dismissed the case on a technical sentencing error and advised the prosecution to enter a *nolle prosequere*. *Id.* at 121, 289 S.W. at 367.

10. Note, *McLean v. Arkansas Board of Education: Finding the Science in "Creation Science,"* 77 N.U.L. REV. 374, 378 n.22 (1982).

11. 393 U.S. 97 (1968).

12. *Id.* at 106.

development of species, and the meaning of the fossil record.¹³ Thus, creationists shifted the topic of debate from religion against science to one scientific doctrine against another. Armed with their new approach, creationist forces in Arkansas and Louisiana lobbied for balanced treatment in the classroom, that is, for the equal presentation of creation science along with any teaching about evolution.¹⁴

Plaintiffs in both Arkansas and Tennessee recently challenged these statutes as violations of the establishment clause of the first amendment. In *McLean v. Arkansas*,¹⁵ the federal district court enjoined Arkansas officials from enforcing balanced treatment on the grounds that creation science was really a way of using fossil data simply to confirm Biblical dogma. Last term, in *Edwards v. Aguillard*,¹⁶ the United States Supreme Court held that balanced treatment, by design, inserted a particular religious dogma into the classroom. Both courts followed the test previously established in *Lemon v. Kurtzman*,¹⁷ holding that because the statutes were enacted solely for a religious purpose, they were invalid regardless of any intrinsic merits or other purposes they could serve. *Aguillard* also hinted at the real limits of the Court's concern for religious motives of legislators. Both the concurring and dissenting opinions stressed that such illicit motives must clearly serve the sole purpose of advancing a religious goal.¹⁸ A balanced-treatment act, then, might meet the *Lemon* standard if the act served some secular purpose along with the religious one.

Such a secular purpose might be the advancement of scientific knowledge. Both *McLean* and *Aguillard* suggested precisely this point. As the *Aguillard* dissent noted, the creationist forces had marshalled hosts of experts to testify about the unproven status of evolutionary theory.¹⁹ If evolution cannot be proven, should it ap-

13. Essentially, the creationists posit a world 6,000 to 20,000 years old, the simultaneous creation of all "kinds" or species, and a fossil record created during a single catastrophic flood. *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1225, 1265-69 (E.D. Ark. 1982). For details on the views of creationists, see D. GISH, *EVOLUTION? THE FOSSILS SAY NO!* (3rd ed. 1979), and H. MORRIS, *SCIENTIFIC CREATIONISM* (1974). For explanations of evolution that specifically address creation science theory, see P. FUTUYMA, *SCIENCE ON TRIAL: THE CASE FOR EVOLUTION* (1983), *SCIENTISTS CONFRONT CREATIONISM* (L. Godfrey 1983), and P. KITCHER, *ABUSING SCIENCE: THE CASE AGAINST CREATIONISM* (1982).

14. ARK. STAT. ANN. §§ 80-1663-1676 (Supp. 1981); LA. REV. STAT. ANN. §§ 17:286.1-286.7 (West 1982).

15. 529 F. Supp. at 1267-72.

16. 107 S. Ct. at 2584.

17. 403 U.S. 602 (1971). According to the Supreme Court's religious test for constitutionality, a law must have a secular purpose, a primary effect that neither advances or inhibits religion, and an impact that does not foster excessive governmental entanglements with religion. *Id.* at 612-13.

18. *Aguillard*, 107 S. Ct. at 2778-83.

19. *Id.* at 2598.

pear in the classroom as scientific doctrine? Indeed, as the *McLean* court remarked, skeptics might argue that evolution is just another tenet of belief much like religious dogma.²⁰ Thus, the third-stage attack may advance from the position that evolutionary theory itself is not true science.

