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Of Pandas, People, and the First Amendment: The Constitutionality of Teaching Intelligent Design in the Public Schools

Jay D. Wexler*

Despite the Supreme Court's 1987 decision in Edwards v. Aguillard, striking down Arkansas' statute requiring equal time for the teaching of creationism and evolution, the debate over whether some form of creationism should be taught in public schools has recently enjoyed a resurgence. In this note, Jay Wexler applies the Supreme Court's Establishment Clause to a new variant of creationism that posits the existence of an intelligent designer as an alternative to evolution. Wexler argues that teaching intelligent design theory in the public schools violates the Establishment Clause. After explaining that the Supreme Court has always applied the Establishment Clause with extra vigilance in the public school context, Wexler argues that intelligent design, because it posits a being who created life and seeks to answer fundamental questions about human existence, constitutes a religious belief that cannot be constitutionally taught in public schools. Wexler rejects the argument that intelligent design teaches science and not religion on the grounds that whether or not intelligent design teaches a nominally scientific theory, it still violates the Establishment Clause by sending a forbidden message of exclusion to atheists and non-Christians. Finally, Wexler suggests that creationists and evolutionists should recognize the divisiveness caused by disputes over religion and take steps to reduce this divisiveness both inside and outside the classroom.

INTRODUCTION

When about two hundred citizens of Plano, Texas arrived at an emotionally charged school board meeting on the evening of February 7, 1995, many of them were wearing buttons with a big red "X" emblazoned over the image of a

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panda.¹ They wore these buttons not because they hated wildlife, but rather because they had come to discuss whether the trustees of the Plano Independent School District could purchase *Of Pandas and People: The Central Question of Biological Origins*,² a biology textbook that presents the theory of intelligent design as an alternative to evolution.³ When the meeting finally ended past midnight on February 8, the board had voted unanimously to bar trustees from purchasing the textbook unless specifically requested to by a district staff member,⁴ essentially ending the debate in Plano over whether the book would be used in the district's biology classrooms.⁵

Religious conservatives may have lost this small battle in Plano,⁶ but they have been playing an increasingly important role in local school controversies throughout the country. Religious conservatives sit on school boards in many states and form a majority of the boards on many counties.⁷ According to one estimate, Christian conservatives already control over 2000 local school boards.⁸ Although much of the controversy regarding religion in the public schools continues to focus on issues of school prayer and sex education,⁹ creationist teaching has once again surfaced in these debates.¹⁰ In 1992, a Vermont school board member pushed through a motion that would have required teach-

1. See Alexei Barrionuevo, *Trustees Kill Plan to Buy Divisive Book; Plano Biology Teachers Won't Receive Copies*, DALLAS MORNING NEWS, Feb. 8, 1995, at 1A, available in LEXIS, Nexis Library, News File.

2. PERCIVAL DAVIS & DEAN H. KENYON, *OF PANDAS AND PEOPLE: THE CENTRAL QUESTION OF BIOLOGICAL ORIGINS* (2d ed. 1993).

3. Trustees had first called for the school board to consider using the text as a supplement to the biology curriculum. See Alexei Barrionuevo, *Plano Trustee Delays Discussion of Controversial Science Text*, DALLAS MORNING NEWS, Feb. 7, 1995, at 24A, available in LEXIS, Nexis Library, News File. Following criticism from a group called Keep Quality in Plano Schools, which depicted the book as a veiled attempt to introduce religious dogma into the science classroom, the trustees instead asked the board to consider buying the book so that teachers in the district could review it for possible adoption. See *id.* Although a 4-member majority of the school board supported using the book as a supplement, the board ultimately tabled the issue as too divisive. See Barrionuevo, *supra* note 1, at 1A.

4. See *id.*

5. See *id.*

6. Plano residents dealt another blow to intelligent design advocates in a May 1996 school board election. The election pitted an incumbent school-board member who opposed the use of *Pandas* in the classroom against a professor at the University of Texas at Dallas who had no objections to the book. See Stephen Power, *Lines Drawn in Trustee Race; Evans, Midgley Express Few Kind Words at Forum*, DALLAS MORNING NEWS, Apr. 4, 1996, at 1F, available in LEXIS, Nexis Library, News File. The intelligent design friendly candidate lost. See Stephen Power, *High Marks for First Year; Even Superintendent's Critics Call Debut a Success*, DALLAS MORNING NEWS, June 14, 1996, at 1K, available in LEXIS, Nexis Library, News File.

