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GOD AND DARWIN IN THE CLASSROOM: THE CREATION/EVOLUTION CONTROVERSY

JUDITH A. VILLARREAL*

For over sixty years, the courts of the United States have struggled with the conflict between science and religion in the classroom.¹ This struggle pits those for whom the ultimate origins of humankind are a question of faith against those for whom they are a question of scientific fact. Yet judges, individuals who are neither theologians nor scientists, appear destined to make the final decisions regarding which theory our children will learn in school.²

Perhaps because of their legal training, judges have often been reluctant to define the theological and scientific issues at stake in these cases or to take a definite stand on them. Indeed, it may be argued that it is not possible to do so. It is, on the one hand, clear that neither religion nor science is easily and neatly definable. It is equally clear, however, that until these issues are defined, the courts will continue to be faced with the seemingly insoluble dilemma of enforcing the establishment clause of the Constitution without being able to say precisely what it is they must not permit to be established.

This Note will consider the creation/evolution controversy as exem-

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1. See, e.g., *Scopes v. State*, 154 Tenn. 105, 289 S.W. 363 (1927) (overturning on procedural grounds conviction of teacher accused of teaching theory of evolution); *Epperson v. Arkansas* 393 U.S. 97 (1968) (declaratory judgment action in which Arkansas' statute prohibiting the teaching of evolution was overturned); *Edwards v. Aguillard*, 107 S. Ct. 2573 (1987) (Louisiana statute requiring that the teaching of evolution be accompanied by the teaching of creation-science overturned); *Mozert v. Hawkins County Bd. of Educ.*, 827 F.2d 1058 (6th Cir. 1987), *cert. denied*, 108 S. Ct. 1029 (1988) (claim that use of certain textbooks espousing secular ideas was an interference with plaintiff's free exercise rights rejected).

2. It can, of course, be argued that the decisions in this area should, in fact, be legislatively rather than judicially made. Clearly, in much, if not all, of the United States, a majority of the population does support much of the creationist position. It might seem, therefore, that the courts are riding roughshod over majority rights in their general refusal to countenance the teaching of creation-science. However, it is not unusual for the courts to use their so-called counter-majoritarian role to protect the rights of minorities when the majority threatens to abrogate those rights, particularly in the case of substantive first amendment rights. As John Hart Ely has said, judicial interpretation of "constitutional law appropriately exists for those situations where representative government cannot be trusted, not those where we know it can." J. ELY, *DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW* 183 (1980).

plified by cases ranging from *Scopes v. Tennessee*,³ decided in 1927, to *Edwards v. Aguillard*,⁴ decided in 1987, and attempt to predict the future of this conflict. First, the Note will examine the legal framework within which the courts must address this issue.⁵ Second, the Note will examine the underlying controversy between the evolutionists and creationists, noting both what the parties themselves have had to say on the issue and the courts' responses to these statements.⁶ The Note will then consider recent cases addressing this and related issues,⁷ and examine other actions creationists have taken and may take in the future in their effort to bring creationism and other doctrines of conservative Christianity into the public classroom.⁸ The Note concludes with an examination of the possible results of the Supreme Court's failure to speak more definitely on these issues.⁹

I. THE LEGAL FRAMEWORK

The legal framework within which the creation/evolution controversy is set is one filled with controversy and complicated reasoning. The first amendment to the United States Constitution provides, in part, that "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof. . . ."¹⁰ The provisions of that amendment have been made applicable to the states through the fourteenth amendment.¹¹ Since applying the first amendment to the states, the United States Supreme Court has issued a number of opinions affecting various state laws which were challenged as violative of that amendment. These cases tend to be very fact sensitive and often appear to produce seemingly conflicting results, making the Court's reasoning with respect to religion clauses at times quite difficult to understand. For example, the Court has upheld the legality of Sunday blue laws,¹² tax de-

3. 154 Tenn. 105, 289 S.W. 363 (1927).

4. 107 S. Ct. 2573 (1987).

5. See *infra* notes 10 to 39 and accompanying text.

6. See *infra* notes 40 to 86 and 121 to 242 and accompanying text.

7. See *infra* notes 87 to 120 and 244 to 267 and accompanying text.

8. See *infra* notes 268 to 274 and accompanying text.

9. See *infra* notes 275 to 281 and accompanying text.

10. U.S. CONST. amend. I.

11. "The First Amendment declares that Congress shall make no law respecting an establishment of religion or prohibiting the free exercise thereof. The Fourteenth Amendment has rendered the legislatures of the states as incompetent as Congress to enact such laws." *Cantwell v. Connecticut*, 310 U.S. 296, 303 (1940).

12. *McGowan v. Maryland*, 366 U.S. 420 (1961). Blue laws are those regulations, originating in colonial America, which forbade secular activities on Sundays. The name is said to arise from the blue paper on which the original list was published in New Haven, Connecticut, in 1781. The laws prohibited buying, selling, traveling, public entertainment and sports on Sunday. Their influence

ductions for the property owned by religious organizations,¹³ state sponsorship of chaplains for legislative bodies,¹⁴ a city-sponsored display of a Christmas creche,¹⁵ and rehabilitation payments to a blind theological student.¹⁶ On the other hand, the Court has refused to uphold a requirement that notaries public declare their belief in God¹⁷ and an unemployment regulation that required Seventh Day Adventists to work on Saturday in order to collect benefits.¹⁸

During this same period, the Supreme Court has heard a number of cases considering the impact of the establishment and free exercise clauses of the first amendment on the public schools. In these cases, the Court upheld programs that provided bus transportation for parochial school students,¹⁹ released time programs for religious education provided off school grounds,²⁰ loaned secular textbooks to parochial school students,²¹ funded state-mandated examinations in nonpublic schools when accompanied by an audit procedure,²² and allowed deduction of all educational expenses for private elementary and secondary schooling.²³ At the same time, the Court refused to countenance a released time program for religious education on public school grounds,²⁴ daily recital by students of a state-composed prayer,²⁵ daily Bible readings and the recitation of the Lord's Prayer in public school classes,²⁶ salary supplements

declined after the Revolution, but may still be seen today in regulations, such as those concerning the sale of alcohol, which govern Sunday activities. II ENCYCLOPEDIA BRITANNICA 99 (1977).

13. *Walz v. Tax Comm'n of the City of New York*, 397 U.S. 664 (1970).

14. *Marsh v. Chambers*, 463 U.S. 783 (1983).

15. *Lynch v. Donnelly*, 465 U.S. 558 (1984). *Lynch* involved the permissibility of a city's Christmas creche display. The Court held that Jefferson's view that the separation between church and state must function as completely as a "wall" was not a "wholly accurate description" of the relationship between church and state. *Id.* at 673. The Court proposed instead an accommodation, rather than mere tolerance, of religion, and stated that it would not be confined to any single test or criterion in establishment clause cases. *Id.* at 672, 679.

16. *Witters v. Washington Dep't of Serv. for the Blind*, 474 U.S. 481 (1986).

17. *Torcaso v. Watkins*, 367 U.S. 488 (1961).

18. *Sherbert v. Verner*, 374 U.S. 398 (1963).

19. *Everson v. Board of Educ.*, 330 U.S. 1 (1947).

20. *Zorach v. Clauson*, 343 U.S. 306 (1952). Released time programs involve the public schools permitting certain students to be released during regular school hours in order to receive off-site religious education.

21. *Board of Educ. v. Allen*, 392 U.S. 236 (1968).

22. *Committee for Pub. Educ. & Religious Liberty v. Regan*, 44 U.S. 646 (1980).

23. *Mueller v. Allen*, 463 U.S. 388 (1983).

24. *Illinois ex. rel. McCollum v. Board of Educ.*, 333 U.S. 203 (1948).

25. *Engel v. Vitale*, 370 U.S. 421 (1962).

26. *School Dist. v. Schempp*, 374 U.S. 203 (1963). *Schempp*, which predated *Lemon*, used a neutrality standard which involved application of what were to become the secular purpose and advancement of religion prongs of *Lemon*. *Id.* at 222. In *Lemon v. Kurtzman*, 403 U.S. 602 (1971), the Court devised the test which is currently used in evaluating most establishment clause cases. In that case, a three-pronged test looking at the purpose and effect of the challenged statute is provided. For further information, see *infra* text accompanying note 35.

for lay teachers in parochial schools,²⁷ and state money grants to non-public schools for maintenance and repairs.²⁸ Other programs which have been overturned include state funding of state-mandated examinations in nonpublic schools when *not* accompanied by an audit procedure,²⁹ the mandatory posting of the Ten Commandments in public school classrooms,³⁰ moments of silence for "meditation or silent prayer,"³¹ financing of classes taught by public school employees to non-public school students in nonpublic school buildings,³² and local use of federal funds to pay salaries of public school employees who teach in parochial schools.³³

In reaching these varied results, the Court has, since 1971, almost without exception applied the three-pronged test promulgated in *Lemon v. Kurtzman*.³⁴ The test promulgated in *Lemon* applies three criteria to a statute challenged under the first amendment's establishment clause. First, the statute must have a secular legislative purpose. Second, the principal or primary effect of the statute must neither advance nor inhibit religion. Finally, the third prong of the test requires that the statute not foster an excessive entanglement of government with religion. A statute must comport with all three prongs of the test in order to be found constitutional.³⁵

The decisions reached under the *Lemon* test are often pluralities, narrow majorities, or decisions which feature a number of concurring opinions.³⁶ Frequently, the decisions turned ultimately on very narrow

27. *Lemon*, 403 U.S. 602.

28. Committee for Pub. Educ. & Religious Liberty v. Nyquist, 413 U.S. 756 (1973).

29. Levitt v. Committee for Pub. Educ. & Religious Liberty, 413 U.S. 472 (1973).

30. Stone v. Graham, 449 U.S. 39 (1980).

31. Wallace v. Jaffree, 472 U.S. 38 (1985).

32. School Dist. v. Ball, 473 U.S. 373 (1985).

33. Aguilar v. Felton, 473 U.S. 402 (1985).

34. 403 U.S. 602, 612-13. See *infra* text accompanying note 35 for the language of the test. A major exception to the *Lemon* test is found in *Marsh v. Chambers*, 463 U.S. 783 (1983). In *Marsh*, the Court noted that Nebraska's provision for a chaplain in its legislature could have no possible secular purpose, but held that the weight of history behind such chaplains, including their use in the United States Congress, made their funding by the government acceptable under the first amendment. The Court also avoided the *Lemon* test in *Lynch v. Donnelly*, 465 U.S. 668 (1984), in which a city's use of a Christmas display was challenged. The Court proposed an accommodation of religion in *Lynch*, rather than a mere tolerance, and upheld the city's right to set up the display. *Lynch* and *Marsh* are generally recognized as aberrations in the application of the *Lemon* test.

35. *Lemon*, 403 U.S. at 612-13.

36. *Id.* *Lemon* itself involved four opinions with no clear majority. See also Committee for Pub. Educ. & Religious Liberty v. Regan, 444 U.S. 646 (1980) (majority of five, four dissenters with two opinions); Stone v. Graham, 449 U.S. 39 (1980) (majority of five with four dissenters); Meek v. Pittenger, 421 U.S. 349 (1975) (very complicated structure of partial joins, concurrences and dissents in which no single complete opinion was supported by five justices); Levitt v. Committee for Pub. Educ. & Religious Liberty, 413 U.S. 472 (1973) (majority of five, concurrence of three, one dissenter).

factual issues.³⁷ Yet, regardless of its often tortuous reasoning, the Court has endeavored to maintain the separation between church and state, where public school children are concerned, as the wall that Thomas Jefferson declared it to be.³⁸ Nowhere has this determination been more clear than on the issue of evolution and creation.³⁹

II. THE HISTORICAL FRAMEWORK

A. In the Beginning

Charles Darwin published his revolutionary *Origin of Species*⁴⁰ in 1859. The book caused a storm of controversy and protest in its time, a reaction which has not, in some quarters, subsided.⁴¹ Disagreement over the truth of Darwin's theory of speciation extends today from the public school classroom to the highest levels of American government.⁴² However, despite long standing furor over Darwin's theory, the beginnings of the legal controversy over evolution in this country date back only seven decades.

The modern debate in American classrooms has its beginning, not with Darwin, but in the post-war decade of the 1920s, the preeminent

37. For an example of the fact sensitive nature of these cases, compare *Regan*, 444 U.S. 646 with *Levitt*, 413 U.S. 472 (the difference in result hinged solely upon whether there was an audit program accompanying state funding of state mandated tests in private schools).

38. *McCollum*, 333 U.S. at 231 (1948). See also *Everson v. Board of Educ.*, 330 U.S. 1, 16 (1947). In concluding *Everson*, the Court said, "The First Amendment has erected a wall between church and state. That wall must be kept high and impregnable." *Id.* at 18.

39. A recent paper, focusing on the creation/evolution controversy, suggests modifying the secular purpose prong of the *Lemon* test, and replacing it with a test to determine whether a given statute, *in fact*, establishes a religion. The proposed modification of the *Lemon* test would also require a balancing between free exercise and establishment clause claims with, apparently, the free exercise claim always given heavier weight. Using this test, the author finds the teaching of evolution to be a burden on creationists' free exercise rights and would require either the teaching of evolution as a theory only or the incorporation of "countervailing" theories of human origins into public school curricula. The author appears to support her constitutional determination upon the supposedly greater ability of elected officials to "better reflect community concerns." Note, *Balanced Treatment of Creation and Evolution: A Study in Reconciling the Two Religion Clauses*, 34 WAYNE L. REV. 265, 301 (1987). Unfortunately, however, community concerns, no matter how well reflected, are not always constitutional and may well support unconstitutional ideas.

40. C. DARWIN, *ORIGIN OF SPECIES* (1859).

41. See, e.g., P. KITCHER, *ABUSING SCIENCE: THE CASE AGAINST CREATIONISM* 186 (1982), quoting Henry M. Morris: "Evolution is the root of atheism, of communism, nazism, behaviorism, racism, economic imperialism, militarism, libertinism, anarchism, and all manner of anti-Christian systems of belief and practice." Mr. Morris is the most frequently encountered authority of the creation-science movement. He is a professor of civil engineering. E. LARSON, *TRIAL AND ERROR: THE AMERICAN CONTROVERSY OVER CREATION AND EVOLUTION* 92 (1985).

