

Notes

Edwards v. Aguillard: Creation Science and Evolution — The Fall of Balanced Treatment Acts in the Public Schools

*"It took God only six days to create the universe - it's gonna take the court two weeks to decide if it should be taught."*¹

I. INTRODUCTION

Since Charles Darwin published *The Origin of Species* in 1859,² religious fundamentalists have waged war against the book's evolutionary teachings.³ Recognizing that the courts will not allow the teaching of evolution to be suppressed,⁴ fundamentalists no longer

1. Statement by an anonymous observer at the Arkansas creation-evolution trial. D. NELKIN, *THE CREATION CONTROVERSY - SCIENCE OR SCRIPTURE IN THE SCHOOLS* 137 (1982).

2. The theory of evolution credited to Darwin (1809-1882) is that all forms of advanced life inhabiting the earth originated as lower forms of life, which ascended to their current status in a natural selection. Note, *The Constitutional Issues Surrounding the Science-Religion Conflict in Public Schools: The Anti-Evolution Controversy*, 10 PEPPERDINE L. REV. 461, 463 (1983).

3. "In 1925, fundamentalists and evolutionists first clashed in court at the criminal trial of John Scopes. Scopes, a Tennessee schoolteacher, was convicted of violating a state law prohibiting the teaching of evolution." Levit, *Creationism, Evolution and the First Amendment: The Limits of Constitutionally Permissible Scientific Inquiry*, 14 J.L. & EDUC. 211, 211 (1985). The law was upheld by the Tennessee Supreme Court. *Scopes v. State*, 154 Tenn. 105, 289 S.W. 363 (1927).

4. Forty years after the *Scopes* trial, the United States Supreme Court held that the prohibition of the teaching of evolution violated the first amendment. *Epperson v.*

attempt to eradicate evolution instruction in the public schools. Instead, fundamentalists now seek equal time for their views by initiating balanced treatment acts in state legislatures. Fundamentalists posit a new theory, "creation science,"⁵ which they believe scientifically explains how a supernatural force created life on earth in the recent past. They contend that since creationism and evolution both belong in the realm of science, both should be given balanced treatment in public elementary and secondary school instruction.⁶

Although creation-science has been vehemently attacked by scientists,⁷ creationists have initiated a flurry of legislative and judicial action and creationism has become an increasingly significant issue in education.

From 1980 to 1985, creationists introduced equal time legislation in nineteen states.⁸ One of those states was Louisiana, in which the 1981 Balanced Treatment for Creation-Science and Evolution in Public School Instruction Act⁹ gave rise to *Edwards v. Aguillard*.¹⁰

The Act prohibited the teaching of evolution in public schools unless equal instruction was given in creation-science. The United States Supreme Court held that the Act violated the establishment clause of the first amendment, which guarantees separation of church and state, because it lacked a clear secular purpose, as re-

Arkansas, 393 U.S. 97 (1968). See *infra* notes 28-33 and accompanying text.

5. For a more detailed discussion of creation-science, see *infra* notes 111-37 and accompanying text.

6. This Note does not cover the post-secondary school setting. A different standard of concern for sectarian influence applies in universities due to the greater knowledge and maturity of college students. See *Tilton v. Richardson*, 403 U.S. 672, 686 (1971) (finding college students less vulnerable to coercive aspects of religion courses).

7. The Council of The American Physical Society, The American Geological Institute, the National Academy of Sciences, and the National Association of Biology Teachers have all protested the teaching of creationism as science in public schools. *Mainstream Scientists Respond to Creationists*, PHYSICS TODAY 53 (Feb. 1982).

"To those who are trained in science, creationism seems like a bad dream, a sudden reliving of a nightmare, a renewed march of an army of the night risen to challenge free thought and enlightenment." Asimov, *The 'Threat' of Creationism*, N.Y. Times, June 14, 1981, § 6 (Magazine), at 90.

Creation-science has also been characterized as "forced imposition of religious doctrine, disguised as science, into the science textbooks." Mayer, Merrill, Ost, Stebbins & Welch, *Statements by Scientists in the California Textbook Dispute*, 34 AM. BIOLOGY TCHR. 411, 415 (1972). It has been further called the "smuggling of religious dogma into classrooms in a scientific Trojan horse." Mayer, *Creationism: A Masquerade*, 36 AM. BIOLOGY TCHR. 245, 246 (1974). See also *Scientists Confront Creationists* (L. Godfrey ed. 1983); D. NELKIN, *supra* note 1; D. FUTUYMA, SCIENCE ON TRIAL - THE CASE FOR EVOLUTION (1983). But see Leedes, *Monkeying Around With The Establishment Clause and Bashing Creation-Science*, 22 U. RICH. L. REV. 149 (1988). "I simply object to the twin presumptions that creation-scientists are all irrationally driven by a monolithic Christian fundamentalism, and that all creation-science courses are the same." *Id.* at 180.

8. Levit, *supra* note 3, at 212.

9. See *infra* note 75 and accompanying text.

10. 107 S. Ct. 2573 (1987).

quired by the first prong of the *Lemon* test.¹¹ The Court argued that the legislative history of the Act showed that the Act's purpose was to restructure the science curriculum to conform with a particular religious viewpoint, thus violating the establishment clause.

This Note first discusses the legal background of the creation-science/evolution debate in cases prior to *Edwards*. Next, it reviews the United States Supreme Court's decision in *Edwards* and analyzes the method used by the Court to strike down the Louisiana balanced treatment statute. Then, based on methodology used by the *Edwards* Court, the Note examines whether creation-science is religion or science and thus whether it violates the Constitution's establishment clause prohibition against advancement of religion in public schools. The author concludes that creation science is inherently religious and that it is highly unlikely balanced treatment acts will ever survive under the establishment clause of the first amendment. However, creationists may be able to argue their case under the free exercise clause.

II. LEGAL BACKGROUND OF CREATIONISM V. EVOLUTION IN PUBLIC SCHOOL CURRICULA

A. History of Creation-Science

Three large school districts in the country have adopted the policy that creationism be presented along with evolution in the science curriculum.¹² State textbook commissions in three states have added to the approved list of textbooks general or supplementary texts that present a model of creation.¹³ In many rural school districts, creationism is taught routinely, since that is the wish of the school board and the majority of the community.¹⁴

California has been a leading center of activity for the current creationist movement. The state's public school textbook sales account for about ten percent of the total United States market, and thus exert great leverage on textbook publishers throughout the na-

11. See *infra* notes 23-24 and accompanying text.

12. Dallas, Texas; Chicago, Illinois, and Atlanta, Georgia. D. NELKIN, *supra* note 1, at 94. Two states, Texas and California, compel presentation of evolution as theory rather than fact. Note, *Freedom of Religion and Science Instruction in Public Schools*, 87 YALE L.J. 515, 516-17 n.8 (1978).

13. Georgia, Mississippi and Indiana. D. NELKIN, *supra* note 1, at 94.

14. N.Y. Times, Mar. 7, 1982, § 4, at 9, col. 1 (midw. ed.). See also Comment, *Accommodating Religion in the Public Schools*, 59 NEB. L. REV. 425, 446 (1980) (two-thirds of Nebraska teachers polled present Biblical Creation in class).

tion.¹⁵ Two of the leading creationist organizations in the country are located in San Diego, California: The Institute for Creation Research (ICR), affiliated with the Christian Heritage College,¹⁶ and the Creation-Science Research Center (CSRC).¹⁷

ICR, CSRC, and other creationist organizations in California have had some successes. In 1979, they convinced the State Board of Education to recommend that evolution be taught as theory rather than scientific fact,¹⁸ and in 1981, the California Superior Court in Sacramento ordered the Board to disseminate that policy to all school districts and publishers.¹⁹

Generally, the states and local school boards have the authority to determine the curriculum taught in the public schools. The courts, however, may strike down state educational requirements when they conflict with constitutional rights.²⁰ Creationists have used both the

15. Moore, *Creationism in California*, 103 DAEDALUS 173, 175 (1974).

16. ICR is the research division of Christian Heritage College, founded in 1970. Through its Creation-Life Publishing Company, it is the leading publisher of creation-science material. The institute runs radio programs, conferences, workshops and expeditions to find geological evidence that the earth is young. ICR also publishes a monthly magazine, ACTS & FACTS, which contains technical articles and current creationist news, and the IMPACT SERIES, containing articles on science/creation. D. NELKIN, *supra* note 1, at 80-83.