7. See Laurel Shaper Walters, *Religious Right Win Seats on School Boards Across the US*, CHRISTIAN SCI. MONITOR, Aug. 9, 1993, at 1 (noting that conservative religious groups are waging a grass-roots campaign to elect conservative candidates to community school boards); see also People for the American Way, *Attacks on the Freedom to Learn '96* (last modified Sept. 5, 1996) <<http://www.pfaw.org/attacks/httoc.htm>> (tracking the involvement of the Religious Right in public education).

8. See Edward Helmore, *Right Stokes New Creationist Row*, INDEPENDENT (London), July 30, 1995.

9. See *Right Wing Targets Schools, Say Censorship Opponents: Prayer, Creationism, Vouchers Cited in Survey*, SAN JOSE MERCURY NEWS, Sept. 5, 1996, at 5A.

10. See *id.* On the general resurgence of creationism in the United States, see Colin Campbell & Deborah Scroggins, *Very Weird Science*, PLAYBOY, Dec. 1995, at 70.

ers to teach creationism.¹¹ In August of 1993, the Board of Education in Vista, California voted to implement a creationism requirement as part of the science curriculum.¹² The school board in Louisville, Ohio urges its teachers to present students with "alternate theories to evolution."¹³ And in 1996, Alabama passed a law requiring all biology textbooks to include a disclaimer stating that evolution is a "controversial theory" accepted by "some scientists,"¹⁴ while New Hampshire considered a bill that would have made it illegal to teach evolution without parental consent.¹⁵ Even where school boards and state legislatures have not weighed in on the creationist controversy, more and more public school teachers are opting to deal with the growing debate by teaching neither evolution nor any alternative theories on the origins of humankind.¹⁶ Watchdog groups such as the National Center for Science Education in Berkeley, California and the Americans United for Separation of Church and State continue to challenge creationists,¹⁷ while the Christian Coalition and other groups such as the Foundation for Thought and Ethics, the Richardson, Texas-based group which publishes *Pandas*, stand firm on the other side.¹⁸ Both sides employ spirited rhetoric. "[S]chool science classes should remain as free from creationism as they are from flat Earth geology,"¹⁹ states an opponent of *Pandas*. A Merrimack, New Hampshire school board member counters: "If you're only going to teach evolution, then your God is King Kong."²⁰

How can teaching creationism in the public schools still be an issue despite the Supreme Court's 1987 decision in *Edwards v. Aguillard*²¹ striking down a Louisiana statute that required teachers to give equal time to creationism and evolution?²² The resurgence of this debate is explained in part by the new strategy creationists have adopted for introducing creationist ideas into the classroom. The creation science doctrine that was popular among creationists in the 1980s has been replaced with the theory of intelligent design,²³ a theory

11. See Richard Saltus, *Educator Reports on Creationism*, BOSTON GLOBE, Feb. 14, 1993, at 36. Fear of legal challenges prompted the quick rescission of the motion. See *id.*

12. See David Tuller & Susan Yoachum, *Evolution Debate in San Diego Suburb: School Board's Christian Majority Wants Creationism in the Curriculum*, S.F. CHRON., Sept. 14, 1993, at A1.

13. Kenneth R. Miller, *Life's Grand Design*, TECH. REV., Feb./Mar. 1994, at 24, 26.

14. Michael D. Lemonick, *Dumping on Darwin*, TIME, Mar. 18, 1996, at 81.

15. See Ian Katz, *Monkey Retrial*, GUARDIAN, Apr. 11, 1996, at 2.

16. See Jessica Mathews, *Creationism Makes a Comeback*, WASH. POST, Apr. 8, 1996, at A21.

17. See Erik Larson, *Darwinian Struggle: Instead of Evolution, a Textbook Proposes "Intelligent Design"*, WALL ST. J., Nov. 14, 1994, at A1.

18. See *id.*

19. Edward E. Max, Letter to Editor, *Of Pandas, People . . . and a Final Word on Evolution*, WASH. TIMES, Oct. 22, 1995, at B5, available in LEXIS, Nexis Library, News File.

20. Bill Lambrecht, *Control of Schools is "Values" Lesson in Many Elections*, Sr. LOUIS POST-DISPATCH, Nov. 5, 1995, at 1A (quoting school board member Virginia Twardosky). And, during the 1996 Republican primaries, candidate Pat Buchanan momentarily thrust the creationism controversy from the small towns and grassroots battles into the national spotlight, demanding that parents "have a right to insist that Godless evolution not be taught to their children." Katz, *supra* note 15, at 2.