42. Ronald Reagan, speaking to a religious group in Dallas, Texas, said, "Well, it is a theory. It is a scientific theory only, and it has in recent years been challenged in the world of science—that is, not believed in the scientific community to be as infallible as it once was." Kline, *Theories, Facts and Gods: Philosophical Aspects of the Creation-Evolution Controversy*, in *DID THE DEVIL MAKE DARWIN DO IT?* 37 (D.B. Wilson ed. 1983).

anti-evolution period in United States history. In this period, Christian fundamentalists⁴³ and other reformers, buoyed by their successes in passing certain populist legislation and led by William Jennings Bryan, sought to outlaw the teaching of evolution in the public schools.⁴⁴ During the decade, thirty-seven anti-evolution bills were introduced in the legislatures of twenty states.⁴⁵ The first to be passed was Oklahoma's statute forbidding the inclusion of the Darwinian theory in textbooks distributed by the state.⁴⁶ Two years later, Tennessee passed a statute, with little apparent enthusiasm from its legislators,⁴⁷ making it a crime to teach evolution in any Tennessee public school.⁴⁸ It was this Tennessee statute which was to lead to the first of the evolution cases, *Scopes v. Tennessee*.⁴⁹

B. The Scopes Trial

The Tennessee Anti-Evolution Act (the Act)⁵⁰ was signed into law

43. Fundamentalism is literally the belief in a list of five essential ("fundamental") points of Christianity as put forth by the Niagara Bible Conference in 1895: the inerrancy of the Bible, the divinity of Jesus, his virgin birth, the atonement of mankind's sins by his crucifixion and his resurrection and eventual Second Coming.

N. ELDRIDGE, *THE MONKEY BUSINESS: A SCIENTIST LOOKS AT CREATIONISM* 18 (1982). It should be noted here that the terms "creationist" and "evolutionist" will generally be used to identify the opposing parties in this paper. The creationists, closely related to and often allied with the fundamentalist or conservative movements in Protestant Christianity, will often be referred to in the context of that alliance. The evolutionists are a part of so-called mainstream science, as well as of what the creationists call "secular humanism," and that alliance will also be noted on occasion.

44. Gould, *William Jennings Bryan's Last Campaign*, NAT. HIST., Nov. 1987, at 16. As Gould notes, it is sometimes difficult to reconcile the earlier Bryan who was an immensely popular proponent of such typically progressive ideas as women's suffrage, the direct election of senators, and the graduated income tax, with the later Bryan who was a biblical literalist, and was called by H.L. Mencken "a tinpot Pope in the Coca Cola belt." *Id.*

45. E. LARSON, *supra* note 41, at 39. These bills actually became law in a number of states other than Tennessee, including Mississippi (1926), Arkansas (1928) and Texas (1929). There was also an attempt to have the mathematical value of π changed, by law, from 3.1416... to 3.000, in part because it was simpler to use and in part because the Bible described Solomon's vase as three times as far around as across. D. NELKIN, *THE CREATION CONTROVERSY: SCIENCE OR SCRIPTURE IN THE SCHOOLS* 31 (1982).

46. E. LARSON, *supra* note 41, at 7. The level of the debate may perhaps be best illustrated by observing that one of the Oklahoma legislators said during consideration of the bill, "I'm neither a lawyer or [sic] a preacher, but a two-horsed layman and I'm against this theory called science." *Id.* at 50.

47. M. RUSE, *DARWINISM DEFENDED: A GUIDE TO THE EVOLUTION CONTROVERSIES* 287 (1982). Ruse believes that although few legislators actually supported the bill their fear of repercussions led them to vote for it. *Id.*

48. TENN. CODE ANN. § 27 (1925).

49. 154 Tenn. 105, 289 S.W. 363 (1927).

50. *Id.* The text of the Act is, in pertinent part:

An act prohibiting the teaching of the evolution theory in all the Universities, normals and other public schools of Tennessee, which are supported in whole or in part by the public school funds of the state, and to provide penalties for the violation thereof.

Section 1. Be it enacted by the General Assembly of the state of Tennessee, that it shall be unlawful for any teacher in any of the Universities, normals and all other public

on March 21, 1925.⁵¹ Just two months later, on May 25, an article appeared in the *Chattanooga Daily Times* in which the American Civil Liberties Union (ACLU) announced that it was seeking a candidate for a test of the constitutionality of the law.⁵² The article attracted the attention of a number of citizens in the nearby small town of Dayton, Tennessee. These gentlemen determined that such a trial could bring national attention and increased business to their community and, within a few days of the article, they had decided to provide the ACLU with a candidate.⁵³

John Scopes was chosen to be the defendant in the test case. Scopes, a science teacher at the local high school, had filled in for the principal during a biology class review, using a textbook which contained evolutionary teachings; based upon this action, he was charged with violating the Anti-Evolution Act.⁵⁴ The ensuing trial became a focus of national and worldwide attention. The ACLU retained Clarence Darrow and Dudley Field Malone as defense counsel,⁵⁵ while the World's Christian Fundamentals Association, which had been meeting in Tennessee when the Act was passed, procured the services of William Jennings Bryan as special prosecutor.⁵⁶ When the trial began, several hundred reporters

schools of the state which are supported in whole or in part by the public school funds of the state, to teach any theory that denies the story of the divine creation of man as taught in the Bible and to teach instead that man has descended from a lower order of animals.

Section 2. Be it further enacted that any teacher found guilty of a violation of this act, shall be guilty of a misdemeanor and upon conviction shall be fined not less than one hundred (\$100.00) dollars nor more than five hundred (\$500.00) dollars for each offense.

Id.

51. S. GOULD, *A Visit to Dayton*, in HEN'S TEETH AND HORSE'S TOES, FURTHER REFLECTIONS IN NATURAL HISTORY 264 (1983). Ruse notes that, even as the bill became law, the governor of Tennessee gave his assurances that "[n]obody believes that it is going to be an active statute." M. RUSE, *supra* note 47, at 287.

52. E. LARSON, *supra* note 41, at 58. Nelkin states that the trial was provoked by the ACLU in order to test the statute under the first amendment. D. NELKIN, *supra* note 45, at 31.

53. There is some disagreement concerning who made the decision. Stephen Jay Gould writes that the decision was made by a group of businessmen at Doc Robinson's Drug Store (where one can still have one's picture taken at the historic table), S. GOULD, *supra* note 51, at 265, while E.J. Larson says that George W. Rappelyea, manager of a local coal company, conceived the idea and swore out the warrant. E. LARSON, *supra* note 41, at 60. In any case, there appears to be no dispute that civic boosterism was the impetus for the charge.

54. Cole, *Scopes and Beyond: Antievolutionism and American Culture*, in SCIENTISTS CONFRONT CREATIONISM 14 (L.R. Godfrey, ed. 1983). Tennessee had a declaratory judgment act which would have permitted Scopes, as a teacher affected by the law, to seek a declaration that the law was unconstitutional without a trial; however, the prospect of a dramatic trial suited both the local businessmen and the ACLU much better than a non-adversarial proceeding. E. LARSON, *supra* note 41, at 60.

55. E. LARSON, *supra* note 41, at 62. It should be noted that Darrow was one of the outstanding defense attorneys of his day, being particularly well known for his agnosticism and for his defense of Leopold and Loeb in their trial for the kidnap and murder of a child. III ENCYCLOPAEDIA BRITANNICA 383 (1977).

56. *Id.* at 61. Bryan had, by the time of the trial, already run for the Presidency three times and

were present, along with numerous writers of national reputation, notably H.L. Mencken and Adolph Shelby Ochs. Also present were twenty-two Western Union wire operators and reporters from WGN Radio in Chicago.⁵⁷ The civic boosters of Dayton, Tennessee had definitely achieved the notoriety they desired.

The prosecution controlled the trial from the beginning. It focused on the narrow issue of the legislature's right to control education in Tennessee, and therefore to pass the Anti-Evolution Act, coupled with Scopes' clear violation of the statute.⁵⁸ The ACLU originally intended to contest the statute on first amendment grounds,⁵⁹ but sought instead to invalidate the law by establishing the legitimacy of evolutionary theory through a battery of expert testimony.⁶⁰ Unfortunately for the ACLU, the trial judge agreed with the prosecution's theory of the case; no expert testimony was heard,⁶¹ except that of William Jennings Bryan, who testified, somewhat unconvincingly, as an expert on the Bible.⁶²

Eventually, with even Clarence Darrow admitting Scopes' guilt,⁶³ the trial came to an end. Scopes was convicted⁶⁴ and fined \$100 by the judge.⁶⁵ Scopes appealed his conviction, with continued ACLU assistance, to the Tennessee Supreme Court.⁶⁶ The court overturned Scopes' conviction, while upholding the constitutionality of the statute, on the ground that Tennessee law required fines of over \$50 be imposed by juries, not by judges.⁶⁷ The court recommended that the case not be re-

was especially famous for his "cross of gold and crown of silver" speech advocating a departure from the gold standard. I. STONE, *THEY ALSO RAN: THE STORY OF THE MEN WHO WERE DEFEATED FOR THE PRESIDENCY* 83, 95 (1966).

57. La Follette, *Creationism in the News: Mass Media Coverage of the Arkansas Trial*, in *CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE* 189 (M.C. La Follette ed. 1983).

58. E. LARSON, *supra* note 41, at 63-64. *See also*, D. NELKIN, *supra* note 45, at 32; M. RUSE, *supra* note 47, at 288.

59. D. NELKIN, *supra* note 45, at 31.

60. E. LARSON, *supra* note 41, at 63.

61. S. GOULD, *supra* note 51, at 271. The written expert testimony was eventually admitted to the trial record.

62. Bryan, although a prosecutor of the case, was actually called to the stand as a defense witness. Surprisingly, he did not object to being called by Darrow. E. LARSON, *supra* note 41, at 69. It is generally agreed that Bryan did not acquit himself well on the stand. S. GOULD, *supra* note 51, at 272, making statements such as "I do not think about things I do not think about." Cole, *supra* note 54, at 15. The entire exchange was eventually stricken from the trial record. S. GOULD, *supra* note 51, at 272.

63. E. LARSON, *supra* note 41, at 69.

64. D. NELKIN, *supra* note 45, at 32.

65. *Scopes*, 289 S.W. at 367. The fine was the minimum the statute provided; fines of up to \$500 for conviction of the proscribed misdemeanor were permitted. *Id.* at 363-64 n.1.

66. E. LARSON, *supra* note 41, at 70.

67. *Scopes*, 289 S.W. at 367. An interesting concurring opinion in *Scopes* concludes that the act was constitutional because one can teach divine creation and evolution "without regard to details of religious belief, or differing interpretations of the story as taught in the Bible. In this view . . . the

tried and it was not.⁶⁸ The statute remained on the books until its repeal in 1967;⁶⁹ John Scopes was the only person ever tried under it.⁷⁰

C. *The Aftermath of Scopes*

The importance of the *Scopes* trial lies not, of course, in the relatively minimal legal issues ultimately resolved or, more accurately, avoided by the Tennessee Supreme Court. Rather, *Scopes* is important for its long-term effects on American education. Following *Scopes*, the next three decades of American science education represented an ever-increasing retreat from one of the major scientific ideas of this century, the Darwinian theory of evolution.⁷¹ Textbook publishers, responding to market pressure and the need to satisfy large southern textbook purchasers, greatly reduced the discussion of evolution in new editions of standard biology textbooks,⁷² while surveys showed a steady decline in the teaching of evolution from 1925 onward.⁷³ Textbooks which had originally carried portraits of Darwin as their frontispiece saw the portrait deleted in subsequent editions,⁷⁴ while Darwin's theory was almost as thoroughly expunged.

The *Scopes* trial and the almost inconceivable nationwide attention it received resulted in a major distortion in American science education. At least in part because the Tennessee court chose not to resolve the conflict between religion and science, an insignificant, small town trial was to have a devastating effect on the public school curriculum.⁷⁵ For

way is left open for such teaching of the pertinent sciences as is approved by the progressive God recognizing leaders of thought and life." *Id.* at 370.

68. *Id.* at 367.

69. S. GOULD, *supra* note 51, at 273.

70. Cole, *supra* note 54, at 22.

71. D. NELKIN, *supra* note 45, at 33.

72. Gould notes, for example, that an edition of *Modern Biology* from the mid-1950s does not even contain the word "evolution," while its predecessor edition not only contained several chapters on evolution, but that it was also used as the unifying theme of the work. S. GOULD, *Moon, Mann and Otto*, in HEN'S TEETH AND HORSE'S TOES: FURTHER REFLECTIONS IN NATURAL HISTORY 282-83 (1983).

73. D. NELKIN, *supra* note 45, at 33. For a detailed statistical survey of the decline and eventual return of evolution in textbooks, see Skoog, *The Topic of Evolution in Secondary School Biology Textbooks: 1900-1977*, in EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY (J.P. Zetterberg ed. 1983).

74. S. GOULD, *supra* note 72, at 283. See also Moyer, *Young Earth Creationism and Biology Textbooks*, 33 BIOSCIENCE 113 (No.2 1983). Moyer also notes the extreme pressure under which textbook publishers function. For example, he cites the Texas State Textbook Committee as the second largest textbook buyer in the U.S., accounting for eight percent of nationwide textbook purchases. These purchases are controlled by a statement of the Texas Board of Education which requires that evolution be identified as only one among "several explanations of the origins of humankind." Furthermore, the statement requires that each textbook carry a statement on an introductory page that any material on evolution is presented as theory rather than fact. *Id.*

75. *Scopes*, 289 S.W. 363. Perhaps because of dramatizations of the *Scopes* trial in works such

example, by 1942, less than fifty percent of American high school biology teachers were including evolution in their classroom instruction.⁷⁶ By the next decade, textbooks which still addressed the issue of evolution at all were using euphemistic names for it such as "racial development," "progressive development" or even simply "change."⁷⁷ In the meantime, professional scientists, content merely to communicate with one another, remained unconcerned with secondary school education.⁷⁸ As a result, scientific education in the American public school languished until the unexpected successful Russian launch of an artificial satellite in October, 1957.⁷⁹

The launch of the Soviet satellite Sputnik created a wave of panic among American politicians, scientists, intellectuals, and economists.⁸⁰ It also created a science curriculum reform movement, specifically intended to compete with Soviet scientists and to contribute to the Cold War effort.⁸¹ One result of this movement was that President Eisenhower requested massive funding for a program to fund science education, ultimately leading to passage of the National Defense Education Act of 1958.⁸² In addition, the National Science Foundation supported projects to create new textbooks⁸³ and the American Institute of Biological Sciences founded the Biological Sciences Curriculum Study (BSCS), which provided seven million dollars for the development of a modern

as *Inherit the Wind*, S. GOULD, *supra* note 51, at 282, it is little known that, while the sentence was overturned on a technical error, the Tennessee Supreme Court found the statute at issue constitutional. The trial remains so much a part of American consciousness that the National Broadcasting Company telecast a new version of *Inherit the Wind* in March 1988. See 74 A.B.A. J. 26 (1988).