The ICR president is Henry M. Morris, Ph.D.; its Vice President is Duane T. Gish, Ph.D.; and its Director of Curriculum Development and Head of the Science Education Department is Richard B. Bliss, Ed.D. All have published many books and articles concerning creationism. There are also six other scientist faculty members. Wendell R. Bird is a staff attorney. He is the author of the Yale article cited *supra* note 12, a drafter of the Arkansas balanced treatment act (*see infra* notes 54-74 and accompanying text) and also intervened for Louisiana as a Special Assistant Attorney General in *Aguillard v. Edwards*.

It was Morris who first proposed in 1961 the idea of equal time for creationism and evolution. Note, *Teaching the Theories of Evolution and Scientific Creationism in the Public Schools: The First Amendment Religion Clauses and Permissible Relief*, 15 J.L. REFORM 421, 424 (1982).

17. CSRC was founded in 1970 with the "primary goal of changing the manner in which evolution is taught in public schools." CSRC, CHRISTIANS CAN DO SOMETHING ABOUT EVOLUTION IN SCHOOLS - THE CONSTITUTION IS FOR CHRISTIANS TOO! (pamphlet on file with SAN DIEGO L. REV.).

Kelly Segraves is the Director of CSRC, and Robert E. Kofahl, Ph.D., is the Science Coordinator.

The main difference between ICR and CSRC is in their approach to the creation versus evolution issue in the public schools. CSRC is committed to legal action to force the change in public school curricula, while ICR prefers to use scientific evidence and arguments to persuade members of school boards, teachers, legislators and scientists to believe in creation. CSRC A HISTORY OF THE CREATION-SCIENCE RESEARCH CENTER: SOLVING THE CREATION/EVOLUTION PROBLEM IN PUBLIC SCHOOLS 2 [hereinafter A HISTORY OF THE CREATION-SCIENCE RESEARCH CENTER] (on file with SAN DIEGO L. REV.).

The split between ICR and CSRC occurred during the California textbook controversy. *See infra* notes 42-53 and accompanying text.

18. *See* D. NELKIN, *supra* note 1, at 113.

19. *Segraves v. California Bd. of Educ.*, No. 278978 (Super. Ct), Sacramento, (June 12, 1981).

20. *See, e.g., Epperson v. Arkansas*, 393 U.S. 97, 107 (1968).

establishment and free exercise religion clauses of the first amendment to attempt to reach their balanced treatment goals.²¹

The establishment clause, which guarantees separation of church and state, was the basis of the Court's decision in *Edwards* and other cases.²² The proper role of government under the establishment clause is neither to support nor undermine religion or a particular religious point of view, but rather to remain neutral. To insure this neutrality, state action must meet a three-part test, known as the *Lemon* test: first, the action must have a secular purpose; second, the action must not have as its principal or primary effect the advancement or inhibition of religion; and third, state action must not foster an excessive governmental entanglement with religion.²³ Unless all three prongs are met, the state action fails to pass under the Constitution.²⁴

Creationists argue that under the establishment clause the state has a religious purpose in teaching evolution.²⁵ They also argue that, even assuming evolution is not a religion, the motivation of evolution's proponents is to advance or inhibit some evolution-based

21. The religion clauses of the first amendment provide: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof." U.S. CONST. amend. I. Both clauses are binding on the states via the 14th amendment. *Everson v. Bd. of Educ.*, 330 U.S. 1 (1947).

22. See, e.g., *Epperson v. Arkansas*, 393 U.S. 97 (1968).

The free exercise clause is discussed *infra* notes 139-51 and accompanying text.

23. *Lemon v. Kurtzman*, 403 U.S. 602 (1971). The secular purpose test is one of legislative motivation. *Id.* at 612-13. Legislation prompted primarily by religious motivations violates the establishment clause and will not be upheld. Courts will ignore statutory statements of secular purpose where they are mere shams. Courts have looked beyond the legislature and focused on the intent of supporters of certain state actions. See *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255 (E.D. Ark. 1982) (the purpose of the fundamentalist sponsors of the bill was an important consideration), *infra* notes 59-74.

For the primary effects prong, state action may not have more than "a remote and incidental effect advantageous to religious institutions." *Committee for Pub. Educ. v. Nyquist*, 413 U.S. 756, 783-84 n.39 (1973). Even if a primary secular effect can be found, the state action is constitutionally barred if there remains any "direct and immediate effect" advancing or inhibiting religion. *Id.*

The prohibition against entanglement mandates that government not intrude pervasively into the religious arena, or vice versa. *Lemon*, 403 U.S. at 620.

24. *Id.*

25. According to the creationists, the religion promoted is "Secular Humanism." The term is used to describe the general absence from the school curricula (in this case, specifically evolution teachings) of organized religious expression, as well as the inclusion of various ideas allegedly inconsistent with certain religious beliefs. See Strossen, "Secular Humanism" and "Scientific Creationism": Proposed Standards for Reviewing Curricular Decisions Affecting Students' Religious Freedom, 47 OHIO ST. L.J. 333, 336 (1986).

religion.²⁶

On the other hand, many evolutionists, teachers, parents and courts argue that the deletion of evolution from a school's curriculum, at the instigation of individuals with religious objections to it, would itself violate the establishment clause. Further, there is debate concerning whether creation-science is indeed religion or science. Those who argue that creation-science is a religious theory contend that the teaching of it in public schools would violate the establishment clause because it advances religion.²⁷

B. Judicial Decisions Concerning the Teaching of Evolution

1. Statutory Prohibition on the Teaching of Evolution

In Arkansas, a statute adopted in 1928 prohibited the teaching of evolution in public schools.²⁸ For years, the official high school biology textbook in Little Rock, Arkansas, did not include a section on evolution. Finally, the school administration adopted a textbook containing an evolution chapter for the academic year 1965-66. In *Epperson v. Arkansas*,²⁹ Susan Epperson, a tenth-grade biology teacher, sought a declaration in the Chancery Court that the statute was void. She also sought an injunction prohibiting the state and Little Rock school officials from dismissing her for violation of the statute. The Chancery Court of Pulaski County ruled the statute a violation of the first amendment because it "tends to hinder the quest for knowledge, restrict the freedom to learn and restrain the freedom to teach."³⁰

On appeal, the Arkansas Supreme Court, in a two-sentence opinion, reversed, sustaining the statute as a legitimate exercise of the state's power to specify the curriculum in public schools.³¹

The United States Supreme Court, however, found the statute unconstitutional and a violation of the establishment clause. The Court held that governmental neutrality concerning religion is mandated by the first amendment and introduced a two-prong test for neutrality: if the purpose or primary effect of the state action either advances or inhibits religion, it is unconstitutional.³² The Court speculated that the motivation for the statute was to "suppress the

26. See, e.g., H. MORRIS, *THE TROUBLED WATERS OF EVOLUTION* 37-40 (1974).

27. The competing views concerning creationism as science or religion are more fully explored *infra*, notes 111-37 and accompanying text.

28. ARK. STAT. ANN. § 80-1627-28 (1960 Repl. Vol.).

29. 393 U.S. 97 (1968).

30. *Id.* at 100.

31. *Id.* at 101.

32. *Id.* at 109. This test was later expanded in *Lemon v. Kurtzman*, 403 U.S. 602 (1971), see *supra* notes 22-24 and accompanying text.

teaching of a theory which . . . denied the divine creation of man,"³³ thus failing the neutral purpose prong of the test. Accordingly, the prohibition of the teaching of evolution violates the first amendment.

2. *Claims for Equal Time*

In *Wright v. Houston Independent School District*,³⁴ students sought to enjoin the teaching of evolution not accompanied by discussion of other theories or origins or without critical analysis. The plaintiffs alleged that in teaching a theory inimical to the religious belief in creation, the school was burdening their free exercise rights. They further contended that the school was lending official support to the "religion of secularism," thus violating the establishment clause.³⁵ The students proposed either that evolution be eliminated from the curriculum or that equal time be granted to all theories regarding origins.

The district court noted that the Supreme Court in *Epperson* had already held unconstitutional the option of eliminating evolution from school curricula for the purpose of avoiding conflict with religious beliefs. The court also found the equal time proposal unworkable since it would be impossible to include every theory of origins in the school curricula and the court was not qualified to select among them. In addition, the court noted that an equal time requirement for origin theories might also warrant an equal time requirement for theories compatible with other religious beliefs, such as the Mormon belief in racial inequality or the Christian Science belief that health and disease are not governed by medical science.³⁶

The court concluded that the teaching of evolution did not inhibit plaintiffs' exercise of their religion or promote any other religion; the court noted that students had not claimed they had been denied the opportunity to challenge the presentation of evolution.³⁷

33. 393 U.S. at 109.