21. 482 U.S. 578 (1987).

22. See *id.* at 596-97.

23. See Ben Macintyre, *Darwin v. Designers: The New Struggle for Cultural Supremacy*, TIMES (London), Dec. 19, 1994, at 7 (pointing to creationism's reemergence with renewed vigor in the form of intelligent design); Miller, *supra* note 13, at 25 (calling intelligent design a "new movement . . . to counter the scientifically accepted theory that living organisms evolved to their present forms").

that has its roots in William Paley's classic work *Natural Theology*²⁴ and that has been thrust into the modern debate by *Of Pandas and People*.²⁵ Simply put, proponents of intelligent design argue that the world and its creatures are far too complex to have arisen through random patterns of evolution and must be the product of some intelligent designer. To use a common example drawn from Paley's work, if we were to come across a stone on a beach we might reasonably believe that the stone had lain on the beach forever. However, if we were to come across a watch on the beach, we could only reasonably conclude that someone had designed the watch.²⁶ Like the watch, such complex natural phenomena as the human eye, the bat's sonar system, the bee's colony, and the spider's web are so intricate and perfect that an intelligent designer must have created them.²⁷ Because intelligent design theory does not necessarily rely on any particular conception of the designer and does not require belief in any particular biblical story, such as the six-day creation²⁸ or great flood,²⁹ intelligent design theory is put forth as science, not religion, and thus as a worthy complement to evolution in the classroom. *Of Pandas and People* reflects just this position.³⁰

Two biologists, Percival Davis and Dean H. Kenyon, wrote *Pandas* in 1989.³¹ The Foundation for Thought and Ethics published a second, and more widely distributed, version in 1993. The book critiques evolutionary explanations for the origin of life, genetics, the fossil record, and macroevolution, at each step positing that the theory of intelligent design better explains natural phenomena than evolution does. However, the book mentions no biblical story

24. WILLIAM PALEY, *NATURAL THEOLOGY* (New York, Harper & Brothers 1845).

25. See, e.g., Alexei Barionuevo, *Science Book Creating Dissent; Plano Considering Text that Foes Criticize as Dogma; Backers Say it Balances Evolution*, DALLAS MORNING NEWS, Jan. 12, 1995, at 1A, available in LEXIS, Nexis Library, News File (reporting criticism of *Pandas* as "a thinly disguised version of creationism"); Tim Beardsley, *Darwin Denied: Opponents of Evolution Make Gains in Schools*, SCI. AM., July 1995, at 12 (describing intelligent design as a "new weapon" in the creationist arsenal); Joan Biskupic, *Justices' Reach Extends to Biology Lessons: Ruling on Teaching Creationism Has Quietly Battle as Schools Drop Subject to Avoid Lawsuits*, WASH. POST, Oct. 2, 1993, at A3 (describing the endurance of the creation-science debate); Larson, *supra* note 17, at A1 (labeling the book "either an unflinching scientific look at flaws in evolutionary theory or the advance wedge of a new effort to return old-time religion to U.S. schools").

26. 1 PALEY, *supra* note 24, at 37-38:

In crossing a heath, suppose I pitched my feet against a *stone*, and were asked how the stone came to be there, I might possibly answer, that, for anything I knew to the contrary, it had lain there for ever But suppose I had found a *watch* upon the ground, and it should be inquired how the watch happened to be in that place, I should hardly think of the answer which I had before given, that, for anything I knew, the watch might have always been there. . . . [W]hen we come to inspect the watch, we perceive (what we could not discover in the stone) that its several parts are framed and put together for a purpose

Id. at 37 (footnote omitted).

27. For a discussion of natural complexity by a fervent critic of Paley, see RICHARD DAWKINS, *THE BLIND WATCHMAKER* 1-18 (1986).

28. See *Genesis* 1:1-1:31.

29. See *id.* 7:1-7:24.

30. See DAVIS & KENYON, *supra* note 2, at 160-61 ("[T]he concept of design implies absolutely nothing about beliefs normally associated with Christian fundamentalism All it implies is that life had an intelligent source.")