76. D. NELKIN, *supra* note 45, at 33.

77. Skoog, *supra* note 73, at 78.

78. Cole, *supra* note 54, at 24.

79. S. GOULD, *supra* note 72, at 282. Gould is not alone in his view of evolution as being central to scientific progress. For example, the late Theodosius Dobzhansky of Rockefeller University and the University of California-Davis claims that nothing in biology and its related sciences makes sense at all without the theory of evolution. He also cites with approval the Christian theologian Pierre Teilhard de Chardin who stated that evolution is "a general postulate to which all theories, all hypotheses, all systems must henceforth bow and which they must satisfy in order to be thinkable and true. Evolution is a light which illuminates all facts, a trajectory which all lines of thought must follow . . ." Dobzhansky, *Nothing in Biology Makes Sense Except in the Light of Evolution*, in *EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY*, *supra* note 73, at 18. Cole also notes the serious effect on science education (as measured by textbook content) which occurred in the post-*Scopes* era. Cole, *supra* note 54, at 22-28.

80. Cole, *supra* note 54, at 24.

81. D. NELKIN, *supra* note 45, at 39-40. It is interesting to note that, in biology at least, the Soviets lagged far behind the United States, being mired in Lysenko's Lamarckian acquired-characteristics theory until well into the 1950s. Cole, *supra* note 54, at 24. For a more detailed discussion of Lysenko and his disastrous effect on Soviet biology and agriculture, see D. FUTUYMA, *SCIENCE ON TRIAL: THE CASE FOR EVOLUTION*, 161-62 (1983).

82. E. LARSON, *supra* note 41, at 91.

83. D. NELKIN, *supra* note 45, at 43.

approach to the teaching of biology.⁸⁴ Biology textbooks, including those prepared by BSCS, began to devote far more of their space to topics relating to evolution.⁸⁵ The BSCS texts began to appear in classrooms in the early 1960s and became a major factor in the return of anti-evolutionary activity during that same period.⁸⁶ As the use of the BSCS texts spread, accompanied by the general emphasis on science education, the stage was set for a renewed confrontation between those for and those against the teaching of the theory of evolution.

D. *Creation-Science and the Courts*

Accompanying the re-emergence of science education in the decades following Sputnik was a resurgence of fundamentalist Christianity.⁸⁷ Conservative Christian denominations experienced major increases in membership during the two decades from 1960 to 1979.⁸⁸ These increases ranged from a nine percent increase in the most conservative Lutheran synod to a two hundred percent increase in the membership of the Assemblies of God.⁸⁹ This growing religious movement also had a political component.⁹⁰ Significantly, creationism was among the causes religious conservatives advocated, reawakening the century old conflict with the theory of evolution. Creationism was soon adorned with a new suffix and became creation-science.

The term creation-science first entered the public awareness in 1965 with the publication of *The Genesis Flood* by J.C. Whitcomb and H.M. Morris.⁹¹ The movement behind the name grew rapidly, fostered and supported by organizations such as the American Scientific Affiliation, the Creation Research Society, the Creation Science Research Center, the Institute of Creation Research, and the Genesis School of Graduate Studies.⁹² As part of the effort to increase public awareness and adher-

84. *Id.* at 44-45.

85. Skoog, *supra* note 73, at 79.

86. E. LARSON, *supra* note 41, at 91.

87. D. NELKIN, *supra* note 45, at 59.

88. E. LARSON, *supra* note 41, at 91-92. This trend continues, with the membership in so-called "mainline" Protestant churches remaining static or decreasing, while that of the conservative Christian denominations continues growing rapidly. Neuhaus, *The New Face of American Churches*, Wall St. J., Mar. 9, 1988.

89. D. NELKIN, *supra* note 45, at 61.

90. N. ELDRIDGE, *supra* note 43, at 17-18. Eldredge argues that the political nature of the creationist movement is a central characteristic. He sees the creation/evolution issue as a political debate over what only the creationists consider to be an unresolved intellectual question.

91. McLean v. Arkansas Bd. of Educ., 529 F. Supp. 1255, 1259 (E.D. Ark. 1982), *aff'd*, 723 F.2d 45 (8th Cir. 1983). The *McLean* opinion provides an excellent brief overview of the creationist movement and its literature.

92. D. NELKIN, *supra* note 45, at 77-83.

ence to their doctrine, creationists used the courts and other institutions in an attempt to refashion the American public schools in their own conservative image.⁹³

A number of cases illustrate the various legal tactics creationists have undertaken.⁹⁴ The Supreme Court first addressed these tactics in *Epperson v. Arkansas*,⁹⁵ a 1968 case in which it overturned an Arkansas law forbidding the teaching of evolution.⁹⁶ The Court held in this case that a state was not permitted to prohibit the teaching of a scientific doctrine merely because it conflicted with the doctrines of a particular religious denomination.⁹⁷ The Court was not called upon to define what it meant by religious doctrine because the statute in question implicitly referred to the teaching of doctrines which contradicted divine creation as taught in the Bible.⁹⁸ Instead, the Court simply held that the act violated the establishment clause because it supported the doctrines of certain Christian groups.⁹⁹

Before the Supreme Court was again confronted with the creation/evolution controversy, a number of cases arose in the lower federal courts. Among them was *Wright v. Houston Independent School Dis-*

93. See, e.g., *Mozert v. Hawkins County Bd. of Educ.*, 827 F.2d 1058 (6th Cir. 1987), cert. denied, 108 S. Ct. 1029 (1988); and *Smith v. Board of School Comm'rs of Mobile County*, 827 F.2d 684 (11th Cir. 1987). Both cases challenged school books on religious grounds; *Mozert* involved a claim that being forced to confront certain secular issues was an interference with the plaintiff's free exercise rights and *Smith* involved a claim that the book's presentation of secular issues represented an establishment of the religion of secular humanism. For a general discussion of court action by conservative Christian groups, see Note, *Appealing to a Higher Law: Conservative Christian Legal Action Groups Bring Suit to Challenge Public School Curricula and Reading Materials*, 18 RUTGERS L.J. 437 (1987). See also *infra* notes 244 to 260 and accompanying text.

94. See, for example, *Wright v. Houston Indep. School Dist.*, 366 F. Supp. 1208 (S.D. Tex. 1972), aff'd, 486 F.2d 137 (D.C. Cir. 1973) (textbook challenge); and *Crowley v. Smithsonian Inst.*, 636 F.2d 738 (D.C. Cir. 1980) (claim that display depicting human evolution was establishment of the religion of secular humanism).

95. 393 U.S. 97 (1968).

96. *Id.* The Court noted that the statute in question had been modeled after the Tennessee statute at issue in *Scopes*. However, unlike the Tennessee statute, the Arkansas statute provided for the dismissal of any person convicted. *Id.* at 98-99. Tennessee's statute had merely provided for fines ranging from \$100 to \$500. See text of statute *supra* note 50.

97. *Epperson v. Arkansas*, 393 U.S. 97, 107 (1968). Relying on the purpose and effect test it had proposed in *Schempp*, see *supra* note 26, the Court held that a state's "undoubted right" to set public school curricula did not permit it to do so in a way that violated the first amendment. *Epperson*, 393 U.S. at 107.

98. *Epperson*, 393 U.S. at 108-09.

99. *Id.* at 107-08. Justices Harlan, Stewart and Black all wrote concurring opinions in *Epperson*. Justice Black's concurrence is the most interesting in that it, in some ways, anticipates the creationist argument that the teaching of evolution is an interference with the free exercise rights of fundamentalist Christians. Justice Black read the majority opinion as viewing evolution as an anti-religious doctrine. He stated that the teaching of evolution might therefore show a lack of neutrality on the part of the state and present "problems under the Establishment Clause far more troublesome than are discussed in the Court's opinion." *Id.* at 113 (Black, J., concurring).

trict,¹⁰⁰ a 1972 case in which the plaintiffs claimed that teaching evolution in the Houston public schools violated their free exercise rights and constituted an establishment of the religion of secular humanism.¹⁰¹ Noting that it had seen "no case in which so nebulous an intrusion upon the principle of religious neutrality has been condemned,"¹⁰² the district court dismissed the case on the ground that it failed to state a claim upon which relief could be granted.¹⁰³ Three years later, the Sixth Circuit Court of Appeals held in *Daniel v. Waters*¹⁰⁴ that a Tennessee statute mandating that textbooks specifically label evolution a theory which does not represent scientific fact and include the Biblical account of creation with equal emphasis, was violative of the establishment clause because it preferred the doctrines of one religious group by failing to require any disclaimer for the Biblical account.¹⁰⁵ Applying the *Lemon* test,¹⁰⁶ the court also found that the statute's prohibition of the teaching of "satanic" or "occult" doctrines was violative of the establishment clause because it would create a continuing and burdensome involvement of the state in theological disputes, thus violating the third prong of *Lemon*.¹⁰⁷ The controversy appeared again, outside of the public school context, in *Crowley v. Smithsonian Institution*,¹⁰⁸ a 1980 case in which a group of creationists alleged that a display depicting the evolution of humankind established the religion of secular humanism through government funding of the Institution.¹⁰⁹ Rejecting plaintiffs' contentions that evolution

100. 366 F. Supp. 1208 (S.D. Tex. 1972).

101. *Id.* at 1209. The plaintiffs were seeking to enjoin the teaching of evolution and the adoption of textbooks which taught evolution without critical analysis and without mentioning other theories of the origins of humanity. The case came before the district court on a motion to dismiss for failure to state a claim. *Id.*

102. *Id.* at 1210.

103. *Id.* at 1213. The court noted that plaintiffs attempted to analogize between the Arkansas prohibition of the teaching of evolution and the fact that the Houston School District did teach evolution as equivalent violations of the neutrality required by *Epperson* and *Schempp*. However, the court found that plaintiffs had "wholly failed to establish the analogy." *Id.* at 1210. Plaintiffs' argument seems to have adopted, without success, the reasoning of Justice Black's concurring opinion in *Epperson*. 393 U.S. at 109 (Black, J., concurring). See also *supra* note 96.

104. 515 F.2d 485 (6th Cir. 1975).

105. *Id.* at 489. The Tennessee statute contained some very odd provisions which the court found very disturbing, such as a prohibition of the teaching of any "occult or satanical" beliefs. *Id.* at 487. As the court said, in considering the difficulties created by the act:

Throughout human history the God of some men has frequently been regarded as the Devil incarnate by men of other religious persuasions. It would be utterly impossible for the Tennessee Textbook Commission to determine which religious theories were "occult" or "satanical" without seeking to resolve the theological arguments which have embroiled and frustrated theologians through the ages.

Id. at 491.

106. See text accompanying note 35.

107. *Daniel*, 515 F.2d at 491.

108. 636 F.2d 738 (D.C. Cir. 1980).

109. *Id.*

was either a religion itself or a tenet of a religion of secular humanism, the District of Columbia Circuit Court of Appeals held the display did not establish a religion.¹¹⁰

In 1982, the creation/evolution controversy returned to the classroom in *McLean v. Arkansas Board of Education*,¹¹¹ a case challenging Arkansas' Balanced Treatment Act. This statute required that the teaching of evolution in public schools be counterbalanced by presentation of the Biblical account of creation.¹¹² Refusing to be bound by the legislature's statement of purpose, the district court found that the statute violated the secular purpose and religious effect prongs of the *Lemon* test.¹¹³ The court, in perhaps the best opinion yet written in this area, stated that the creation-science defined in the act had as its "unmentioned reference the first 11 chapters of the Book of Genesis" and conveyed an "inescapable religiosity."¹¹⁴ Five years later, a similar act would be tested by the United States Supreme Court.

*Edwards v. Aguillard*¹¹⁵ presented the Supreme Court once again with the controversy it had appeared to resolve in 1968: the teaching of evolution in the public schools. The case was initiated when Louisiana passed a statute, substantially similar to that overturned in *McLean*, requiring that any teacher who wished to teach the theory of evolution must also teach creation-science.¹¹⁶ The Court, focusing on the legislative history of the act, determined that it had no secular purpose¹¹⁷ and was thus violative of the establishment clause.¹¹⁸ The Court found instead that the purpose of the act was either to support the teaching of creation-science or to prohibit the teaching of evolution, either of which would promote the beliefs of certain religious groups. Finding, therefore,

110. *Id.* at 742-43. The court cited with approval the Supreme Court's statement in *McGowan* that a statute does not violate the establishment clause simply because it "happens to coincide or harmonize with the tenets of some or all religions." *Id.* at 742 (quoting *McGowan v. Maryland*, 366 U.S. 420, 442 (1961)). Accordingly, it would appear that even if evolution were part of a religion of secular humanism, it might simply be found to "coincide or harmonize" with that religion and therefore be unaffected by the establishment clause argument. Various religions prohibit such things as murder, adultery and divorce. These tenets have also been important factors in the development of the legal system and would be difficult to challenge on an establishment clause basis. *McGowan*, 366 U.S. at 442.

111. 529 F.Supp. 1255, 1256 (E.D. Ark. 1982).

112. *Id.*

113. *Id.* at 1263-72. See text accompanying note 35 for test.

114. *McLean*, 529 F. Supp. at 1265. *McLean* attracted an enormous amount of public attention when it was decided and has resulted in a number of books since that time. See, e.g., L. GILKEY, CREATIONISM ON TRIAL: EVOLUTION AND GOD AT LITTLE ROCK (1985); and CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE (M.C. LaFollette ed. 1983).