34. 366 F. Supp. 1208 (S.D. Tex. 1972), *aff'd per curiam*, 486 F.2d 137 (5th Cir. 1973), *cert. denied*, 417 U.S. 969 (1974).

35. *Id.* at 1209.

36. *Id.* at 1211 n.6.

37. *Id.* at 1210.

3. *Teaching Evolution as a Theory*

a. *Daniel v. Waters*³⁸

The Court of Appeals for the Sixth Circuit held unconstitutional a Tennessee statute that it described as “a 1974 version of the legislative effort to suppress the theory of evolution which produced the famous *Scopes* ‘monkey trial’ of 1925.”³⁹ The statute prohibited the use of textbooks presenting evolution unless they expressly stated that evolution was a theory and not a scientific fact. The statute also provided that any textbook presenting a theory of origins must give an equal amount of emphasis to other theories, including the Genesis account in the Bible.⁴⁰

The *Daniel* court held the statute to be facially unconstitutional because it clearly expressed a preferential position for the Biblical version of creation as opposed to any account of the development of man based on scientific research.⁴¹

b. *Segraves v. California Board of Education*⁴²

Although much responsibility for education in California is delegated to local school districts, the State Board of Education, whose members are appointed by the governor, has the responsibility of establishing overall educational policy and of approving textbooks used in elementary and high schools.⁴³

At the urging of mothers Nell Segraves⁴⁴ and Jean Sumerall, the Board in 1979 listed two short paragraphs in its Science Framework,⁴⁵ thus opening the door for creationism to be considered along with evolution in the science curriculum.⁴⁶ Creationist biology text-

38. 515 F.2d 485 (6th Cir. 1975).

39. *Id.* at 486-87. The Tennessee statute was TENN. CODE ANN. § 49-2008 (1974).

40. *Id.* at 487.

41. *Id.* at 489.

42. *Segraves v. California Bd. of Educ.*, No. 278978 (Super. Ct., Sacramento, June 12, 1981).

43. Moore, *supra* note 15, at 178.

44. Wife of Kelly Segraves, current Director of CSRC.

45. A 100-page document which explains what science is and how it shall be taught.

46. The statement was:

All scientific evidence to date concerning the origin of life implies at least a dualism or the necessity to use several theories to fully explain relationships While the Bible and other philosophical treatises also mention creation, science has independently postulated the various theories of creation. Therefore, creation in scientific terms is not a religious or philosophical belief. Also note that creation and evolutionary theories are not necessarily mutual exclusives. Some of the scientific data (e.g., the regular absence of transitional forms) may be best explained by a creation theory, while other data (e.g., transmutation of species) substantiate a process of evolution.

books were included in the list of state-approved books.⁴⁷

In 1972, the Board of Education, after a nationally publicized hearing, voted to treat evolution as a speculative theory and appointed a committee, made up of all creationists, to edit thirty textbooks to conform to the new standard. The committee replaced specific words in the textbooks which implied acceptance of evolution. For example, they deleted words such as "ancestors," "descendants," and "origins." They added qualifying phrases such as "according to one particular point of view," "the evidence is not clear, but," and "evidence that is often interpreted to mean." The committee prefaced each section discussing evolution with a statement indicating that "science has no way of knowing how life began."⁴⁸

Creationists began to lose their influence in 1974, when the state Board of Education initiated a new method of evaluating materials that included more civic organizations and lay groups on the textbook evaluation committee. Creation-science books were eliminated from the list.⁴⁹ In 1978, the Board, replaced with Governor Brown appointees, revised the Science Framework, deleted the two paragraphs and relegated all alternatives to evolution to philosophy and religion courses. In 1981, the CSRC sued the Board, claiming that the 1978 Framework asserted evolutionary theories dogmatically and violated the free exercise of religion.⁵⁰

In the suit that followed, *Segraves v. California Board of Education*,⁵¹ Judge Irving Perluss ordered the Board to disseminate to all school districts and textbook publishers the previous 1973 policy providing that evolution be taught as a theory, not scientific fact.⁵²

The CSRC, however, now claims that the Board has fulfilled the letter of the court order but has not implemented the policy by changing the content of science books. The Center intends to take the Board to court again.⁵³

D. NELKIN, *supra* note 1, at 110.

47. *Id.* at 111. Local school districts are not required to abide by the list but will lose state subsidies for textbooks chosen outside the list. *Id.* at 109.

48. *Id.* at 113-15.

49. *Id.* at 118. For more detailed information concerning the California textbook controversy, see Moore, *supra* note 15, at 175-84; D. NELKIN, *supra* note 1, at 107-19.

50. A HISTORY OF THE CREATION-SCIENCE RESEARCH CENTER, *supra* note 17, at 3.

51. *Segraves v. California Bd. of Educ.*, No. 278978 (Super. Ct., Sacramento, June 12, 1981).

52. *Id.* at 2.

53. A HISTORY OF THE CREATION-SCIENCE RESEARCH CENTER, *supra* note 17, at 5.

4. *Balanced Treatment*

On March 19, 1981, the governor of Arkansas, Frank White, signed into law Act 590, entitled the "Balanced Treatment for Creation-Science and Evolution in Science Act."⁵⁴ The Act required that public schools and textbooks give equal instruction in the theories of evolution and creation-science. A creationist advocate drafted the bill,⁵⁵ the legislation was debated in the Arkansas Senate for only a few minutes, no hearings were held concerning it in either house,⁵⁶ there was no consultation with any scientists or educators,⁵⁷ and Governor White, a born-again fundamentalist, stated he did not read the Act before signing it.⁵⁸

The American Civil Liberties Union filed suit, challenging the Act as an establishment of religion prohibited by the first amendment. *McLean v. Arkansas Board of Education*⁵⁹ was brought in the United States District Court of Judge William R. Overton, who held that Act 590 was unconstitutional because it violated the establishment clause.⁶⁰

The court, using the *Lemon* three-prong test of neutrality,⁶¹ found that Act 590 failed to meet the purpose test. After an extensive run-down of the legislative history of Act 590, the court concluded: "It was simply and purely an effort to introduce the Biblical version of creation into the public school curricula. The only inference which can be drawn from these circumstances is that the Act was passed with the specific purpose by the General Assembly of advancing religion."⁶²

However, the Act disclaimed any religious purpose.⁶³ The state of

54. The Act was codified as ARK. STAT. ANN. §§ 80-1663-70 (Supp. 1981).

55. Paul Ellwanger, president of a fundamentalist Christian group called Citizens for Fairness in Education, prepared a model act requiring the teaching of creationism along with evolution, adapting a resolution proposed by Wendell Bird, attorney for ICR. Ellwanger's model act was picked up by State Senator James L. Holsted, a self-proclaimed born-again Christian Fundamentalist, who introduced the model act in the Arkansas Senate, where it was enacted into law as Act 590 without amendment or modification. See Note, *Evolution and Creationism in the Public Schools*, 9 J. CONTEM. L. 81, 94 (1983); D. NELKIN, *supra* note 1, at 138-39; *McLean v. Arkansas*, 529 F. Supp. 1255, 1261-63 (E.D. Ark. 1982).

56. Levit, *supra* note 3, at 214.

57. *McLean*, 529 F. Supp. at 1262.

58. M. LAFOLLETTE, CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE 1 (1983).

59. 529 F. Supp. 1255 (E.D. Ark. 1982).

60. *Id.* at 1272.

61. See *supra* note 23 and accompanying text.

62. *McLean*, 529 F. Supp. at 1264.

63. The Act lists the purposes of "protecting academic freedom for students' differing values and beliefs; ensuring neutrality toward students' diverse religious convictions; . . . preventing discrimination against students on the basis of their personal beliefs concerning creation and evolution; and assisting students in their search for truth. This Legislature does not have the purpose of causing instruction in religious concepts or mak-

Arkansas had argued that courts should accord great deference to legislative statements of purpose in establishment clause cases, but Overton pointed out that the courts are not bound by legislative statements of purpose and that "courts may consider evidence of the historical context of the Act, . . . the specific sequence of events leading up to passage of the Act, departures from normal procedural sequences . . . and contemporaneous statements of the legislative sponsor."⁶⁴ Accordingly, Overton concluded that the events surrounding the passage of Act 590, the pronouncements from Ellwanger,⁶⁵ the source of the legislation, and the lack of any debate made it clear that the statement of purpose had little or no support in fact.