31. See Larson, *supra* note 17, at A1. The status of the authors as biologists has been controversial, given their religious backgrounds and agenda. See text accompanying notes 112-121 *infra*.

or other particular conception of the creator. The authors only go so far as to say that "life, like a manufactured object, is the result of intelligent shaping of matter."³² The book also refuses to reject explicitly evolution and instead invites students to make up their own minds about the origin of species. As the authors say in the introduction: "By now you are aware that you have a mind of your own. Here is a good opportunity to use it."³³

Apparently, many students throughout the country have received this invitation. Jon Buell, the book's publisher, claims that more than 22,000 copies of the book are in print and that sales have been made to teachers and curriculum designers in forty-eight states.³⁴ He also claims that at least fifteen school districts have ordered enough books to indicate that they are using them in the classroom,³⁵ though Buell refuses to reveal where these school districts are located.³⁶ They are most likely not in Idaho, a state which rejected the book after heated controversy in 1993.³⁷ They might be in Alabama. When the book was introduced there that same year, supporters, including Phyllis Schlafly's Eagle Forum, presented the state textbook committee with a petition signed by over 11,000 people endorsing intelligent design.³⁸ They might also be in Ohio. In September 1994, residents of Louisville, Ohio voted to urge the local school board to adopt the book as a supplement to the teaching of evolution,³⁹ and the school district has accepted a donation of between 100 and 150 copies.⁴⁰ Other school districts in Ohio and Washington have also at least considered purchasing *Pandas*.⁴¹

But the question remains: Is teaching intelligent design in public school classrooms constitutional? The authors, of course, claim that it is. In fact, the authors devote eight pages to arguing that the book espouses a valid scientific theory that may, under the Supreme Court's decision in *Edwards*, be constitutionally taught in public schools as an alternative to evolution.⁴² The authors attempt to counter the conception of evolution as fact or science and the opposite conception of intelligent design as religion. In the closing passages of the book, the authors argue that the teaching of *Pandas* does not violate the First Amendment:

A final misconception you may encounter is that intelligent design is simply sectarian religion. According to this view, intelligent design is merely fundamentalism with a new twist; teaching it in public schools allegedly violates the separation of church and state.

This view is wide of the mark. The idea that life had an intelligent source is hardly unique to Christian fundamentalism. Advocates of design have in-

32. DAVIS & KENYON, *supra* note 2, at vii.

33. *Id.* at ix.

34. See Larson, *supra* note 17, at A1.

35. See *id.*

36. See Beardsley, *supra* note 25, at 12.

37. See Larson, *supra* note 17, at A1.

38. See *id.*

39. See *id.*

40. See Beardsley, *supra* note 25, at 12.

41. See Lemonick, *supra* note 14, at 81.

42. See DAVIS & KENYON, *supra* note 2, at 153-61.

cluded not only Christians and other religious theists, but pantheists, Greek and Enlightenment philosophers and now include many modern scientists who describe themselves as religiously agnostic. Moreover, the concept of design implies absolutely nothing about beliefs normally associated with Christian fundamentalism, such as a young earth, a global flood, or even the existence of the Christian God. All it implies is that life had an intelligent source.⁴³

Not surprisingly, evolutionists do not share this attitude toward intelligent design. Many critics of creationism, such as Raymond Vasvari of the ACLU and Eugenie Scott of the National Center for Science Education, have spoken out against the book and the theory.⁴⁴ It seems inevitable that the dispute over *Pandas* will eventually reach the American judicial system. Scott predicts that "[s]ooner or later we are going to have to go to court over *Pandas*."⁴⁵ Observes another commentator, "[g]iven the depth of feeling on both sides, perhaps nine important justices in Washington had better start reading up on intelligent design."⁴⁶

This note argues that teaching the intelligent design theory of *Pandas* in the public schools violates the First Amendment. Under the Supreme Court's Establishment Clause jurisprudence, teaching intelligent design in public schools constitutes an inappropriate endorsement of religious belief, rather than simply the communication of an alternative scientific theory. The note proceeds in four Parts. Part I briefly relates the history of creationism in the United States and its treatment by American courts. Part II describes *Pandas* and the intelligent design theory it espouses. Part III explores the Supreme Court's Establishment Clause jurisprudence, with particular attention to the public school context, and posits alternative reasons why *Pandas* espouses a religious viewpoint that cannot be taught in public schools. Part IV takes up the question of whether *Pandas* qualifies as science and determines that this question is constitutionally irrelevant. Finally, the note concludes with a critique of some evolutionists' antireligious agendas and urges the reconciliation of religion and evolution outside of the public school classroom.