115. 107 S. Ct. 2573 (1987).

116. *Id.* at 2575-76.

117. *Id.* at 2579.

118. *Id.* at 2584.

that the primary purpose of the act was to promote religion, the Court affirmed the lower court ruling that the act was violative of the establishment clause.¹¹⁹

The common theme in these cases is, obviously, that creation-science is considered by the courts to be religion rather than science. However, with few exceptions, the courts reach these conclusions without ever clearly defining the terms science or religion. Because the Supreme Court has not faced this difficult task, the lower courts are repeatedly confronted with similar cases which recite familiar arguments about the scientific nature of creationism and the religious nature of evolution and secular humanism. As will be explored more fully below,¹²⁰ this results in frequent rearguing of the tenets of conservative Christianity in the courts.

III. THE CURRENT DISPUTE

As we have seen, the dispute over evolution and creation-science has spread from numerous books to the mass media and, most importantly, to the legislatures and the courts. Yet, despite millions of words expended in this endeavor, it is not at all clear that the combatants understand one another's language, nor, apparently, that the courts and the general public understand either side's position.¹²¹ For this reason, the material in this section provides an overview of the underlying dispute which fuels the creation/evolution controversy.¹²² The issues involved are scientific, religious and philosophical. However, the material which follows does not purport to be a thorough statement of the beliefs of

119. *Id.* at 2582-84. *Edwards* featured two concurring opinions, (one by Justice Powell, joined by Justice O'Connor, and one by Justice White,) and a strong dissent in which Justice Scalia was joined by Chief Justice Rehnquist. Justices Powell and O'Connor were concerned about the nature of academic freedom and the continuing ability to teach about religion even if one could not teach religion itself. *Id.* at 2590. Justice White focused on the Court's custom of deferring to the interpretation of statutes by lower courts. *Id.* at 2590-91. Justice Scalia's dissent is discussed more fully, *infra* at notes 142-47 and the accompanying text.

120. See text accompanying notes 224-60 for a fuller discussion.

121. William Becker, Professor of Religion at Bucknell University, has produced a fascinating analysis of the creation/evolution controversy which places the issue within alternative conceptual dimensions, resulting in radically different approaches to and resolutions of the basic dispute. His analysis makes clear that a resolution of the dispute is not possible when one side acts from an anthropological viewpoint, the other comes from a spiritual-prophetic position, and the referee watches from a legal and institutional position. Becker, *Creationism: New Dimensions of the Religion-Democracy Relation*, 27 J. CHURCH & ST. 315 (1985).

122. For a discussion of the basic history and terminology of evolutionary biology, see P. KITCHER, *supra* note 41, at 7-29. A much more detailed examination of Darwin and the theory of evolution can be found in M. RUSE, *supra* note 47. For a basic outline of the doctrines of creationism, see B. THOMPSON, *THE SCIENTIFIC CASE FOR CREATIONISM* (1986).

either group, but is rather a simple and necessarily simplistic overview of two very complex belief systems.

In essence, the creationists adopt the Biblical narrative of *Genesis* as their theory of origins.¹²³ The *Genesis* narrative tells of the creation of the world in six days by the personal god, Yahweh, of the Judeo-Christian tradition. This deity created plants, animals and humankind in the persons of Adam and Eve in their final, finished forms.¹²⁴ In addition, the Noachian Flood narrative, in which all creation, except the animals and people taken into Noah's ark, was destroyed by the same deity, is also taken as a historical account.¹²⁵ Later modifications of the creationist theory, possibly in reaction to court decisions, have led to a theory which retains many of these beliefs, but subtly removes the specifically Christian portions of the narrative and merely requires final creation by a personal god.¹²⁶

The theory of evolution, on the other hand, does not usually address the issue of the origins of life,¹²⁷ but instead focuses on changes in life once it has begun. Darwin's original theory held that plant and animal species, under certain circumstances, would, through a then unidentified process of natural selection, undergo changes resulting ultimately in the creation of a new species.¹²⁸ Current scientific debate in evolutionary biology centers around the methods of natural selection rather than on the theory itself, which is generally accepted as true. The modern debate centers on two schools: those who accept dynamic gradualism (the slow changing of species through minor changes over great periods of time); and those who accept punctuated equilibrium (in which sudden, dramatic changes occur, creating new species which then remain static over long periods).¹²⁹

123. See, e.g., B. THOMPSON, *GENESIS 1-11: LITERAL AND HISTORICAL OR MYTHOLOGICAL AND ALLEGORICAL?* (Barber Printing), where Thompson, a creationist, states that: "Genesis 1-11 is an historical, literal account and is not to be relegated to myth, allegory, or 'poem.'"

124. *Genesis* 1-11. These chapters include the material on creation and the flood, which taken together, comprise the basis of creationism.

125. See, e.g., S. BAKER, *BONE OF CONTENTION: IS EVOLUTION TRUE?* 6-7 (1976).

126. See, e.g., A. HOOVER, *THE CASE FOR TEACHING CREATION* 67 (1981), where it is stated that: "Any theory which essentially affirms that God is prior to matter is a true creation model It may differ in details of the actual creation but if it asserts an everlasting Person or Mind who is the ultimate principle of explanation for the universe, it is a genuine creation model." *Id.* at 6-7.

127. The issue of origins is generally left to physics in mainstream science, particularly to theories such as the so-called "Big Bang" theory. See generally I. PRIGOGINE, *ORDER OUT OF CHAOS* (1984).

128. See generally C. DARWIN, *THE ORIGIN OF SPECIES* (1859). For an analysis of Darwin's theory, see M. RUSE, *supra* note 47, at 30-60.

129. For a discussion of both theories, see generally S. GOULD, *The Episodic Nature of Evolutionary Change*, in *THE PANDA'S THUMB: MORE REFLECTIONS IN NATURAL HISTORY* 179-85 (1980).

While the theories of evolution and of divine creation would appear to be mutually exclusive, there is, in fact, much overlap of belief in the two ideas. Many scientists are sincerely religious and many religious persons believe that God created life, although not necessarily in the manner and forms depicted in *Genesis*. Thus, belief in some form of one idea does not preclude belief in some form of the other.

A. *The Two-Model Theory*

At the very heart of the creationist position is the theory that there are two, and only two, possible resolutions to the question of the origin of life and the universe.¹³⁰ These two resolutions, or "models" as the creationists refer to them, are the "theistic" model of creation and the "atheistic" model of evolution. The two-model theory posits exclusively these two worldviews which are held to be "fundamentally different and diametrically opposed."¹³¹ As Henry M. Morris, a prominent creationist, has put it, one must either believe in God as creator and author of history or believe that there is no god; to ignore the issue is, according to Morris, to choose the atheistic approach.¹³² Thus, the only possible choices, for the creationists, are to believe that God created life as described in their theory or that life evolved; there is no third alternative. Furthermore, the only god whom one must believe created life is the God of the Judeo-Christian tradition; all other creation narratives are rejected as being evolutionary.¹³³

Early creationist works openly stressed this religious view of creation by the "word of God,"¹³⁴ while more recent creationist literature emphasizes the fact of creation and minimizes the necessity for the Christian God to appear in the process.¹³⁵ This need to remove God from the process of creation while retaining a creator, presumably in an endeavor to avoid first amendment difficulties, often results rather ironically in the creationists taking a stance that much of orthodox Christianity would

130. See, e.g., B. THOMPSON, *supra* note 122, at 1-4. Note in particular the chart at page 4 where Thompson schematically illustrates the dichotomy between the two models.

131. *Id.* at 1.

132. H. MORRIS, *THE TWILIGHT OF EVOLUTION* 29 (1963).

133. L. GILKEY, *supra* note 114, at 31. One creationist, in fact, states flatly that all other creation narratives, including those of Buddhists, Hindus and Taoists, are based on evolution. B. THOMPSON, *supra* note 123, at 3. It should be mentioned here that the Islamic creation narrative is essentially that of Judaism and Christianity. J. WILLIAMS, *ISLAM* 20-26 (1962). For stylistic reasons, this Note refers simply to the *Genesis* or the Judeo-Christian creation accounts.

134. H. MORRIS, *supra* note 132, at 67.

135. Gish & Bliss, *Summary of Scientific Evidence for Creation*, in *EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY*, *supra* note 73, at 199, 199-200.

view as suspect.¹³⁶ Nevertheless, the more common creation-science position taken today is this one of creation without a specific named deity. Thus, public school teachers are encouraged to stress the scientific evidence supporting divine creation while reserving the relevant biblical history for classes in sectarian schools.¹³⁷

The evolutionists, on the other hand, completely reject the two-model theory. Mainstream scientists would generally deny any theory limited to only two possible answers, on any scientific subject.¹³⁸ As Stephen Jay Gould, a Harvard biologist, says, when such a stance is adopted, "[w]e take a subtle and interesting issue, with a real resolution embracing aspects of all basic positions and we divide ourselves into two holy armies."¹³⁹ More importantly, however, the evolutionists refuse to imply by their reactions to creationism that it has equal status with evolutionary theory. Accordingly, they will seldom undertake formal, detailed point-by-point refutation of the reasoning of the two-model theory.¹⁴⁰ Under these circumstances, it is hardly surprising that there is little actual communication between the opposing forces.

Surprisingly, the creationist contention that the only two alternatives in the question of origins are the Darwinian theory of evolution and the *Genesis* account of creation does seem to have gained some acceptance. This is surprising not only because most religions have their own creation narratives, but also because there are other theories of speciation, such as the now-discredited Lamarckian "acquired characteristics" theory. Yet, as can be seen below, the two-model theory has been ac-

136. L. GILKEY, *supra* note 114, at 104-05. The early Christian church confronted a number of groups which believed that a secondary, less important god created matter. This god was inherently evil and therefore was not to have contact with the true God of spirit. Among groups adopting this view were the Gnostics. The Gnostics were comprised of a number of groups covering a wide range of beliefs, but they shared a common belief in the Demiurge or Creator God and the Supreme Divine Being. THE CONCISE OXFORD DICTIONARY OF THE CHRISTIAN CHURCH 215 (E.A. Livingstone ed. 1977). The Marcionites, one of various groups often labelled as Gnostics, made a distinction between the Old Testament Creator God and the loving Father of Jesus found in the New Testament. J. MUDDIMAN, THE BIBLE: FOUNTAIN AND WELL OF TRUTH 22 (1983). The patristic church's repudiation of these doctrines led to the adoption of the phrasing, "maker of heaven and earth" in the Nicene Creed at the Council of Nicea in 325 C.E. B. SPENCER, YE ARE THE BODY 66, 78 (rev. ed. 1965).

137. Bliss, *A Two Model Approach to Origins: A Curriculum Imperative*, in EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY, *supra* note 73, at 192.

138. Professor Francisco Ayala, a geneticist then at the University of Chicago and now at the University of California-Davis, stated in testimony in *McLean*: "[I]n science it is impossible ever to say there are only two models or theories. Everything is always open; new ideas . . . are always appearing. No one of these is ever closed if it makes sense—and never are there only two possibilities." L. GILKEY, *supra* note 114, at 141.

139. Gould, *Pretty Pebbles*, 97 NAT. HIST. 14, 16 (no. 4, 1988).

140. See, e.g., CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE, *supra* note 57, at 7.

cepted by at least some scholars and members of the legal profession. Perhaps the most important victory the creationists have won thus far is this ability to frame the debate within their own logical framework.

When this acceptance, explicit or implicit, of the creationists' two-model theory is put into practice, it can have some unusual results. For example, a recent paper presenting a self-styled atheist's viewpoint of the creation/evolution controversy makes the tacit assumption that evolution and creation are opposite sides of the same issue. Rather than saying that science is science and religion is religion, the author holds that evolution is a disproof of the religious beliefs of fundamentalist Christians. In other words, making a logical leap that is difficult to follow, the author states that if evolution is true, then religion must be false. If this is correct, the author reasons, then to teach evolution in the schools is an interference with the free exercise rights of fundamentalist Christians. To avoid this result, the author advocates that neither creationism nor evolution be taught in the public schools,¹⁴¹ a tactic that could potentially return the schools to the pre-Sputnik period when virtually no substantive science education was offered. The author assumes that evolution and creation are the only possible answers to the origins question, and that scientific and religious truth are the same thing.

Another result of the acceptance of the two-model theory can be seen in the dissent in *Edwards v. Aguillard*,¹⁴² the 1987 Louisiana "Balanced Treatment" case.¹⁴³ Although *Edwards* reached the Court after the Balanced Treatment Act had been found by the lower courts to violate the secular purpose prong of the *Lemon* test,¹⁴⁴ Justice Scalia's dissent from the Court's affirmance of that decision assumed repeatedly that creation and evolution were equally plausible responses to the question of human origins. For example, in his discussion of the intent of the Louisiana legislature in passing the Balanced Treatment Act, Justice Scalia appeared to accept that teaching both Darwinian evolution and the essentially Judeo-Christian creationist account was sufficient to achieve the legislature's stated goal of balanced treatment of the origin of life.¹⁴⁵

141. Gelfand, *Of Monkeys and Men—An Atheist's Heretical View of the Constitutionality of Teaching the Disproof of a Religion in the Public Schools*, 16 J.L. & EDUC. 271 (1987).

142. 107 S. Ct. 2573 (1987).

143. *Id.* at 2591. See also *supra* notes 115 to 119 and accompanying text.

144. *Id.* at 2576. See text accompanying note 35 for test.

145. *Id.* at 2600-01. This is essentially Gould's point in his article on the *Edwards* decision. As Gould says, "Justice Scalia does not understand the subject matter of evolutionary biology. He has simply adopted the creationists' definition and thereby repeated their willful mistake." Gould, *Justice Scalia's Misunderstanding*, 96 NAT. HIST. 14, 18 (No. 10, 1987). Gould contends that Justice Scalia's central error is that he has defined evolution as the search for the origin of life and nothing more. Gould responds by stating flatly that science does not deal with questions of ultimate origins.

To teach only evolution, according to Justice Scalia, was to indoctrinate students into that theory, when they should be free to decide for themselves which of the two theories to believe.¹⁴⁶ Justice Scalia referred to the then-current method of teaching only evolution in the schools as a "misrepresentation" of evolution.¹⁴⁷ It seems clear that Justice Scalia could only reach this result if he considered the two theories to be of equal scientific weight and each to be the only alternative to the other.