Since an adverse decision on any one of the *Lemon* factors can invalidate a statute, the court's holding that the statute was enacted for a sectarian purpose was sufficient to strike it down. Nevertheless, the court next examined whether the Act's primary effect advanced religion. Overton found the Act's definition of creation-science, which included a theory of the sudden creation of man and the subsequent occurrence of a worldwide flood, "has as its unmentioned reference the first 11 chapters of the Book of Genesis."⁶⁶ Overton further found that "[t]he ideas of [the Act] are not merely similar to the literal interpretation of Genesis; they are identical and parallel to no other story of creation."⁶⁷

The court then recognized that although advancement of religion was a major effect of the Act, to be invalid under the *Lemon* test, religion must be the primary effect of the statute. Thus, the next step in the analysis was whether creationism is scientific. The court detailed the characteristics of science: "(1) It is guided by natural law; (2) It has to be explanatory by reference to natural law; (3) It is testable against the empirical world; (4) Its conclusions are tentative . . . ; and (5) It is falsifiable"⁶⁸

Overton found creation scientists employed an unscientific ap-

ing an establishment of religion." ARK. STAT. ANN. § 80-1668 (Supp. 1981).

64. *McLean*, 529 F. Supp. at 1263-64 (citing *Village of Arlington Heights v. Metropolitan Housing Corp.*, 429 U.S. 252 (1977), and *Fed. Energy Admin. v. Algonquin SNG, Inc.*, 426 U.S. 548, 564 (1976)).

65. The court stated that Ellwanger's "correspondence on the subject shows an awareness that Act 590 is a religious crusade. . . ." *McLean*, 529 F. Supp. at 1261. Further, the court found that although Ellwanger "does not believe creation science is a science, his deposition reflected a conscious strategy to mask religion as science." *Id.*

66. *Id.* at 1264-65.

67. *Id.* at 1265.

68. *Id.* at 1267.

proach. The proof-support of creationism consisted mainly of attempts to discredit evolution rather than to establish the validity of creationism as a scientific theory.⁶⁹ No recognized scientific journal had ever published an article espousing creation-science theory.⁷⁰ The court also found that creationism was not explainable by reference to natural law, was non-testable and not falsifiable. Overton thus concluded that “[s]ince creation science is not science, the conclusion is inescapable that the *only* real effect of Act 590 is the advancement of religion.”⁷¹

In an abbreviated discussion of the third prong of the *Lemon* test, Overton held that state entanglement with religion would occur under the Act. The state would have to monitor textbooks and classrooms to make sure they did not employ religious references, thereby involving administrators in making religious judgments.⁷²

Finally, defendants urged that creationism be taught in public schools because a majority of Americans thought it should be taught when evolution was taught.⁷³ The court rejected a majority rule theory of the first amendment, stating that “[t]he application and content of First Amendment principles are not determined by public opinion polls or by a majority vote.”⁷⁴ The court granted an injunction permanently prohibiting enforcement of Act 590. Repeal of the law, however, did not stop creationists from attempting another balanced treatment act in Louisiana.

III. *Edwards v. Aguillard*

A. *Facts and Procedural Background*

In 1981, Louisiana enacted the “Balanced Treatment for Creation-Science and Evolution in Public School Instruction” Act (Creationism Act), which forbade the teaching of evolution in public schools absent equal instruction in the teaching of creation-science. Neither course of instruction was required to be taught, but if either was, both had to be. The Act defined creation-science and evolution as “the scientific evidences for [creation and evolution] and inferences from those scientific evidences.”⁷⁵

Parents of children attending Louisiana public schools, teachers

69. *Id.* at 1269.

70. *Id.* at 1268.

71. *Id.* at 1272 (emphasis in original).

72. *Id.*

73. *Id.* at 1274. This assessment of public opinion is supported by a 1981 national public survey conducted by NBC News: 76 percent of the American people think public schools should teach both evolution and the Biblical theory of creation. D. NELKIN, *supra* note 1, at 145-46.

74. *McLean*, 529 F. Supp. at 1274.

75. LA. REV. STAT. ANN. §§ 17:286.1-17:286.7 (West 1982).

and religious leaders challenged the constitutionality of the Act in district court as facially invalid because it violated the establishment clause, and made a motion for summary judgment. The district court granted the motion, holding there can be no valid secular reason for prohibiting the teaching of evolution.⁷⁶

The court of appeals affirmed.⁷⁷ The Fifth Circuit Appeals Court panel ruled that the statute violated the establishment clause because its purpose was to promote religious beliefs. As the *McLean* court had done in invalidating Arkansas' balanced treatment act, the *Edwards* panel based its conclusion that the statute had a religious purpose in part upon the statute's historical background, and in part upon the court's view that creation-science is essentially religious.⁷⁸ The panel observed that the statute's avowed purpose of promoting academic freedom was inconsistent with requiring, upon risk of sanction, the teaching of creation-science whenever evolution is taught.⁷⁹

The panel further found that the legislature's actual intent was "to discredit evolution by counterbalancing its teaching at every turn with the teaching of creationism, a religious belief."⁸⁰ The panel also reasoned that if the legislature had genuinely sought to advance creation-science as science, it would have required the inclusion of creation-science in the curriculum regardless of whether evolution was also included.⁸¹ The Court of Appeals denied the state's petition for a rehearing en banc by an eight to seven vote.⁸² The United States Supreme Court noted probable jurisdiction to review the decision of the Fifth Circuit.⁸³

B. The Decision

In its seven-two decision, written by Justice Brennan, the Supreme Court held that the Act was facially invalid as violative of the establishment clause of the first amendment because it lacked a clear secular purpose as required by the first prong of the *Lemon* test.⁸⁴ The

76. *Aguillard v. Treen*, 634 F. Supp. 426 (E.D. La. 1985).

77. *Aguillard v. Edwards*, 765 F.2d 1251 (5th Cir. 1985).

78. *Id.* at 1256.

79. *Id.* at 1257. "Academic freedom embodies the principle that individual instructors are at liberty to teach that which they deem to be appropriate in the exercise of their professional judgment." *Id.*

80. *Id.*

81. *Id.*

82. *Aguillard v. Edwards*, 778 F.2d 225 (5th Cir. 1985) (en banc).

83. *Edwards v. Aguillard*, 476 U.S. 1103 (1986).

84. *Edwards v. Aguillard*, 107 S. Ct. 2573, 2578 (1987) (quoting *Lynch v. Donnelly*, 465 U.S. 668, 690 (1984) (O'Connor, J., concurring)). *Lynch* represents a clarified

purpose prong asks whether the government's actual purpose is to endorse or disapprove of religion.

The state argued that requiring balanced treatment of both theories advanced the state's secular purpose of protecting academic freedom. But the Court declared that requiring schools to teach creation-science with evolution does not advance academic freedom because it removes the flexibility of teachers to teach evolution without also teaching creation-science.⁸⁵ Thus, the Act did not accord teachers any more latitude than they previously possessed to present differing theories of the origin of life.

The Court noted further that if the legislature's purpose was to maximize the comprehensiveness of science instruction, it would have encouraged the teaching of all scientific theories about the origins of humankind. But under the Act's requirements, teachers who were once free to teach any facet of that subject were no longer able to do so.⁸⁶

In addition, Brennan observed that the Act evinced a discriminatory preference in favor of the teaching of creation-science and against instruction in the theory of evolution. For example, the Act required that curricula be developed for creation-science but said nothing of comparable guides for evolution; similarly, the Act supplied research services for creation-science but not for evolution.⁸⁷

Brennan explained that while a state's articulated secular purpose is normally accorded deference, that purpose must be "sincere and not a sham."⁸⁸ Relying on the Act's legislative history, Brennan determined that the words "creation science" refer to a religious belief and "[t]he preeminent purpose of the Louisiana legislature was clearly to advance the religious viewpoint that a supernatural being created humankind."⁸⁹ Therefore, Brennan argued, the legislative history documents that the purpose of the Act was to restructure the science curriculum to conform with a particular religious viewpoint,⁹⁰ thus violating the establishment clause. Since the Louisiana

version of the *Lemon* test.

85. *Edwards*, 107 S. Ct. at 2579.