Ironically, the pro-science *McLean* decision may provide the foundation for this third-stage attack. After examining the methods science uses for testing theory against data, the *McLean* court defined science in terms of clear data, falsification, and other apparatus of scientific positivism.²¹ In this theoretical model, scientists test ideas against the relevant empirical data and calculate unambiguous results. Working scientists, in contrast, recognize the *McLean* model as an abstract ideal. If only science were so easy! Instead of viewing all the data on a problem at once, scientists glimpse clues over time and try to fit the new clues into old theories already held by scientific groups. Even ideas that seem obvious in hindsight often meet collective resistance from scientists when the ideas first occur to a few insightful individuals. Science, it seems, has an ideological bias in favor of established theory.²²

The discovery that scientific truth coalesces as groups decide what to believe has led some legal observers to compare science with religious dogma. Evolution can be described as just another belief.²³ Of course, this is true to a degree of any human thought system. Even so, some scientific theories have considerably more empirical support than do most religious beliefs. In modern biology, evolution rests on so secure a data base that biologists confine their questions to details such as: "did evolution occur steadily over time or in spurts of punctuated equilibrium?" or; "which particular set of fossils represents the last break between humans and known prehuman hominids?"²⁴

Nonetheless, the simple fact that science leaves any room for

20. *McLean*, 529 F. Supp. at 1273-74.

21. *Id.* at 1267.

22. For two landmark statements of the effects of group pressure on the acceptance of scientific idea, see T. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (2d ed. 1970), and *THE STRUCTURE OF SCIENTIFIC THEORY* (F. Suppe. 1974). For applications to the legal problems of creationism, see *infra* note 23.

23. Caudill, *Law and World View: Problems in the Creation- Science Controversy*, 3 J.L. & RELIGION 1, 35-45 (1985). Using the ideas of Kuhn and others, Caudill depicts science as a shifting, semireligious world view. *Id.* at 22-31. The tentative nature of scientific work can lead courts astray when they accept tentative findings as ultimate facts about some issue like hereditary insanity, IQ scores among different ethnic groups, or the educational value of busing for school children. Conley, "The First Principle of Real Reform": *The Role of Science in Constitutional Jurisprudence*, 65 N.C.L. Rev. 935 (1987).

24. For details on this massive data support, see FUTUYMA, Godfrey, and KITCHER, *supra* note 13.

unproven belief exposes it to a third-stage attack. Recently, plaintiffs have tried to excise other nonreligious beliefs from classroom reading. In August 1987, the Sixth Circuit ruled that reading matter with a possibly antireligious content did not violate free exercise of religion because it did not require students to believe in the textual content.²⁵ In the same month, the Eleventh Circuit ruled that material which simply presented a possibly religious point of view (in this instance secular humanism) did not violate the establishment clause unless the material actively promoted the belief.²⁶ Neither case, however, discussed the problem of a science that teaches theory as if it were a proven fact. If evolution is just another theory, one could argue that schools should treat it like other beliefs by either barring it from the classroom or, at least, teaching it as a tentative holding or point of view.

In conclusion, science enjoys constitutional blessing, but not protection. When, over the years, different religious groups have tried to exclude scientific theory about evolution from the public classroom, friends of science have defended a pro-science position by arguing in favor of freedom from religious intrusion. The law simply does not protect science itself as a social good.

This article predicts that the next struggle between fundamentalist religion and evolutionary biology will be based directly on the nature of science and not on the principles of religious freedom. Evolution's foes have lost both the battle to exclude evolution from the classroom and the battle to balance it with a discussion of scientific creationism. The next step may seek to mandate textbooks that explain the tentative nature of scientific theories or belief systems. Such laws, motivated by a desire for accurate science along with any religious motives, could survive present judicial tests. Such laws, then, could shift the struggle from the courthouse to the classroom. By law, future science teachers may face the challenge of teaching subtle nuances in the history or philosophy of science along with the hard data that supports evolutionary theory.

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25. *Mozert v. Hawkins County Bd. of Educ.*, 827 F.2d 1058 (6th Cir. 1987).

26. *Smith v. Board of School Comm'rs of Mobile County*, 827 F.2d 684 (11th Cir. 1987). This appellate court decision overruled *Smith v. Board of School Comm'rs of Mobile County*, 655 F. Supp. 939 (S.D. Ala. 1987), in which a district court had upheld a law banning textbooks with secular humanist contents from Alabama classrooms.