In contrast to the dissent, the majority in *Edwards* takes note that there are numerous scientific theories regarding the origins of humankind and that those theories were not addressed by the Balanced Treatment Act.¹⁴⁸ Similarly, the earlier case of *McLean v. Arkansas Board of Education*¹⁴⁹ had completely rejected the two-model theory. There, the judge characterized the two-model theory as a "contrived dualism which . . . dictates that all scientific evidence which fails to support the theory of evolution is necessarily scientific evidence in support of creationism."¹⁵⁰

The two-model theory is not a logical necessity; one theory neither precludes nor establishes the other. If the theory of evolution were not true, logic does not require that creationism therefore be true; the Hindu or Buddhist or Cherokee accounts of creation could be true instead. Because it is not midnight, logic does not compel one to believe that it is noon; it could well be six o'clock. Furthermore, as the district court pointed out in *McLean*, there is nothing which logically prevents limited forms of both the theories of evolution and creationism from being true.

B. Science Versus Religion

As discussed above, the creation-scientists insist that their issue is one of science, not of religion.¹⁵¹ Yet, the balance of the scientific community refuses to take the creationists seriously and some members of that community find the conflict worsened by what they perceive as an all out attack by the creationists.¹⁵² Further, this conflict is magnified when creation-scientists confront evolutionists with the claim that there

Id. at 20-21. Further, he says, "[i]f Justice Scalia heeded our definitions and our practices, he would understand why creationism cannot qualify as science." *Id.* at 20.

146. *Edwards*, 107 S. Ct. at 2601-02 (Scalia, J., dissenting).

147. *Id.* at 2604.

148. *Id.* at 2580.

149. 529 F. Supp. 1255.

150. *Id.* at 1266 (footnote omitted).

151. See, e.g., M. RUSE, *supra* note 47, at 291. See also Gish & Bliss, *supra* note 135 (discussing the scientific nature of the creation model).

152. D. FUTUYMA, *supra* note 81, at 5.

is no genuine scientific basis to evolution.¹⁵³ Evolutionists, of course, similarly reject any scientific basis to creationism.¹⁵⁴ Because of this conflict, it may be wise to attempt to define both science and religion before delving further into the detailed issues of creation and evolution.

The dictionary defines science variously as follows: knowledge as opposed to belief; systematized knowledge based on study, observation and experimentation; a branch of knowledge concerned with establishing and systematizing facts by experiment and hypotheses; and as the systematized knowledge of nature and the physical world.¹⁵⁵ Mainstream scientists themselves are slightly more hesitant in proposing definitions, but will state that science rests on testable observations and natural processes which are confronted by new evidence and ideas so as to be self-correcting.¹⁵⁶

Philosophers, on the other hand, have not been reluctant to attempt to define science. Plato divided science into classes: theoretical science (*dianoia*) and practical science (*mathema*), which combined to create *epistme* or knowledge. Roger Bacon, who was credited with the creation of the modern scientific method utilizing observation and mathematics, believed theology to be superior to science. Subsequently, Galileo took Bacon's method and developed the modern process of experimentation directed toward the proof of particular theories. Modern philosophy has also built on the Baconian base toward an ideal of empirical science based on observable facts.¹⁵⁷ Nevertheless, there are also twentieth century philosophers who stray from this respected and orthodox view of science. For example, Thomas Kuhn, an American professor of philosophy, believes that science revolves around certain central paradigms which become like the tenets of any other orthodoxy, protected from heresies of those who adopt new ideas.¹⁵⁸ Similarly, Claude Levi-Strauss,

153. See, e.g., H. MORRIS, *supra* note 132, at 14 (providing an example of a creationist attack on the scientific basis for evolution).

154. See, e.g., L. GILKEY, *supra* note 114, at 142; Moore, *Evolution, Education, and the Nature of Science and Scientific Inquiry*, in *EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY*, *supra* note 73, at 3, 5.

155. WEBSTER'S NEW WORLD DICTIONARY OF THE AMERICAN LANGUAGE 1305 (College Ed. 1960).

156. See, e.g., N. NEWELL, *CREATION AND EVOLUTION: MYTH OR REALITY?* xxxi-xxxii (1982). Unfortunately, some scientists define science as what the recognized scientific community treats as science, Holtzman & Klasfed, *The Arkansas Creationism Trial: An Overview of the Legal and Scientific Issues*, in *CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE*, *supra* note 57, at 86, 93, or, as another scientist has said, "You might almost define a good scientist as a person with the horse sense to discern the largest answerable question—and to shun useless issues that sound bigger." Gould, *supra* note 145, at 18.

157. W. REESE, *DICTIONARY OF PHILOSOPHY AND RELIGION: EASTERN AND WESTERN THOUGHT* 516-18 (1980).

158. *Id.* at 287.

a French philosopher, views science as part of the mythology by which humanity tries to justify the discrepancies between society as it is and its ideal image.¹⁵⁹

Even judges confronted with the creation/evolution conflict have attempted, with occasional success, to define science. For instance, in *McLean v. Arkansas Board of Education*,¹⁶⁰ the 1982 case in which Arkansas' Balanced Treatment Act was overturned, Judge William R. Overton noted that science has five essential characteristics. First, science is guided by natural law. Second, it has to be explanatory by reference to natural law. Third, it is testable against the empirical world. Fourth, its conclusions are tentative and, fifth, they are falsifiable.¹⁶¹

None of the definitions of science given here would be acceptable to the creation-scientists, although the creationists might find some comfort in Kuhn's theory outlined above that orthodox science punishes its heretics. One creationist divides the sciences into two types: one "loose" and the other "strict." He defines strict science as the rigorous application of scientific method and empirical observation. In contrast, loose science is defined as arguing a theory from circumstantial evidence or hypothesizing from data.¹⁶² These definitions would seem to imply that both creation-science and evolution are loose sciences. This is particularly so given that many creationists emphasize science as the analysis of facts which are actually gathered, rather than as the development of theories which arise from or explain those facts.¹⁶³

While the differences between these various definitions of science may be, in some sense, subtle, they are clearly at the center of the clash between creation and evolution. Modern mainstream science, which rejects large, unanswerable questions and depends on the observation of natural processes, will surely reject as unscientific a theory like creationism, which is based upon the operation of a supernatural creator functioning outside the constraints of natural law.¹⁶⁴ Likewise, creation-science, which rejects theorizing and accepts only discrete and concrete facts, cannot consider the theory of evolution, with its allegedly limited

159. *Id.* at 303.

160. *McLean v. Arkansas*, 529 F. Supp. 1255 (E.D. Ark. 1982).

161. *Id.* at 1267. One recent article predicts that the concept of science itself will soon come under constitutional attack by the religious right. Noting that "science enjoys constitutional blessing, but not protection," the author fears that textbooks reducing science to merely tentative theories or belief systems could be mandated and would survive constitutional challenge. Note, *Science in School: From Antireligion to Scientific Cult*, 21 J. MARSHALL L. REV. 449, 453 (1988).

162. A. HOOVER, *supra* note 126, at 2-3. Dr. Hoover holds a Ph.D. in history.

163. L. GILKEY, *supra* note 114, at 39-40.

164. See text accompanying notes 183-204 for fuller discussion.

fossil record and indeterminate dating,¹⁶⁵ to be science.

The concept of religion also creates a conflict between the creationists and evolutionists. The dictionary defines religion as a belief in divine or superhuman powers which are worshipped as the creator/ruler of the universe or as any specific system of belief, worship and conduct, often involving a code of ethics and a philosophy.¹⁶⁶ Religion has also been defined as an institution with a body of communicants which accepts a set of doctrines involving the relation of the individual to ultimate reality, and gathers together for regular worship.¹⁶⁷ Although there are certain philosophers, such as Holbach or Chubb, who would either adopt a naturalist religion or replace religion with science, the mainstream of modern thought would probably still hold with the Christian theologian Paul Tillich's idea that religion is based upon the idea of "God as the ground of being and religion as the object of man's ultimate concern."¹⁶⁸

On the whole, the courts have generally not been eager to express definitions of religion. Nevertheless, a few examples are available and would appear to include creationism within their scope. For instance, the Supreme Court has stated that the term religion refers to "one's views of his relations to his Creator, and to the obligations they impose of reverence for his being and character, and of obedience to his will."¹⁶⁹ In a similar vein, the District of Columbia Court of Appeals in *Crowley v. Smithsonian Institution*,¹⁷⁰ while denying that evolution was a religious doctrine, said that the mere fact that religions may involve the acceptance of some doctrines on faith "obviously does not mean that all beliefs and all theories which rest in whole or in part on faith are therefore elements of a religion as that term is used in the first amendment."¹⁷¹ In

165. See text accompanying notes 205-23 for fuller discussion.

166. WEBSTER'S NEW WORLD DICTIONARY OF THE AMERICAN LANGUAGE 1228 (College Ed. 1960).

167. W. REESE, *supra* note 157, at 488.

168. *Id.* Paul Henri D'Holbach was an eighteenth century French philosopher closely associated with the *Encyclopedie* to which he was a contributor. Holbach believed that all knowledge was based on sensation and that religion must therefore be replaced by science. *Id.* at 230. Thomas Chubb, an eighteenth century English philosopher, accepted religion in some sense, but was skeptical of prophecy, miracles, special revelation or the efficiency of prayer. *Id.* at 92. For an interesting discussion of the Supreme Court's use of Tillich's definition, see McBride, *Paul Tillich and the Supreme Court: Tillich's "Ultimate Concern" as a Standard in Judicial Interpretation*, 30 J. CHURCH & ST. 246 (1988). See also *United States v. Seeger*, 380 U.S. 163 (1965) (the case in which Tillich's definition is used); and Note, "Secular Humanism" and the Definition of Religion: *Extending a Modified "Ultimate Concern" Test to Mozart v. Hawkins County Public Schools and Smith v. Board of School Commissioner*, 63 WASH. L. REV. 445 (1988).

169. *Davis v. Beason*, 133 U.S. 333, 342 (1890).

170. 636 F.2d 738 (D.C. Cir. 1980).

171. *Id.* at 742.

a like manner, the district court in *Malnak v. Yogi*¹⁷² said that "concepts concerning God or a supreme being of some sort are manifestly religious."¹⁷³ Speaking even more strongly, the district court in *McLean v. Arkansas Board of Education*¹⁷⁴ stated that creation from nothing is a concept unique to Western religions and that it is an inherently religious doctrine.¹⁷⁵ On the other hand, the majority in *Edwards v. Aguillard*,¹⁷⁶ while finding Louisiana's Balanced Treatment Act unconstitutional precisely because it advanced a particular religious doctrine, did so without ever explicitly stating that creation-science was a religious doctrine or what a religious doctrine was.¹⁷⁷

Because creationism implies a creator, many would say that creationism is inherently a religious doctrine.¹⁷⁸ Nevertheless, the creationists deny the religious nature of their system and argue that creation-science does not require a deity, but only that "the entity which caused creation have power, intelligence and a sense of design."¹⁷⁹ They argue further that belief in such a creator is not inherently a religious belief.¹⁸⁰ The evolutionists, on the other hand, vehemently reject all contentions that creation-science is science in any sense of the word,¹⁸¹ and hold instead that it is, purely and simply, religion.¹⁸²

Once again, the differences in definition are outcome determinative for each group. The evolutionists find the presence of a creator, however

172. 440 F. Supp. 1284 (D.N.J. 1977), *aff'd per curiam*, 592 F.2d 197 (3rd Cir. 1979).

173. *Id.* at 1322.

174. 529 F. Supp. 1255 (E.D. Ark. 1982).

175. *Id.* at 1265.

176. 107 S. Ct. 2573 (1987).

177. *Id.* The Court did, however, note a survey conducted in the Louisiana schools that showed that 75% of Louisiana's school superintendents considered creation-science to be a religious doctrine, and that the majority of those who so believed thought it meant the literal *Genesis* narrative. *Id.* at 2584 n.18.

178. In *McLean*, Judge Overton noted a number of factors which, in his opinion, made creationism a specifically religious doctrine. Among these were the opinions of every theologian who testified for either side in the trial that creationism involved a supernatural creation performed by God and the fact that creation from nothing was inherently a religious doctrine. *McLean*, 529 F. Supp. at 1265-66.

179. See, e.g., *The Legal Argument: Excerpts from the Defendants' Preliminary Outline and Pre-Trial Brief*, in CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE, *supra* note 57, at 33, 41.

180. *Id.* at 35.

181. "To mumble that 'the ways of the Creator are many and mysterious' may excuse one from identifying design in unlikely places. It is not to do science." P. KITCHER, *supra* note 41, at 138. See also Gould, *supra* note 145.

182. See, e.g., Edwards, *Why Creationism Should Not Be Taught as Science: The Legal Issues, in EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY*, *supra* note 73, at 361, 381. Also of interest in this essay is a chart reproduced from a creationist article which shows the differences between the Special Creation Model and the Biblical Creation Model. Although creationists contend that this chart distinguishes the two, the differences are minimal and tend rather to illustrate the close relation between the two. *Id.* at 368.

defined, fatal to the scientific nature of creationism; the creationists find that presence essential to their system, but basically irrelevant to whether creationism is or is not science. The courts hesitate to join either side definitely. They will apparently find creationism to be a religious doctrine, but will not make evident the definition of religion which underlies their decisions. Such disparate thought patterns were guaranteed to collide and the next two sections will look closely at some of the details of the collision.

C. *Creation as Science*

The creationists assert their theory of origins in two similar but, according to their statements, distinguishable formulae.¹⁸³ Their primary tenet is that the Biblical account of creation¹⁸⁴ is true and scientifically verifiable. In the alternative, they posit a "special" creation directed by an intelligent, active designing force which may or may not be divine.¹⁸⁵ These theories are then broken down into discrete groups of facts and scientific laws which, the creationists believe, provide the needed scientific underpinnings for their theory. While a complete treatment of this theory is beyond the scope of this Note, it may be helpful to examine a selection of creationist doctrines in some detail in order to understand more fully why creationism is not generally accepted by the scientific establishment. This section will review four basic assertions of creation-science, along with the criticism of those assertions by the scientific community.