86. *Id.* at 2580.

87. *Id.* at 2579-80.

88. *Id.* at 2579.

89. *Id.* at 2581. Senator Keith's leading expert on creation science, Edward Boudreaux, testified at the legislative hearings that the theory of creation-science included belief in the existence of a supernatural creator. *Id.* Boudreaux also stated that "[c]reation . . . requires the direct involvement of a supernatural intelligence." *Id.* at n.12.

90. *Id.* at 2582. The sponsor of the Act, Senator Keith, explained during legislative hearings that his disdain for evolution resulted from the support that evolution supplied views contrary to his own religious beliefs. *Id.* Senator Saunders, another supporter of the bill, noted that the bill was amended so teachers could refer to the Bible and other religious texts to support the creation-science theory. *Id.* at 2581-82 n.13.

The author of the model bill, Paul Ellwanger, president of the fundamentalist Chris-

Act violated the purpose prong of the *Lemon* test, the Court held that no consideration of the second or third *Lemon* criteria was necessary.⁹¹

Justice Powell joined the Brennan opinion but wrote a separate concurrence, joined by Justice O'Connor, stressing that the Court's opinion did not diminish the traditionally broad discretion accorded school officials in the selection of the school curriculum. Powell further emphasized that in order to invalidate a state statute, the religious purpose must be the primary motivation, rather than one of the many reasons for the challenged statute.⁹² Powell concluded that religious belief was the Act's "reason for existence,"⁹³ and that the Act's purpose was to advance a particular religious belief.⁹⁴

Justice White concurred in the judgment only, asserting that the Court should defer to the court of appeals' interpretation of the meaning of the statute as long as it is "a rational construction of the statute."⁹⁵

tian group called Citizens for Fairness in Education, sent a copy of the bill to Senator Keith, stating, "I view this whole battle as one between God and anti-God forces" *Id.* at 2582 n.14. See also Strossen, *supra* note 25, at 402 n.336.

Boudreaux testified at the legislative hearings that the recognized creation scientists in the United States, who "numbe[r] something like a thousand [and] who hold doctorate and masters degrees in all areas of science," are affiliated with either or both the Institute for Creation Research (ICR) and the Creation Research Society (CRS).

ICR, located in San Diego, California, was established to address the "urgent need for our nation to return to belief in a personal, omnipotent Creator who has a purpose for His creation and to whom all people must eventually give account." A goal of ICR is "a revival of belief in special creation as the true explanation of the origin of the world." ICR is currently working on the "development of new methods for teaching scientific creationism in public schools."

The CRS is located in Ann Arbor, Michigan. A member must subscribe to the following statement of belief: "The Bible is the written word of God, and because it is inspired throughout, all of its assertions are historically and scientifically true." To study creation science at the CRS, a member must accept "that the account of origins in Genesis is a factual presentation of simple historical truth." *Edwards*, 107 S.Ct. at 2587 (Powell, J., concurring).

For further information on ICR, see *supra* note 16 and accompanying text.

91. *Id.* at 2578.

92. *Id.* at 2585 (Powell, J., concurring).

93. *Id.* at 2588.

94. *Id.* at 2590. "That the statute is limited to the scientific evidences supporting the theory does not render its purpose secular," Powell stated. "Whatever the academic merit of particular subjects or theories, the Establishment Clause limits the discretion of state officials to pick and choose among them for the purpose of promoting a particular religious belief." *Id.* at 2588.

95. *Id.* at 2591 (White, J., concurring).

C. *The Dissent*

In a lengthy dissent joined by Chief Justice Rehnquist, Justice Scalia criticized the Court for rejecting the “sincerity” of the Louisiana legislators. Scalia reasoned that after seven hearings and several months of study, the legislature approved the Act, specifically articulated the secular purpose, and was well aware of the potential establishment clause problems. Scalia accused the Court of holding that the legislature “knowingly violated their oaths [to support the Constitution] and then lied about it.”⁹⁶

Scalia argued that the Act’s requirements that curriculum guides be developed and research services supplied for creation-science but not for evolution did not demonstrate a discriminatory preference for the teaching of creation-science, as the Court stated.⁹⁷

Scalia further argued, contrary to the majority’s position, that the “legislative history [gave] ample evidence of the sincerity of the . . . Act’s articulated [secular] purpose.”⁹⁸ He pointed out that many witnesses urged the legislators to support the Act so students would not be “indoctrinated but would instead be free to decide for themselves, based upon a fair presentation of the scientific evidence, about the origin of life.”⁹⁹ Scalia also remarked that the evidence “include[d] ample uncontradicted testimony that ‘creation science’ is a body of scientific knowledge.”¹⁰⁰ Scalia pointed out that even if a

96. *Id.* at 2592 (Scalia, J., dissenting).

97.

In light of the unavailability of works on creation science suitable for classroom use . . . and the existence of ample materials on evolution, it was entirely reasonable for the Legislature to conclude that science teachers attempting to implement the Act would need a curriculum guide on creation science, but not on evolution. . . .

Id. at 2602.

98. *Id.* at 2603.

99. *Id.* An example of witnesses’ statements include: “A student cannot [make an intelligent decision about the origin of life] unless he is well informed about both [evolution and creation-science].” (Morris); “We are asking very simply [that] . . . creationism [be presented] alongside . . . evolution and let people make their own mind[s] up.” (Sanderford); “The bill would require teachers to live up to their ‘obligation to present all theories’ and thereby enable ‘students to make judgments themselves.’” (Young); “I am not interested in teaching religion in schools . . . I am interested in the truth and [students] having the opportunity to hear more than one side.” (Kaliwoda); “The students have a right to know the scientific evidences which suppor[t] that alternative.” (Reiboldt). *Id.*

100. *Id.* at 2604. Appellees’ motion for summary judgment rested on the plain language of the Act, the legislative history, the specific sequence of acts leading to the passage of the Act, and correspondence between the Act’s legislative sponsor and key witnesses. No affidavits were submitted, nor were any required, to negate the state’s claims that creation-science is a true scientific theory. *Id.* at 2583 & n.16.

“Perhaps what the Louisiana Legislature has done is unconstitutional because there is no such [scientific] evidence [against evolution], and the scheme they have established will amount to no more than a presentation of the Book of Genesis. But we cannot say that on evidence before us in this summary judgment context” *Id.* at 2604 (em-

majority of the legislature voted for the Act in order to foster fundamentalist religious beliefs (rather than merely eliminate discrimination against), that would not suffice to invalidate the Act, as long as there was, as in this case, a genuine secular purpose as well.¹⁰¹

Scalia concluded by urging abandonment of *Lemon's* purpose test, calling legislative histories "contrived and sanitized."¹⁰² Under the *Lemon* purpose test, while it may be possible to discern the formal motivation of a statute where it is expressly stated, discerning the subjective motivation of those enacting the statute, Scalia noted, is almost always an impossible task.¹⁰³ Also difficult is deciding where to look for an individual legislator's purpose: in a particular legislature's pre-enactment floor or committee statement, in a staff-prepared committee report, in a post-enactment floor statement, or in media reports of legislative bargaining.¹⁰⁴ And how many legislators must have the invalidating intent?¹⁰⁵ Determining the subjective in-

phasis in original).

Appellants submitted to the court affidavits from two scientists, two theologians and an education administrator that alleged that creation-science was a scientific theory. However, the majority held that the post-enactment testimony of outside experts is of little use in determining the Louisiana legislature's purpose in enacting the statute and that none of the persons making the affidavits participated in the enactment of the law. *Id.* at 2583-84.

101. *Id.* at 2604.

102. *Id.* at 2606.

103. *Id.* at 2605.

[A] particular legislator need not have voted for the Act either because he wanted to foster religion or because he wanted to improve education. He may have thought the bill would provide jobs for his district, or may have wanted to make amends with a faction of his party he had alienated on another vote, or he may have been a close friend of the bill's sponsor, or he may have been repaying a favor he owed the Majority Leader, or he may have hoped the Governor would appreciate his vote and make a fundraising appearance for him, or he may have been pressured to vote for a bill he disliked by a wealthy contributor or by a flood of constituent mail, or he may have been seeking publicity, or he may have been reluctant to hurt the feelings of a loyal staff member who worked on the bill, or he may have been settling an old score with a legislator who opposed the bill, or he may have been mad at his wife who opposed the bill, or he may have been intoxicated and utterly unmotivated when the vote was called, or he may have accidentally voted "yes" instead of "no," or, of course, he may have had (and very likely did have) a combination of some of the above and many other motivations. To look for *the sole purpose* of even a single legislator is probably to look for something that does not exist.