The central position of the creationist movement is perhaps best stated by Henry M. Morris:

If the Bible is the Word of God—and it is—and if Jesus Christ is the infallible and omniscient Creator—and He is—then it must be firmly believed that the world and all the things in it were created in six natural days and that the long geological ages of evolutionary history never really took place at all.¹⁸⁶

This philosophical stance forces the creationists to attempt to obtain sci-

183. *Id.* at 368.

184. Biblical scholars generally agree that there are two separate and distinct accounts of creation in *Genesis*. *Genesis* 1:1-2:4a and *Genesis* 2:4b-9. These accounts supplement and contradict one another, both in narrative detail and doctrinal interpretation. See, e.g., W. NEIL, *HARPER'S BIBLE COMMENTARY* 14-16 (1975); Marks, *The Book of Genesis*, in *THE PENTATEUCH: A COMMENTARY ON GENESIS, EXODUS, LEVITICUS, NUMBERS, DEUTERONOMY* 8-15 (C. Laymon ed. 1983). It is not clear that creationist literature takes note of this distinction; they appear to view the two accounts as one.

185. Edwards, *supra* note 182, at 381.

186. Crawford, *Science as an Apologetic Tool for Biblical Literalists*, in *CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE*, *supra* note 57, at 107 (quoting H. MORRIS, *SCIENTIFIC CREATIONISM* 250-51 (1981)).

entific evidence for what is, in essence, a religious theory. This may be their major dilemma; the dogma will not be transformed no matter how many attempts are made to do so.¹⁸⁷

By adopting a scientific view of *Genesis*, the creationists are driven to seek scientific evidence that light and darkness were created in one day, water and sky the next day, land and plants the following day, and so on in the rest of the familiar cadences of the Judeo-Christian creation narrative.¹⁸⁸ They must then locate evidence that God created humankind on the sixth of these "natural" days.¹⁸⁹ However, the creation of the universe and of humankind is not the end of the creationists' canon.

In addition, the Noachian Flood,¹⁹⁰ with its attendant destruction of natural formations and plant, animal and human life, must also be fitted into the overall structure as a central component of creationist doctrine.¹⁹¹ Creationists use the Flood to explain both the natural geological record¹⁹² and the existence of a fossil record of animals which no longer exist.¹⁹³ They contend that the Flood produced the evidence which convinces geologists and evolutionary biologists of their incorrect beliefs.¹⁹⁴

In sum, it is evident that the science which the creationists espouse is based upon the Biblical account of creation.¹⁹⁵ The creationists proclaim this fact, stating that since Jesus Christ and Paul of Tarsus accepted and quoted the *Genesis* account as history, and because it is written in the style of historical narrative, it must be true.¹⁹⁶ In contrast, the evolutionists utterly reject this dependence on the Biblical narrative, stating that, even if creationism were stripped of such Biblical references, it would remain "a body of factual inferences specifically designed to but-

187. L. GILKEY, *supra* note 114, at 37.

188. *Genesis* 1:2-25.

189. *Genesis* 1:26-31. Note that in this section God created them "male and female." *Genesis* 1:27. Yet, in 2:18, man is alone. The narrative continues with God again creating all the animals, and culminates with the fashioning of Eve from the rib of Adam. *Genesis* 2:18-23.

190. *Genesis* 7:11-24.

191. See, e.g., S. BAKER, *supra* note 125, at 7-14; H. MORRIS, *supra* note 132, at 65-74; Brown, *The Scientific Case for Creation: 108 Categories of Evidence*, in *EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY*, *supra* note 73, at 208, 222-25.

192. See, e.g., S. BAKER, *supra* note 125, at 9; H. MORRIS, *supra* note 132, at 65-74; Brown, *supra* note 190, at 224-25.

193. This argument seems easily rebutted by the fact that *Genesis* explicitly states that Noah took "two of all flesh in which there was the breath of life" into the Ark with him. *Genesis* 7:15.

194. Jukes, *The creationist challenge to science*, 308 *NATURE* 398 (1984).

195. Marsden, *Creation versus evolution: no middle way*, 305 *NATURE* 571 (1983).

196. B. THOMPSON, *supra* note 130, at 4-6. Paul of Tarsus, a major theologian and evangelist of apostolic Christianity, is first described in the *Acts of the Apostles*. Originally, under the name Saul, he persecuted the early church, *Acts* 8:1-3, but later was converted to Christianity, *Acts* 9:1-31. Exactly when his name was changed is not clear, although the text does mention that both names were used. *Acts* 13:9. He is more familiarly known as Saint Paul and is traditionally credited with the authorship of many of the New Testament texts.

tress belief in a literal interpretation of Genesis."¹⁹⁷

Closely related to and probably resulting from creationists' literal acceptance of the Biblical narrative is their interpretation of the fossil records used by evolutionary biologists and other scientists to establish the age of the earth and the development of life.¹⁹⁸ Of prime importance for creationists is their insistence that there are no transitional forms in the fossil record. (Transitional forms are animals which clearly exhibit the transition from one species to another which the evolutionary theory would seem to require.)¹⁹⁹ Yet, even the seemingly objective evidence of the fossil record is not similarly interpreted by the two groups. That this is true can be illustrated most easily by references to certain relatively well documented transitional forms in the fossil record.

The creationist position, while generally rejecting any suggested transitional forms, holds that all "kinds" of animals were created during the six-day period of *Genesis*. Although "kind" is not a term used in biology, creationists define it, rather loosely, as somewhat analogous to a species.²⁰⁰ They therefore reject the contention of the evolutionists that new forms of animal life have developed throughout history. Evolutionists usually cite to two particularly well illustrated incidents of transitional forms: the horse family²⁰¹ and the reptile *Archaeopteryx*, a form which is often viewed as transitional to modern birds.²⁰² Even these transitional forms are rejected by the creationists, either flatly and with-

197. *The Legal Arguments: Excerpts from the Plaintiffs' Preliminary Outline and Pre-Trial Brief*, in CREATIONISM, SCIENCE AND THE LAW: THE ARKANSAS CASE, *supra* note 57, at 25. See also L. GILKEY, *supra* note 114, at 107, where he states that for fundamentalist Christians for whom the Bible is central: "[T]he Bible is the only source of true religious ideas and thus the sacred locus of all true religion, [therefore] Biblical quotes represent or constitute religion. If they are omitted, religion is omitted—and the ideas contained in them lose their religious character and can become 'science' . . ." L. GILKEY, *supra* note 114, at 107 (emphasis in original).

198. See generally, S. BAKER, *supra* note 125, at 6-14; A. HOOVER, *supra* note 126, at 30-40; H. MORRIS, *supra* note 132 at 49; B. THOMPSON, *supra* note 130, at 36-40.

199. See, e.g., S. BAKER, *supra* note 125, at 11-12; Gish & Bliss, *supra* note 135, at 202-04; Milne, *How to Debate with Creationists—and Win*, 43 AM. BIOLOGY TCHR. 235, 236-37 (1981). It should be noted, however, that at least one theory of evolution does not require transitional forms at all. Punctuated equilibrium, a theory formulated primarily by Niles Eldredge and Stephen Jay Gould, postulates sudden events of speciation among small isolated populations. These populations then migrate into the larger, unchanged population and thus show no transitional forms. S. GOULD, *supra* note 129, at 183-85.

200. For example, Gish and Bliss define a kind as a "generally interfertile group of organisms that possesses variant genes for a common set of traits but that does not interbreed with other groups of organisms under normal circumstances." Gish and Bliss, *supra* note 135, at 203. Evolutionists respond by challenging the great flexibility of the "kind" system in which bats, in mainstream biology an order with more than 850 species, are considered a kind, while the great apes (and man) are each a separate kind despite their close physical and genetic similarities. P. KITCHER, *supra* note 41, at 155.

201. S. GOULD, *Hen's Teeth and Horse's Toes*, in HEN'S TEETH AND HORSE'S TOES: FURTHER REFLECTIONS IN NATURAL HISTORY, *supra* note 51, at 177-86.

202. N. ELDRIDGE, *supra* note 43, at 67, 121-23.

out further comment,²⁰³ or in some detail.²⁰⁴ Even more offensive to the creationists than the idea of transitional forms in animals, though, has been the possibility of transitional forms in one particular animal: humankind.

Creationist literature frequently makes a distinction between the lack of transitional forms in general and the lack of those for humankind in particular.²⁰⁵ Yet, for reasons that are evident, the evolutionary history of humankind is especially well documented.²⁰⁶ Nevertheless, the creationists absolutely reject the possibility that humans evolved over time rather than having appeared specially created in the divine image.²⁰⁷ At least one evolutionist believes that the creationists' insistence on this point is the ultimate reason for the creationist crusade.²⁰⁸ Whatever the motivation might be, however, the creationists reject all evidence of the primate fossil record as providing any proof of the evolution of humanity.

One of the means creationists employ to attack the validity of human evolution is their claim that the scientific dating systems geologists and paleoanthropologists use are fatally flawed. Much of the standard scientific interpretation of the geological and fossil record provided by the earth is performed through radiometric dating systems. These systems, generally rejected by the creationists, measure the atomic decay of certain elements such as potassium,²⁰⁹ lead isotope,²¹⁰ and carbon.²¹¹

203. Gish & Bliss, *supra* note 135, at 202.

204. For example, Sylvia Baker says that, because the feathers of *Archaeopteryx* are fully developed, its reptilian skeletal features do not make it a transitional form. She would find it to be a modern bird, similar to the Mexican *Hoactzin*, S. BAKER, *supra* note 125, at 11-12. Often, the creationist writer creates his or her own test for an intermediate form and when those exact criteria are not complied with rejects the idea of transitional forms completely. See, e.g., A. HOOVER, *supra* note 126, at 39.

205. See, e.g., S. BAKER, *supra* note 125, at 12; Gish & Bliss, *supra* note 135, at 203-04.

206. See generally, R. LEAKEY, *THE MAKING OF MANKIND* (1981); R. LEAKEY & R. LEWIN, *ORIGINS* (1977); R. LEWIN, *THREAD OF LIFE* (1982).

207. It appears to be of particular comfort to creationists to mention the early twentieth century hoax of Piltdown Man (in which a modern human skull was joined to an ape's jaw) and "Nebraska Man," which was based on the misidentification of a pig's tooth for a human tooth. Gish & Bliss, *supra* note 121, at 203. It is far from clear, however, that those errors should have any bearing on the ultimate truth or falsehood of evolution, or how they can be used to invalidate the entire fossil record.

208. N. ELDREDGE, *supra* note 43, at 118.

209. Potassium-argon dating involves computing the rate of decay of the radioactive potassium isotope, potassium-40, the parent element, into argon-40, the daughter element, by applying the

general radiometric dating formula
$$\frac{P}{t} = \left(\frac{P}{t} + \frac{D}{t} - \frac{D}{o} \right) e^{-\lambda}$$
 where P represents atoms of

a parent element and D atoms of a daughter element and t represents the time factor involved. The elements tested will be naturally present in the material being tested. P. KITCHER, *supra* note 41, at 156-59.

The creationists deny the validity of these systems, often for reasons that do not accord with scientific fact.²¹² Given the rejection of the radiometric dating systems and the acceptance of a relatively low age for the earth,²¹³ it is not surprising that the creationists find the idea of evolution to be unsupported and untenable.

A final example of the creationist use of mainstream science to disprove evolution is their use of the First and Second Laws of Thermodynamics. The First Law posits the universal conservation of all matter in the universe, while the Second Law holds that, in a closed system, order inevitably leads to chaos or entropy. The creationists claim that the First Law proves that creation did happen because the system functions to preserve the matter that God gave to it,²¹⁴ while the Second Law proves that evolution cannot happen because evolution requires that nature proceed from chaos to order.²¹⁵ The evolutionists respond that living systems are not closed, because of the sun's continual addition of energy, and that, therefore, the Second Law simply does not apply to the evolution of life.²¹⁶ Similarly, at least one prominent engineering professor claims that the creationists' use of both laws of thermodynamics includes analytical errors, such as the failure to distinguish between system and process, that should not occur even in the work of a novice.²¹⁷

As a final note, some consideration should be given to the background of the creation-scientists. They are often not trained in the life

210. The lead isotope test applies the general radiometric dating formula, *supra* note 209, to the decay of uranium-238 into lead-206, and uranium-235 into lead-204. *Id.* at 158.

211. Radiocarbon dating calculates the decay of nitrogen-14 into carbon-14 using the standard radiometric formula, *supra* note 209. D. NEWELL, *supra* note 156, at 111-12.

212. For example, one creationist rejects potassium dating because argon-40 is a gas and can therefore "migrate in and out of potassium materials." However, this ignores the fact that argon-40 is an inert gas which cannot become chemically bound. P. KITCHER, *supra* note 41, at 162.

213. Creationists usually suggest that the earth is several thousand years old. This calculation is based upon the ages of figures in the Old Testament. In the nineteenth century, Bishop Ussher of Ireland concluded that the earth had been created on October 26, 4004 B.C.E. at 9:00 a.m. Greenwich Mean Time. The approximate dating is not generally denied by creationists. N. ELDRIDGE, *supra* note 43, at 19.

214. A. HOOVER, *supra* note 126, at 20.

215. See, e.g., *id.* at 21-23; H. MORRIS, *supra* note 132, at 33-40; B. THOMPSON, *supra* note 130 at 40-43; Gish, *Creation, Evolution and Public Education*, in EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY, *supra* note 73, at 184-86.

216. P. KITCHER, *supra* note 41, at 89-90. A clear statement of the Second Law would be that "[t]he entropy of a closed system increases with time." Entropy may be viewed as a "function of that energy in a system which is unavailable for work." *Id.* at 90. See also Franzen, *Thermodynamics: The Red Herring*, in DID THE DEVIL MAKE DARWIN DO IT: MODERN PERSPECTIVES ON THE CREATION-EVOLUTION CONTROVERSY; *supra* note 42, at 127-37; Freske, *Creationist Misunderstanding, Misrepresentation, and Misuse of the Second Law of Thermodynamics*, in EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY 285-95 (J.P. Zetterberg ed. 1983).

217. Patterson, *An Engineer Looks at the Creationist Movement*, in EVOLUTION VERSUS CREATIONISM: THE PUBLIC EDUCATION CONTROVERSY, *supra* note 73, at 155-57.

sciences, even though most of them do have advanced degrees.²¹⁸ Henry M. Morris, the founding father of creation-science, is an engineer.²¹⁹ Many other prominent creationists are also engineers.²²⁰ Based on this academic background, it is not perhaps difficult to understand the reluctance of the general scientific community to accept the precepts of creationism.

While the courts may not have been successful in defining religion, they have thus far been relatively consistent in recognizing it when they see creation-science. Even as early as *Epperson v. Arkansas*, the Supreme Court noted that the overriding reason for Arkansas' decision to prohibit the teaching of evolution was that it offended fundamentalist Christians.²²¹ The lower court decisions which followed *Epperson* were even more vehement in their declarations that creationism was a religious doctrine. For example, the district court in *McLean v. Arkansas Board of Education* made the following statement in determining that Arkansas' Balanced Treatment Act was an impermissible promotion of religion:

The argument that creation from nothing . . . does not involve a supernatural deity has no evidentiary or rational support. To the contrary, "creation out of nothing" is a concept unique to Western religions. In traditional Western religious thought, the conception of a creator of the world is a conception of God. Indeed, creation of the world "out of nothing" is the ultimate religious statement because God is the only actor

. . . The idea of sudden creation from nothing, or *creatio ex nihilo*, is an inherently religious concept.²²²

Similarly, the Supreme Court found in *Edwards v. Aguillard* that the purpose of Louisiana's Balanced Treatment Act was to "advance the religious viewpoint that a supernatural being created humankind."²²³

It becomes difficult therefore to imagine a concept of creation-science, which by its very nature requires a creator outside the bounds of natural law, that will pass constitutional muster. Nonetheless, the continuing challenges by the creationists, particularly as evidenced in the

218. Gilkey does mention the large number of science degrees among those who testified in Little Rock at the *McLean* trial, but many of these were in physics, astronomy and chemistry, rather than biology. L. GILKEY, *supra* note 114, at 21.

219. Patterson, *supra* note 217, at 152.

220. *Id.* at 153.

221. 393 U.S. 97, 103 (1968).

222. *McLean*, 529 F. Supp. at 1265-66.

223. *Edwards v. Aguillard*, 107 S. Ct. 2573, 2581 (1987). The Louisiana legislature had, of course, declared a secular purpose for the Statute. However, as Justice Rutledge said in dissent in *Everson*, "[b]y no declaration that a gift of public money to religious uses will promote the . . . cause of education generally, can legislative bodies overcome the Amendment's bar." 330 U.S. at 52 (Rutledge, J., dissenting).

section which follows, make a more definite statement from the Supreme Court essential. The proper use of educational facilities and judicial resources requires an end to the uncertainty in this area.

D. *Evolution as Religion*

The creationists counterbalance their claim that their theories are not a religion with an assertion that the theory of evolution is a religion. As was noted in *McLean v. Arkansas Board of Education*,²²⁴ the creationists have said on occasion that neither creationism nor evolution is science, but rather that both are religion.²²⁵ This does not, of course, mean that, in creationist eyes, both are of equal religious validity. Indeed, the creationist dislike of evolutionism has gone so far as to lead to statements that evolution is directly inspired by Satan.²²⁶ Nevertheless, the creationists believe that because the theory of evolution cannot be tested in a laboratory, because it attempts, by their lights, to answer the question of the origins of life, and because it advocates a non-theistic way of life, it is a religion.²²⁷ The evolutionists deny all of these charges, in particular that evolution is even trying to answer the question of the origin of life²²⁸ or that Darwinism has anything to say about moral conduct.²²⁹

A number of cases have addressed the claim that the teaching of evolution is in itself an establishment of religion. The religion which is purported to be so established is either evolution itself or "secular humanism,"²³⁰ of which evolution is believed to be a major tenet. For example, in *Wright v. Houston Independent School District*,²³¹ plaintiffs sought to enjoin the Houston Independent School District from teaching evolution because it interfered with their free exercise rights and constituted an establishment of religion. The district court, however, noted that the school district had not expressed any view of the theory of evolution and found that there was no connection between the idea of religion

224. 529 F. Supp. 1255 (E.D. Ark. 1982).

225. *Id.* at 1268. The court agreed that creationism was not, in fact, science. *Id.* at 1267-69.

226. P. KITCHER, *supra* note 41, at 193. The source of this statement is Henry M. Morris who places the event at the Tower of Babel and identifies Satan's agent as Nimrod. *Id.*

227. *See, e.g.*, Gish, *supra* note 215, at 180-81.

228. Gould, *supra* note 145, at 18.

229. Gould, *supra* note 44, at 24.

230. It should be noted that the Supreme Court has, in fact, stated that the state may not establish a "religion of secularism" by "affirmatively opposing or showing hostility to religion." *Schempp*, 347 U.S. at 225 (quoting *Zorach v. Clauson*, 343 U.S. 306, 314 (1952)). It is not, however, true, as Justice Scalia asserts in his *Edwards* dissent, that the Court has "held" secular humanism to be a religion. 107 S. Ct. at 2601 (Scalia, J., dissenting). The "holding" to which he refers is, in fact, a footnote which merely illustrates the Court's statement that there are religions which do not possess a deity. *See Torcaso v. Watkins*, 367 U.S. 488, 495, n.11 (1961). *See also infra* note 237.

231. 366 F. Supp. 1208, 1210 (S.D. Tex. 1972), *aff'd*, 486 F.2d 137 (8th Cir. 1973).

as expressed in the first amendment and the school district's approach to teaching the subject of evolution.²³² Moreover, the district court said, not only were the materials dealing with evolution "peripheral" to the matter of religion, but, since science and religion deal with many of the same subjects, educators cannot be expected to avoid the discussion of scientific issues where the religious and scientific answers differ.²³³

In a similar manner, plaintiffs in the 1980 case of *Crowley v. Smithsonian Institution*²³⁴ alleged that the Smithsonian's display illustrating the evolution of humankind represented an establishment of the religion of secular humanism by endorsing the theory of evolution.²³⁵ Although the District of Columbia Circuit Court of Appeals did note that the religion of secular humanism existed, it found no mention of the religion in the displays. Furthermore, the court stated that government involvement in a subject which is also important to religion is not an endorsement of religion. Nor, according to the court, does the fact that evolution cannot be proven in a laboratory establish as a matter of law that evolution is a religion.²³⁶

Despite the fact that the secular humanism argument has not been generally successful in the courts, much of the scholarly activity regarding the creation/evolution controversy has focused on this area. The idea of evolution as a religious doctrine of secular humanism first received attention in a 1978 student law review article which recommended that scientific creationism be added to the public school curriculum. The author's contention was that since both creation-science and evolution were related to the tenets of certain religious groups, neither should be barred from the schools for that reason. The author anticipated the later use of a footnote in a Supreme Court case that mentioned in passing secular humanism as a religion which did not have a deity,²³⁷ and argued that the teaching of creationism could be used to "neutralize" the teaching of evolution.²³⁸ Since then, a number of scholars have examined the

232. *Id.* at 1210.

233. *Id.* at 1211.

234. 636 F.2d 738 (D.C. Cir. 1980).

235. *Id.* at 740.

236. *Id.* at 741-42.

237. Note, *Freedom of Religion and Science Instruction in Public Schools*, 87 YALE L.J. 515, 556-61 (1978). The footnote in question is in *Torcaso v. Watkins*, 367 U.S. 488, 495 n.11 (1961), where the Court said that secular humanism is "[a]mong religions in this country which do not teach what would generally be considered a belief in the existence of God" However, Leo Pfeffer argues that Justice Black (the author of *Torcaso*) "never intended that the term secular humanism should be used by champions of fundamentalism as justification for either censorship of public school instruction or introduction of religious instruction or both." Pfeffer, *The "Religion" of Secular Humanism*, 29 J. CHURCH & ST. 495, 498 (1987).

238. See Note, *supra* note 237, at 550-55.

issue. For example, Leo Pfeffer examined the topic recently and concluded that “[i]f secular humanism is a religion it is a funny kind of religion.”²³⁹ As Pfeffer noted, secular humanism has no credo, no founder, no prayers, no sermons, no rituals, no priesthoods, no symbols, and no sacred writings. Indeed, the very use of the word secular is, according to Pfeffer, intended to distinguish an activity from those considered religious.²⁴⁰ Similarly, another scholar has noted that “‘secular humanism’ remains largely undefined by those most prone to employ it against the public schools . . . because of the assumption that the term is somehow to be equated with secularism and is, therefore, destructive of all traditional religious and moral values.”²⁴¹ In essence, scholars generally agree that secular humanism concerns a moral perspective which does not rely on a transcendent being.²⁴²

The real difficulty with the secular humanism argument lies in its function of broadening the issues at stake in the creation/evolution controversy. By arguing that secular humanism is a religion, the creationists seek to restructure many of the otherwise uncontroversial aspects of public school education, arguing that the secular values represented therein are, in actuality, tenets of a religion. Once again, this can lead to a poor use of judicial resources with the courts being faced with repetitive challenges to textbooks, subject matters and teaching methods in school district after school district. As Leo Pfeffer has said, “secular humanism is a weapon here to stay, at least until such time as the Supreme Court hands down a decision stating in clear terms that in constitutional law, there is no such thing as ‘secular humanism.’”²⁴³

V. THE FUTURE DISPUTES

Three recent cases illustrate the use of secular humanism as a tactic for reforming the public schools in the image of conservative Christianity. Exhibiting virtually the same dichotomy between secular humanism and conservative Christianity as has been at the heart of the creation/evolution controversy, these cases illustrate possible non-legislative tactics, potentially more effective until challenged in the courts, which may

239. Pfeffer, *supra* note 237, at 498.

240. *Id.*

241. Woods, *The Battle Over the Public School*, 28 J. CHURCH & ST. 5, 8 (1986) (emphasis in original).

242. Note, “*Secular Humanism: A Blight on the Establishment Clause*,” 18 LOY. U. CHI. L.J. 1245 (1987). See also Note, *Secular Humanism, The Establishment Clause, and Public Education*, 61 N.Y.U. L. REV. 1149, 1153-56 (1986) for a lengthy discussion of the meaning of secular humanism.

243. Pfeffer, *supra* note 237, at 500.

be used by the movement to achieve the goal of destroying the secular character of the public school curriculum.

The first of these three cases, *Smith v. Board of School Commissioners*,²⁴⁴ arose in federal district court²⁴⁵ and presented the issue of whether the "religion" of secular humanism should be barred from the public schools.²⁴⁶ The plaintiffs sought the removal of certain home economics, history and social studies textbooks from the Alabama State Approved Textbooks List, alleging that the use of the books was an unconstitutional establishment of the so-called religion of secular humanism. The district court eventually accepted plaintiffs' contention and banned forty-four books from being used in the public schools.²⁴⁷ Plaintiffs pointed to a number of ideas in the various textbooks as being tenets of the religion of secular humanism. In the home economics text, for example, the offensive language involved acceptance of certain ideas of humanistic psychology,²⁴⁸ while the objections to the history and social studies textbooks revolved around a contention that the books did not sufficiently discuss the role of religion in history and culture.²⁴⁹

The Eleventh Circuit Court of Appeals, finding no need to decide what is or is not a religion, held that use of the books did not constitute

244. 827 F.2d 684 (11th Cir. 1987). The district court decision created a storm of controversy, in part because the district court judge, considered an extremist by most legal and religious scholars, held, among other things, that secular humanism was a religion, that the first amendment did not apply to the states, and that every state had a right to establish its own religion within its own borders. *Id.* at 688. For a review of the trial, see Conn, *Inquisition in Alabama*, 40 CHURCH & ST. 6(78) (No. 4, 1987).

245. *Jaffree v. Board of School Comm'rs*, 554 F. Supp. 1104 (S.D. Ala.), *aff'd in part, rev'd in part sub nom. Jaffree v. Wallace*, 705 F.2d 1526 (11th Cir. 1983), *cert. denied sub nom. Board of School Comm'rs v. Jaffree*, 466 U.S. 926 (1984); *Jaffree v. James*, 554 F. Supp. 1130 (S.D. Ala.), *aff'd in part, rev'd in part sub nom. Jaffree v. Wallace*, 705 F.2d 1526 (11th Cir. 1983), *aff'd*, 472 U.S. 38 (1985), 466 U.S. 924 (1984).

To avoid confusion resulting from the complicated procedural history of this case, all citations have been and will be to the 11th Circuit opinion in *Smith v. Board of School Comm'rs*, 827 F.2d 684 (11th Cir. 1987), where the court was able to set out clearly the issues raised by the various opinions in this litigation.

246. *Smith*, 129 F.2d at 690.

247. *Id.* See *supra* note 243 for a discussion of the district court decision. A similar challenge, on much smaller scale, had been made somewhat earlier in a Washington school district, objecting to the use of *The Learning Tree* by Gordon Parks in a high school English class. Although the student who found the book offensive to her religious beliefs was given permission to leave the room when the book was discussed, she chose not to do so and her parents filed a formal complaint with the school district. Eventually, they brought suit under 42 U.S.C. § 1983, seeking damages and injunctive relief. The Court of Appeals found no great burden on plaintiffs' free exercise of religion. *Grove v. Mead School Dist.*, 753 F.2d 1528, 1533 (9th Cir.), *cert. denied*, 106 S. Ct. 85 (1985).

248. *Smith*, 827 F.2d at 690-91. The objection was primarily to a discussion of the process of making moral decisions, in particular that the validity of moral decisions was to be decided only by the student.