Id. at 2605-06 (emphasis in original).

104. *Id.* at 2606. "All of these sources . . . are eminently manipulable. Legislative histories can be contrived and sanitized, favorable media coverage orchestrated, and post-enactment recollections conveniently distorted." *Id.*

105. *Id.*

If a state senate approves a bill by a vote of 26 to 25, and only one of the 26 intended solely to advance religion, is the law constitutional? What if 13 of the

tent of legislators is a "perilous enterprise," especially for legislators who must assess the constitutional validity of proposed legislation, "not on the basis of what the legislation contains, nor even on the basis of what they themselves intend, but on the basis of what *others* have in mind."¹⁰⁶ *Lemon's* purpose prong has no basis in the language or history of the establishment clause and thus, Scalia stated, should be abandoned.¹⁰⁷

D. Analysis

Based on the Louisiana Act's legislative history - including the hearing testimony of witnesses, correspondence between Senator Keith and key witnesses, and the goals of creation-science centers to promote a religious belief - it appears that the religious purpose of the Act predominated any alleged secular purpose the legislature might have had. Therefore, *Edwards* was correctly decided by the Court.

However, the *Lemon* test purpose prong does have problems, as pointed out by both Justice Scalia in his dissent and numerous other commentators.¹⁰⁸ Could the Court arrive at the legislature's intent or purpose in passing the Act solely from Senator Keith's pronouncements or those of key witnesses without really knowing the subjective reasons of the majority of the legislators who voted for the bill?

It is helpful to analyze *Edwards* based on the second prong of the establishment clause test - whether the primary effect of the statute either advances or inhibits religion¹⁰⁹ - to determine whether the re-

26 had that intent? What if three of the 26 had the impermissible intent, but three of the 25 voting against the bill were motivated by religious hostility or were simply attempting to 'balance' the votes of their impermissibly motivated colleagues?

Id.

106. *Id.* at 2607.

107. *Id.* "It is . . . far from an inevitable reading of the Establishment Clause that it forbids all governmental action intended to advance religion . . ." *Id.*

108. Schedler, *The Constitutionality of Christmas Programs in Public Schools - Should the U.S. Supreme Court Modify Its Interpretation of the Establishment Clause?* 11 S. ILL. UNIV. L.J. 1233 (1987); Loewy, *Rethinking Government Neutrality Towards Religion Under the Establishment Clause: The Untapped Potential of Justice O'Connor's Insight*, 64 N.C.L. REV. 1049 (1986); Simpson, *Lemon Reconstituted: Justice O'Connor's Proposed Modifications of the Lemon Test for Establishment Clause Violations*, 1986 B.Y.U. L. REV. 465 (1986); Note, *Wallace v. Jaffree: The Lemon Test Sweetened*, 22 HOUS. L. REV. 1273 (1985); Bruschi, *Praying for Direction: The Establishment Clause and the Supreme Court*, 10 NOVA L.J. 217 (1985); Cox, *The Lemon Test Soured: The Supreme Court's New Establishment Clause Analysis*, 37 VAND. L. REV. 1175 (1984).

109. Religion has not been explicitly defined by the United States Supreme Court in either free exercise or establishment clause cases. Several commentators have attempted to define religion for purposes of the religion clauses. See, e.g., Pepper & Reynolds, *Yoder and Beyond: Alternatives for the Free Exercise Clause*, 1981 UTAH L. REV. 309, 355-64; Comment, *Teaching Transcendental Meditation in Public Schools: Defin-*

sult in the instant case would be the same. To make this determination would require a definitive ruling on whether creation-science is a religion or a scientific doctrine. If creation-science is actually a religious wolf dressed in sheep's clothing, the effect of a statute mandating its inclusion in public school curricula would be religious and thus a violation of the establishment clause. If creation-science is found to be a bona fide science which merely coincides with certain religious beliefs, such a statute would not have the effect of promoting religious beliefs and could survive a first amendment establishment clause challenge under the second prong of *Lemon*.¹¹⁰

IV. THE EFFECT OF CREATIONISM - IS CREATIONISM RELIGION OR SCIENCE?

A. *The Basic Tenets of Creation-Science*

Scientific creationism purports to stand independent of biblical reference. Biblical Creationism, based on a literal reading of Genesis, the First Book of the Old Testament, teaches that God supernaturally created the earth and life in six days *ex nihilo* (out of nothing). This spontaneous creation produced the first humans, Adam and Eve, and all other life forms on earth today. Biblical Creationists also believe God sent a worldwide flood destroying all mankind except Noah and his family and that the elapsed time from the Creation to the present measures only in the thousands of years.¹¹¹

ing Religion for Establishment Purposes, 16 SAN DIEGO L. REV. 325, 340 (1979).

The elements common to most of these definitions include claims of immutable, absolute truths, belief in a transcendent reality, institutionalization and symbolic trappings.

Fundamentalism would qualify under the above religious standards. Fundamentalists are theistic, propound absolute truths, believe in a transcendent reality and are well-organized.

But see Weiss, *Privilege, Posture and Protection - "Religion" in the Law*, 73 YALE L.J. 593, 604 (1964) (any attempt by a court to define religion "would seem to violate religious freedom in that it would dictate to religions, present and future, what they must be.").

110. It is acknowledged that a court could still conclude that the inclusion of creation-science as science doctrine in the curricula had the effect of conveying governmental approval or disapproval of arguably religious beliefs. A court could conclude that the coincidence between scientific creationism and certain religious beliefs is sufficient enough to render the statute's effect illicit. *See* Strossen, *supra* note 25, at 373 n.217 & 404 n.347. However, such a conclusion would not be as foregone as if creation-science was found to be solely religious.

111. *See* Genesis 1:1-8:22. Creationist religions include the Church of Christ, Independent Baptists, Jehovah's Witnesses, Orthodox Jews, many Lutherans and Pentecostals, and some Mormons, Roman Catholics and Southern Baptists. Note, *supra* note 12, at 519-20.

In contrast, creation-science makes no mention of God per se or other biblical characters, and proposes that all matter and life was created about 6,000 years ago by a Creator, that there has been little or no change in life forms since that time, and that man and apes enjoy a separate ancestry. It also proposes the theory of "catastrophism" (a catastrophic worldwide flood), which formed nearly all the geologic features of the earth.¹¹²

The theory of evolution, as opposed to creation-science, basically postulates that the age of the earth is about 4.6 billion years,¹¹³ that all living things originated from a single living source which rose from inanimate matter, and that the origin of each living thing from an ancestral form occurred by slow, gradual change.¹¹⁴

Three of the main arguments creationists expound to support the scientific nature of creationism and to attack evolution are (1) the gaps in the fossil record, (2) the second law of thermodynamics, and (3) the age of the earth.¹¹⁵ These arguments are simplistically summarized below.

1. *Fossil Record Gaps*

Creationists claim that the transitional forms of life by evolution are not found in the fossil record. Instead, life appears abruptly and in complex forms. If evolution were the correct theory, fossils of more and more simple forms of life should be found in progressively earlier strata of sedimentary rock.¹¹⁶ Also, creationists claim that systematic gaps appear in the fossil record between various species. If evolution is correct, transitional forms of life representing the branching of two or more species from a single ancestral life form should be found. For example, if fish evolved into amphibia, as evolutionists believe, transitional forms showing the gradual transition of fins into feet and legs would be expected. Yet no transitional form has been found.¹¹⁷

Undeniably, the fossil record has provided disappointingly few gradual series, evolutionists respond; the origin of many groups are

112. Note, *supra* note 16, at 423-24 n.15; Asimov, *supra* note 7, at 90. See also Cole & Scott, *Creation-Science and Scientific Research*, 63 PHI DELTA KAPPAN 557 (1982).

113. Cole & Scott, *supra* note 112, at 557.

114. D. NELKIN, *supra* note 1, at 74.

115. See Cloud, "Scientific Creationism" - A New Inquisition Brewing?, THE HUMANIST 6, 12-14 (Jan.-Feb. 1977).

116. D. GISH, EVOLUTION - THE FOSSILS SAY NO! 67-70 (1978); Gish, Bliss & Bird, *Summary of Scientific Evidence for Creation*, IMPACT SERIES NOS. 95-96, at iii (1981) [hereinafter IMPACT SERIES NOS. 95-96] (on file with SAN DIEGO L. REV.). The IMPACT SERIES is published by ICR.

117. D. GISH, *supra* note 116, at 78-83; IMPACT SERIES NOS. 95-96, *supra* note 116, at iii.

still not documented at all.¹¹⁸ But intermediate forms are not lacking. One example is Archaeopteryx, the first bird, a link between reptiles and birds. Creationist Duane T. Gish insists that this is not an intermediate because it had wings and feathers and flew. "It was not a half-way bird, it *was* a bird."¹¹⁹ However, the fossil also had reptilian features - teeth, claws on its wings - and is considered an intermediate because it has the exact characteristics that the ancestors of the birds must have had if they descended from reptiles.¹²⁰ Furthermore, there is an abundance of fossil evidence for the transition from reptiles to mammals, as well as links between amphibians and reptiles, and evidence of the evolution of horses.¹²¹

2. *Second Law of Thermodynamics*

Creationists also claim that the second law of thermodynamics, which states there can be no spontaneous buildup of the complex from the simple,¹²² is the "most devastating and conclusive argument against evolution"¹²³ and demonstrates the evolutionary process to be impossible. Since by the evolutionary process, complex forms of life evolve from simple forms, random particles organize themselves into complex chemicals and finally to sophisticated living organisms. That process defies the second law, argue creationists.¹²⁴

Evolutionists argue that the major defect in the creationist theory is that energy increases in a closed system and that the earth is not closed with respect to energy. The energy from the sun builds up the complexity of the system. The second law applies only to the universe as a whole, or to such parts of it as may exist separately as truly closed systems.¹²⁵ Evolution can proceed and build up the complex from the simple without violating the second law as long as the sun delivers energy to the earth at a faster rate than evolution. If the sun were to cease shining, evolution would stop and so, eventually, would life.¹²⁶

118. D. FUTUYMA, *supra* note 7, at 190-91. Gaps do "appear to exist and they are puzzling. . . ." Cloud, *supra* note 115, at 12.

119. D. GISH, *supra* note 116, at 84. (emphasis in original).

120. D. FUTUYMA, *supra* note 7, at 188.

121. *Id.* at 190.

122. The second law of thermodynamics states that all spontaneous change is in the direction of increasing disorder. Asimov, *supra* note 7, at 94.

123. Morris, *Entropy and Open Systems*, IMPACT SERIES NO. 40, at i (1976).

124. Morris, *Thermodynamics and the Origin of Life*, IMPACT SERIES NO. 57, at i (1978) (on file with SAN DIEGO L. REV.); Morris, *supra* note 123.

125. Cloud, *supra* note 115, at 14.

126. Asimov, *supra* note 7, at 99.

3. *Earth's Age*

A third creationist claim is that geochronologists are mistaken about the great age of the earth. Creationists deny the evidence from radiometric dating methods¹²⁷ because these techniques are based on assumptions that no uranium or lead has been lost through the years and that the rate of decay has remained constant over time. Alternate creationist dating methods suggest the age of the earth to be about 10,000 years.¹²⁸

Evolutionists deny that radioactive decay has not been constant. The same processes of atomic change that result in radioactive decay are those used to build atomic bombs and nuclear reactors today and are arguably also those responsible for the evolution of the elements that occurred when the "big bang"¹²⁹ formed the universe about 14 billion years ago.¹³⁰

B. *Refutation of Creation-Science*

Evolutionists readily admit that evolution is not an airtight, completely provable scientific fact.

To an extent, the creationists are right here: The details of evolution are not perfectly known.

The details of evolutionary theory are in dispute precisely because scientists are not devotees of blind faith and dogmatism.

However much scientists argue their differing beliefs in details of evolutionary theory . . . they firmly accept the evolutionary process itself.¹³¹

Evolutionists point out that in the massive body of scientific literature, there is no evidence to support creationists' claims. None of the accepted scientific journals have ever published a creationist article.¹³²

Evolutionists also argue that creation-science has none of the ele-

127. Radiometric dating involves calculating the age of earth materials (such as rock) by measuring the decay of radioactive elements. D. FUTUYMA, *supra* note 7, at 70-71.

128. IMPACT SERIES NOS. 95-96, *supra* note 116, at vi.

129. The big bang theory states that an explosion of super-dense matter "created" elements and sent stars hurtling in all directions into space. D. FUTUYMA, *supra* note 7, at 72.

130. *Id.* at 71. The scientific inferences from this data rest on the principle of uniformitarianism, the belief that past processes were the same as present ones. *Id.* at 182. It is conceivable that atoms have not always decayed at the same rates they do now, just as it is possible that hydrogen and oxygen haven't always reacted to form water. If scientists reject the principle of uniformitarianism, they can no longer do science. *Id.* at 171.

131. Asimov, *supra* note 7, at 94.

132. McLean, 529 F. Supp. at 1268. See also Cole & Scott, *supra* note 112. In a literature search of 4,000 science journals from January 1978 through October 1981, no articles regarding scientific evidence for creationist concepts were found.

ments of true scientific theory. In *McLean v. Arkansas*, the court listed the essential characteristics of science.¹³³ At the core of many evolutionists' objections to creationist arguments is that while theories in science are falsifiable, creationist beliefs are not.¹³⁴ Creationists search nature for evidence for conclusions they have already accepted; evolutionists use observations and experiments on natural phenomena to help them reach their conclusions.¹³⁵ Thus, creationists have the "answers," taken from the literal wording of the Book of Genesis, before they begin research, and seek only to substantiate their views, not to explain the unknown.

Evolutionists argue that to create some semblance of science out of what is essentially religion, creationists have distorted and twisted evolutionary data in an effort to shore up creationism as a scientific theory.¹³⁶ They contend that creation-science does not promote scientific understanding; it serves only to fortify the literal message of Genesis.

Even if there was some valid scientific basis to creationism, evolutionists argue that creation-science unavoidably implies biblical personages and explanations. For example, even though the creation-science theory of catastrophism does not refer explicitly to Noah and his Ark, the biblical story is clearly suggested. The creation-science account states that human beings and animals could have survived the flood only by riding it out in a watertight vessel.¹³⁷ Any public school student with the least exposure to the story of Noah would recognize the parallel. Thus, the actual effect of the lesson, under the second prong of the *Lemon* test, may be religious.

Further, creation-science, even absent all biblical references, relies on the existence of a creator. Deleting such references to a creator would upset the entire bottom line of creation-science — that it was a creator who created life as we know it in six days. Since the existence of a creator is beyond natural law, creation-science falls more within the spectrum of religion.

It is unlikely that creationists will ever be successful with a "creationism as science" approach under the establishment clause. They

133. 529 F. Supp. 1255 (E.D. Ark. 1982). See *supra* note 68 and accompanying text.

134. *Mainstream Scientists Respond to Creationists*, *supra* note 7, at 55.

135. Moore, *supra* note 15, at 173.

136. D. FUTUYMA, *supra* note 7, at 178.

137. See Note, *supra* note 16, at 453 n.157 (quoting from the public school textbook edition of SCIENTIFIC CREATIONISM 117 (H. Morris ed., general ed. 1974)).

cannot survive the *Lemon* test for all the reasons stated above.¹³⁸ However, in some cases, the free exercise clause of the first amendment may be available to creationists.

V. THE FREE EXERCISE CLAUSE

The free exercise clause prohibits the government from purposefully interfering with religious beliefs and practices.¹³⁹ Therefore, the state cannot intentionally restrain public school students in their religious beliefs.¹⁴⁰ Such restraint would unconstitutionally burden the students' right to free exercise of religion.

To initiate a free exercise claim, the student or parent must show that the belief burdened by the coercive state action was religious. The state must then prove that the coercive burden was outweighed by a compelling state interest, and that there are no less burdensome means of achieving that interest. This is known as the *Yoder* test.¹⁴¹

Proponents of balanced treatment legislation argue that the burden placed upon children's rights to free exercise requires equal treatment in the teaching of origins. The creationists contend that instruction in evolution alone, coupled with peer pressure, undermines religious convictions of students, compels statements contrary to their religion (as when they are asked to recite in class or answer test questions) and also interferes with parents' efforts to instill religious convictions in their children. Further, this burden on religion cannot be justified by a compelling state interest. Therefore, the teaching of creation-science, as well as evolution, would be a constitutionally permissible accommodation measure and would eliminate the violation.¹⁴²

138.