249. *Id.* at 693.

an establishment of religion.²⁵⁰ Applying the three-pronged test of *Lemon*, the court focused on the second prong: whether the governmental act had the primary effect of either advancing or inhibiting religion.²⁵¹ After examining the textbooks, the Eleventh Circuit found no indication that their primary effect or purpose was to establish or inhibit a religion.²⁵² Regarding the home economics textbooks, which were found to have an undisputedly nonreligious purpose, the court held that the state's effort to instill the values of independent thought, tolerance of diverse views, self-respect and self-reliance was "an entirely appropriate secular effect" and did not represent an endorsement of secular humanism.²⁵³ Similarly, in reviewing the history and social studies textbooks, the court stated that the failure of these books to discuss certain historical facts regarding religion could not convey an endorsement of secular humanism.²⁵⁴ In conclusion, the court found nothing in the record which indicated that the choice of textbooks constituted an advancement of secular humanism or hostility toward religion.²⁵⁵

The second recent case is *Mozert v. Hawkins County Board of Education*,²⁵⁶ a Tennessee case which also challenged the use of certain textbooks, this time on a free exercise claim. Plaintiffs argued that the use of textbooks which espouse certain tenets of secular humanism confronted their children with ideas contrary to the parents' religion and interfered with their free exercise of religion.²⁵⁷ Among the challenged ideas were evolution, "futuristic supernaturalism," pacificism, magic, false views of death, and the role of women. In addition, there was an objection to a description of Leonardo da Vinci as a human whose creativity approached the divine and to stories which encouraged children to use their imaginations.²⁵⁸ The court, noting the extremely broad range of ideas to which the plaintiffs would object, held that simply being exposed to ideas contrary to one's religion could not be an interference with the free exer-

250. *Id.* at 689, 695.

251. *Id.* at 690.

252. *Id.* at 692, 694.

253. *Id.* at 692.

254. *Id.* at 693. The court also noted that even if one goal of secular humanism were to downplay the role of religion in American history, any benefit that goal received from the use of these textbooks was "merely incidental." *Id.*

255. *Id.* at 694.

256. 827 F.2d 1058, 1064 (6th Cir. 1987), *cert. denied*, 108 S. Ct. 1029 (1988). On February 23, 1988, the United States Supreme Court denied certiorari in *Mozert*, without comment and without recorded dissent. Since the Court's refusal to hear the case sets no precedent, many believe that there will continue to be challenges to public school curricula. Taylor, *Court Won't Hear Tennessee Textbook Case*, N.Y. Times, Feb. 23, 1988, § 1, at 1.

257. *Mozert*, 827 F.2d at 1060-61.

258. *Id.* at 1062.

cise of religion.²⁵⁹ Furthermore, although plaintiffs had suggested that a more balanced approach might be satisfactory to them, the court stated that, in its opinion, the only way to avoid the alleged conflict would be to eliminate all references to these subjects from the curriculum, a constitutionally impermissible alternative.²⁶⁰

Finally, a third case which approached the issue from a different legal viewpoint has recently been filed in the United States District Court for the Northern District of Illinois. In that case, *Webster v. New Lenox School District No. 122*,²⁶¹ a teacher is seeking injunctive and declaratory relief to force the school district to permit him to teach creation-science in his social studies classes.²⁶² The case arose when a student in the teacher's class complained to her parents that the teacher was teaching creationism; her complaint was later taken up by the ACLU and Americans United.²⁶³ Interestingly, the complaining teacher is not arguing his case on an establishment or free exercise claim but is, rather, arguing that the school's prohibition interferes with his first amendment rights of free speech and academic freedom.²⁶⁴ The teacher claims the right to teach three religiously oriented subjects: the influence of religion in the founding of the United States, the religious ideas of Jefferson and Franklin, and creation-science.²⁶⁵ In response, the school superintendent agreed that

259. *Id.* at 1063-65.

260. *Id.* at 1064.

261. No. 88C2328 (N.D. Ill., filed Mar. 21, 1988).

262. Complaint at 4-5, *Webster v. New Lenox School Dist. No. 122*, No. 88C2328 (N.D. Ill., filed Mar. 21, 1988).

263. *Id.* at 2. See also Kamin, *Teacher sues to use creationism*, Chicago Tribune, Mar. 22, 1988, § 2 at 1, col. 1. The reporter noted that a "similar" case was filed last year in St. Cloud, Minnesota, and discussed the "counteroffensive" being conducted by creationists as a response to the activities of the ACLU. The article quoted the chairman of the Midwest Creation Fellowship as believing that such action was necessary to counteract the "campaign of 'intimidation'" of the ACLU. *Id.*

264. Complaint at 4-5, *Webster v. New Lenox School Dist. No. 122*, No. 88C2328 (N.D. Ill., filed Mar. 21, 1988). The school district, on the other hand, as can be seen from its two letters to Webster, has consistently viewed the issue as a church/state conflict. In its original letter to Webster, the school district complained about the challenged materials as advocating "a Christian worldview of government, history and science." Nevertheless, the ultimate decision of the school district was to permit the use of all the challenged materials except those relating to creationism. *Id.* at Exhibits A and C.

265. *Id.* at Exhibit B. at 2-3. The Court has anticipated Webster's argument by some twenty years. In *Epperson*, the Court stated that

[w]hile study of religions and of the Bible from a literary and historical viewpoint, presented objectively as part of a secular program of education, need not collide with the First Amendment's prohibition, the State may not adopt programs or practices in its public schools or colleges which "aid or oppose" any religion.

Epperson v. Arkansas, 393 U.S. 97, 106 (1968). Two decades earlier, in his concurring opinion in *McCullum*, Justice Jackson stated that,

[t]he fact is that, for good or for ill, nearly everything in our culture worth transmitting, everything which gives meaning to life, is saturated with religious influences, derived from paganism, Judaism, Christianity—both Catholic and Protestant—and other faiths accepted by a large part of the world's peoples. One can hardly respect a system of education that

the teacher could teach the first two ideas, but not the third, citing federal court decisions that such teaching was "religious advocacy."²⁶⁶ Since the Supreme Court has not yet addressed the issue of whether a teacher's academic freedom permits the teaching of creationism, it is not absolutely clear how this case will come out. The Court said in *Edwards* that requiring the teaching of creationism along with evolution did not further academic freedom;²⁶⁷ it did not, however, say whether academic freedom would support the teaching of creationism at all. Perhaps this case will require a more clearly stated declaration that creationism is a religious doctrine which may not, whether through academic freedom or otherwise, be taught in the public schools.

As can be seen from these cases, the conflict that began sixty years ago in a small Tennessee courtroom is not likely to disappear soon. Conservative Christians are determined to transform the public schools, and the courts will almost undoubtedly continue to be faced with this issue in its varying formats. For example, James Woods of the *Journal of Church and State* notes with concern the broad scope of the textbooks which are being challenged. Among the classics of literature to which he cites challenges, are *Oliver Twist*, *The Merchant of Venice*, *The Miller's Tale* by Chaucer, Aristophanes' *Lysistrata*, and *The Color Purple*.²⁶⁸ It is Woods' theory that there is a "paranoid conspiracy" which will simply attach the label "secular humanism" to anything with which the fundamentalists

would leave the student wholly ignorant of the currents of religious thought that move the world society for a part in which he is being prepared.

But how one can teach, with satisfaction or even with justice to all faiths, such subjects as the story of the Reformation, the Inquisition, or even the New England effort to found "a Church without a Bishop and a State without a King," is more than I know. It is too much to expect that mortals will teach subjects about which their contemporaries have passionate controversies with the detachment they may summon to teaching about remote subjects When instruction turns to proselyting [sic] and imparting knowledge becomes evangelism is, except in the crudest cases, a subtle inquiry.

McCollum v. Board of Educ., 333 U.S. 203, 236 (1948) (Jackson, J., concurring).

Although this case is certainly not among the "crudest" cited by Justice Jackson, it seems that the case law of the forty years since *McCollum* would make it less subtle than it might have been before cases such as *Edwards*.

266. *Id.* at Exhibit C at 1. The School District said, "[y]ou may discuss the historical relationship between the church and state, but only in a purely objective manner without advocacy of a Christian viewpoint and only if such discussion is an appropriate part of the standard curriculum." *Id.*

267. *Edwards v. Aguillard*, 107 S. Ct. at 2573. In reaching this conclusion, the Court noted with approval the Fifth Circuit Court of Appeals' comment in *Edwards* that "[a]cademic 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.* at n.6. However, the Court also noted that in Louisiana, as in many school systems, the state or the school district sets curricula, not the teachers. In such a context, the Court said, academic freedom is not a relevant concept. *Id.* Accordingly, given the school district's opposition, it is not at all certain that an argument based on academic freedom will prevail in this situation.

268. Woods, *Religious Fundamentalism and the Public Schools*, 29 J. CHURCH & ST. 7, 9 (1987).

disagree. Creationists will then, he believes, make a challenge on establishment grounds to whatever they have so labelled.²⁶⁹ Woods fears that the public schools, subjected to wholesale indictments for their neutrality toward religion, may in fact be an "endangered species."²⁷⁰

Similarly, Leo Pfeffer also believes that the Supreme Court's failure to clarify the issue of secular humanism encourages fundamentalist assaults on public school teachers and administrators.²⁷¹ Pfeffer notes that there has already been a challenge to the showing of *Romeo and Juliet*, not to mention challenges to the very funding of public schools. Those challenging government funding of public school reason that since the schools are publicly funded and endorse the "religion" of secular humanism, then religious schools should also be funded by the government.²⁷² Pfeffer concludes that the problem will not be resolved until the Supreme Court makes a definitive statement as to the nature of secular humanism.²⁷³

The chilling effect on public school education from the threat of fundamentalist litigation is visible in other areas. For example, certain textbook publishers, including the company which published the series of books challenged in *Mozert*, have begun to practice self-censorship of their materials, hoping to avoid legal challenges to the texts.²⁷⁴ It is not difficult to conceive of other actions which could be taken to avoid adverse reaction. Hiring and tenure decisions, inclusion of certain subjects within the curriculum, and selection of dramas for production in public schools are all areas in which public school officials could easily refuse to risk making potentially controversial choices. They have as yet received little guidance from the Supreme Court in making such decisions.

Yet even if the Supreme Court were willing to define secular humanism or religion, significant difficulties remain. As one religious scholar has analyzed in great detail, the perspectives from which judges, theologians and social scientists view these issues are irreconcilably different.²⁷⁵ According to this thesis, the essential difficulty in resolving this problem lies in the underlying and unanswered questions regarding such ideas as

269. *Id.* at 11, 16.

270. Woods, *supra* note 268, at 401, 409.

271. Pfeffer, *supra* note 237, at 503.

272. *Id.* at 503-04.

273. *Id.* at 500.

274. Note, *Appealing to a Higher Law: Conservative Christian Legal Action Groups Bring Suit to Challenge Public School Curricula and Reading Materials*, 18 RUTGERS L.J. 437, 460 (1987).

275. Becker, *supra* note 121, at 315.

the nature of knowing.²⁷⁶ This conflict will not be resolved, this theory concludes, without analyzing each question in terms of the fundamental philosophical and religious assumptions which support modern science and fundamentalism.²⁷⁷ Similarly, a legal scholar has analyzed the difficulty in resolving this controversy in terms of the differing worldviews of the parties to the conflict.²⁷⁸ He calls for the Court to define the nature of science and religion, and posits that creation-science may actually be, in some senses, a type of science.²⁷⁹

Ultimately, however, if that conclusion and the positions advocated by the creationists were adopted by the Court, the results could be disastrous. If, for example, creationism were to be accepted as science, the educational system would be far more drastically affected than it was in the period from *Scopes* to Sputnik. Evolution, the basis for the modern biosciences, would be officially countered by a purported scientific truth that denies the validity of much of basic science. In learning creationism, students would be taught that radiometric data is unreliable, that fossils are not what they appear to be, and that the scriptural cadences of *Genesis* are the sum total of biological and geological science. And, perhaps most devastating of all, the scientific curiosity which has propelled the search for knowledge throughout recorded history would be destroyed by a system which declares that all scientific answers are to be found in an infallible Biblical reading that comprises eleven short chapters. Evolution, with its competing theories of speciation and built-in controversies, could never survive this onslaught of infallible truth. Science as we know it would disappear from the schools, stifled by a new inquisition which, in effect if not in rhetoric, denies all truth but its own.

Similarly, if the Court were to declare that secular humanism was a religion whose dogmas and doctrines must be banned from the schools, the public school as an institution would be obliterated. Educators are already concerned that our schools are failing to educate students in the foundations of their culture.²⁸⁰ Under a holding that secular humanism is religion, not only would science be gutted, but the secular tradition, dating from the rediscovery during the Renaissance of Greek and Latin culture, would be, as religious doctrine, improper subject matter for the public schools. The great humanist thinkers, from Plato to Aristotle to

276. *Id.* at 320.

277. *Id.* at 332.

278. Caudill, *Law and Worldview: Problems in the Creation-Science Controversy*, 3 J.L. & RELIGION 1 (1985).

279. *Id.* at 36.

280. See, e.g., A. BLOOM, *THE CLOSING OF THE AMERICAN MIND* (1987).

Newton and Jefferson, would all become apostles and theologians of a forbidden religious tradition. Literary and philosophical ideas which have formed the intellectual infrastructure of Western culture for centuries would be banned as religious dogma. Carried to its extreme, a view of secular humanism as religion would leave virtually no subject available to the public schools. For, whatever else can be said, it is certainly true that the secular and the sacred are opposites; what is not one is necessarily the other. If both are forbidden to the schools, then there is nothing left for the schools to teach and they must therefore cease to exist.

Thus, it is clear that the Supreme Court will one day be forced to provide greater guidance on the issues of religion, science and secular humanism. Because the Court did not address the matter clearly in *Edwards v. Aguillard*,²⁸¹ these issues will remain clouded for the foreseeable future. Therefore, not only will the lower courts continue to be faced with cases arising from challenges to the practices of the public schools, but educators, textbook publishers, and others involved with the public schools will be unable to determine with any certainty the permissible bounds of public school education. Failing to provide the necessary guidance, the Court will subject the public school system and the lower courts to unending controversy and uncertainty which will result in a poor use of the resources of both the judicial and educational systems.

VI. CONCLUSION

The conflict between the supporters of creation-science and conservative Christianity, and those who support mainstream science and the theory of evolution rages on. Despite its internal inconsistency and lack of scientific underpinnings, the creationist theory has seen moderate acceptance in some sectors of the country. The judicial and scholarly reaction to creation-science, however, has been deservedly reserved. Fundamentalists, thus far unsuccessfully, have argued that evolution represents an establishment of the religion of secular humanism. Nevertheless, textbook challenges and other fundamentalist challenges to the public school curriculum will continue to arise in the same context as does the creation/evolution controversy. The courts remain confronted with the difficult task of defining the underlying issues in this controversy, a task which the Supreme Court must one day undertake, regardless of the difficulty involved.

281. 107 S. Ct. 2573 (1987).