The recent failure of Creationists in the Supreme Court makes it unlikely that the Creationists will repeat their efforts to encourage enactment of modified balanced treatment acts in an effort to avoid the fate of the Arkansas and Louisiana acts. In addition to the likely failure of a modified act, such efforts attract too much publicity. Instead, Creationists will turn their attention to their strongest resource - 'grassroots organization' - to begin to pressure local school boards to adopt publications sympathetic to the creation-science viewpoint and lobby textbook publishers for equal emphasis or dilution of evolutionary instruction.

Dhooge, *From Scopes to Edwards: The Sixty-Year Evolution of Biblical Creationism in the Public School Classroom*, 22 U. RICH. L. REV. 187, 230-31 (1988).

139. See, e.g., *Sherbert v. Verner*, 374 U.S. 398 (1963) (Seventh-Day Adventist who believes in a day of rest on Saturday may not be forced to work on that day to qualify for unemployment compensation).

140. See, e.g., *Wisconsin v. Yoder*, 406 U.S. 205 (1972) (Amish students not compelled to attend school after the eighth grade in order to practice the separatist beliefs of their religion).

141. *Id.* at 214.

142. See Note, *supra* note 12, at 515 for a detailed examination of this free exercise argument.

Opponents of balanced treatment legislation argue that the Constitution contains no guarantee that all positions contrary to any religion will not be taught in the public school, and that the state's interest in the instruction of evolution sufficiently outweighs the students' right to free exercise. The free exercise argument has been asserted in two creation-science cases¹⁴³ but has not yet been tested by the Supreme Court.

Even if creationists are correct in asserting that students who have religious objections to evolution are subject to a coercive burden in public schools, and even if the state's interest in teaching evolution was found not to be compelling, the third element of the *Yoder* test could not withstand the argument. This element requires that no less burdensome means exist to achieve the state interest.

First, a balanced treatment requirement is overbroad. By imposing on all students, and not merely those who assert free exercise claims, a curriculum dictated by the religious beliefs of some, balanced treatment promotes those beliefs and conveys to students the message that the school approves of those religious beliefs.

Further, the logical extension of the balanced treatment approach raises the question whether such an approach is to be used every time class content conflicts with some religion.¹⁴⁴ What about accommodating religious tenets from other religions that conflict with science? The result could be curricular bedlam.

Second, there are less burdensome remedies other than balanced treatment to circumvent free exercise problems. One alternative is comparative religion courses. The Constitution does not prohibit instruction about the world's religions, provided such instruction is presented in a neutral fashion.¹⁴⁵ A public school cannot favor or disfavor any particular religion but it can analyze objectively the various religions of the world. Biblical and/or scientific creationism would be proper subjects for a comparative religion course.

Another alternative is exemption, whereby the student is exempted from public school science instruction or parts thereof that conflict

143. *Wright v. Houston Indep. School Dist.*, 366 F. Supp. 1208 (S.D. Tex. 1972), *see supra* text accompanying notes 34-37; *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255 (E.D. Ark. 1982), *see supra* text accompanying notes 54-74.

144. Andrew D. White's work, *A HISTORY OF THE WARFARE OF SCIENCE WITH THEOLOGY IN CHRISTENDOM* (1899) suggests other conflicts fundamentalists might have with school science courses: creation v. geological formation of the earth; fossils produced by the Noachic Deluge v. paleontology; Ptolemaic astronomy v. heliocentric theory; divine signs v. comets, meteors and eclipses; Biblical age of man v. Egyptology.

145. *See, e.g., School Dist. of Abington Township v. Schempp*, 374 U.S. 203, 255 (1963).

with his or her religious beliefs. Exemption arrangements are constitutional and have been used in many situations.¹⁴⁶ If the state's interest in teaching evolution is not considered substantial and the burden on religion great, exemption could be permitted by courts.¹⁴⁷ The Court in *Yoder*, which exempted Amish children from high school attendance, noted that the burden upon religious freedom was substantial since the Yoders faced criminal penalties.¹⁴⁸ If the test for exemption is a substantial coercive burden, perhaps only "strict" creationists could meet the standard.¹⁴⁹ In addition, exempting only strict creationists would cause less disruption in school administration, since the number involved would most likely be small. Exemption for those who genuinely object to the teaching of evolution on religious grounds would thus remove the burden from free exercise and cause the least interference with the public school curriculum.

A final free exercise alternative to balanced treatment is to undogmatize the evolution lesson. The aim of the San Diego CSRC¹⁵⁰ is not to request legislation which mandates the teaching of creation-science. The Center's goals are to (1) prevent evolution from being taught dogmatically, or as scientific fact; (2) subject evolution to student criticism in the classroom and to examination of its weaknesses; and (3) give students the opportunity to introduce and discuss alternative interpretations to evolution, notably creationism.¹⁵¹ Indeed, this was the policy adopted by the California Board of Education in 1973 and the subject of *Seagraves*.

As noted above, there are some weaknesses and unexplainable lack of data regarding evolution. Pointing these out in class and allowing some discussion of alternative theories of the origin of life, such as, but not limited to, creationism, could only serve to strengthen the content of the course and the students' overall understanding of the

146. See, e.g., *Kleid v. Board of Educ.*, 406 F. Supp. 902 (W.D. Ky. 1976) (children whose parents objected on religious grounds exempted from school vaccination program); *Sherbert v. Verner*, 374 U.S. 398 (1963) (exempted Seventh-Day Adventist from Saturday work requirement); *Wisconsin v. Yoder*, 406 U.S. 205 (1972) (exempted Amish children from post-eighth education).

147. See, e.g., *Church of God v. Amarillo Indep. School Dist.*, 511 F. Supp. 613 (N.D. Tex. 1981) (students whose religion required them to miss ten days of school each year to observe holy days outweighed school's interest in requiring regular attendance).

148. *Yoder*, 406 U.S. at 211.

149. Strict creationists are those whose religion demands a lifestyle cut off from much of the world. Thus, the religious beliefs of strict creationists are more coercively burdened by evolution instruction. One example of a strict creationist is the Apostolic Lutheran faith, whose believers are forbidden to watch movies or television, listen to radio, sing or dance to worldly music, or study evolution or humanist philosophy. See Note, *supra* note 12, at 564 n.239; Note, *supra* note 16, at 444 n.109.

150. See *supra* notes 17 and 42-53 and accompanying text.

151. R. KOFAHL, CREATION ESSAY 16: WHY AND HOW TO INCLUDE THE CREATION ALTERNATIVE IN PUBLIC SCHOOL SCIENCE (published by CSRC) (on file with SAN DIEGO L. REV.).

subject. The freedom to discuss creationism if it should come up during the course of classroom study of evolution is not violative of the Constitution. *Requiring* creationism to be taught is a violation.

VI. CONCLUSION

Religious fundamentalists over the years have attempted to introduce creationism in public school classrooms in order to counterbalance the teaching of evolution. In light of *Edwards*, such attempts disguised as balanced treatment acts appear to be doomed under the establishment clause of the first amendment. The *Edwards* Court and other courts have looked beyond an expressed secular legislative purpose for balanced treatment acts. Courts have taken into consideration the religious pronouncements of sponsors of the bill and key witnesses, the source of such bills (such as the major creation-science centers nationwide), as well as other legislative history. Courts then used such information to strike down equal time or balanced treatment laws as impermissible advancement of religion in violation of the secular purpose prong of the *Lemon* neutrality test.

Despite the unclear standards for determining the legislative purpose or objective/subjective intent in enacting balanced treatment acts, such laws still fail under the *Lemon* test's second prong because they have the primary effect of advancing religion. Although creationists claim creation-science can be taught in the classroom without biblical reference and is based on scientific data, this Note found, based on a study of the basic tenets of creation-science, that it is inherently religious and unsubstantiated scientifically. Therefore, requiring the teaching of creation-science in public school classrooms is unconstitutional.

However, creationists may still be able to use the free exercise clause to maintain that there are alternatives to counterbalance the teaching of evolution in the classroom. Such alternatives include: (1) the addition of comparative religion courses which cover creationism; (2) the exemption of fundamentalists, especially strict creationists, from the class during the study of evolution, or (3) teaching evolution as a theory, not as scientific fact, exposing its weaknesses and leaving room for introduction and discussion in class of other theories of the origin of life. The latter alternative gives teachers the freedom to explore other theories, if desired or if requested by students, without mandating by statute that creationism be taught along with evolution.

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