I. CREATIONISM IN AMERICA

Although the intelligent design theory espoused in *Pandas* represents a new line of attack against evolutionary biology, it is but the latest chapter in a long tradition of creationist thought that began shortly after Darwin published his *Origin of Species*⁴⁷ in 1859 and that has been the source of considerable social and judicial strife ever since.⁴⁸ The social meaning of *Pandas* relates closely to

43. *Id.* at 161 (footnotes omitted).

44. See Larson, *supra* note 17, at A1.

45. Beardsley, *supra* note 25, at 14 (quoting Eugenie Scott).

46. *Id.* at 14.

47. CHARLES DARWIN, ON THE ORIGIN OF SPECIES (photo. reprint 1964) (1859).

48. Long before Darwin, the idea that the complexity of life's creatures proved the existence of God captivated many theologians, including St. Thomas Aquinas, whose "fifth way" of proving the existence of God was an early version of the intelligent design theory. See ST. THOMAS AQUINAS, SUMMA THEOLOGICA 14 (Fathers of the English Dominican Province trans., Benzinger Bros., Inc., Am. ed. 1947) (1920) ("[T]hings which lack intelligence, such as natural bodies, act for an end . . . Now

its historical roots and necessitates a review of the history of creationist thought over the last century.

The publication of Darwin's magnum opus forced religious leaders and scientists to reexamine their traditional beliefs. Many found some way to reconcile evolution with their religious beliefs.⁴⁹ Devoted Christian scientists found numerous ways to reconcile evolution with a belief in God, including an understanding of evolution as divinely guided or a reading of each "day" of Genesis as a single epoch in cosmic history.⁵⁰ Even religious leaders did not insist on denying, at least in print, that the earth was millions of years old or that the fossil record revealed a natural progression;⁵¹ some even believed that evolution proved the existence of God.⁵²

Not until the 1920s did Christian conservatives, led by William Jennings Bryan, begin to seriously attack evolution in the public sphere.⁵³ Because of the early acceptance of evolution by scientists, high school biology textbooks before Bryan generally presented evolution in a favorable light.⁵⁴ But scientific difficulty in reconciling Darwinian evolution with newly rediscovered Mendelian genetics⁵⁵ and the increasing hostility of rural America toward the industrialized and urbanized Northeast, where evolution was most widely accepted,⁵⁶ fueled Bryan's attack on evolution during the early 1920s.⁵⁷ Bryan was a natural leader of the growing movement against evolution. A strict Presbyterian, Bryan believed passionately that evolution was not only a flawed explanation for the origin of man, but also a dangerous one.⁵⁸ He began his nationwide crusade against evolution in 1921 with his lecture "The Menace of Darwinism." His presentations employed an argument very similar to that of

whatever lacks intelligence cannot move towards an end, unless it be directed by some being endowed with knowledge and intelligence; as the arrow is shot to its mark by the archer.") For the classic attack on this argument, see DAVID HUME, *DIALOGUES CONCERNING NATURAL RELIGION* 174-94 (Norman Kemp Smith ed., Oxford Univ. Press 1935) (1779). For historical discussions of intelligent design, see JOHN HICK, *ARGUMENTS FOR THE EXISTENCE OF GOD* 1-36 (1971) and THOMAS MCPHERSON, *THE ARGUMENT FROM DESIGN* 1-14 (1972).

49. See RONALD L. NUMBERS, *THE CREATIONISTS: THE EVOLUTION OF SCIENTIFIC CREATIONISM* 3-19 (1992) (describing reactions to evolution in the years following the publication of *On The Origin of Species*).

50. See *id.* at 10-13, 17; Sidney Ratner, *Evolution and the Rise of the Scientific Spirit in America, in SCIENCE AND CREATIONISM* 398, 405-06 (Ashley Montagu ed., 1984).

51. See NUMBERS, *supra* note 49, at 17.

52. See John R. Cole, *Scopes and Beyond: Antievolutionism and American Culture, in SCIENTISTS CONFRONT CREATIONISM* 13, 19 (Laurie R. Godfrey ed., 1983) (reporting that leading northeastern religious leaders in the nineteenth century praised evolution as "a remarkable proof of God's wisdom"); see also JON H. ROBERTS, *DARWINISM AND THE DIVINE IN AMERICA: PROTESTANT INTELLECTUALS AND ORGANIC EVOLUTION, 1859-1900*, at 81-87, 117-45 (1988) (describing evolution's acceptance among religious leaders after 1865 and its theologic implications).

53. See NUMBERS, *supra* note 49, at 41.

54. See *id.* at 39; Edward J. Larson, *Before the Crusade: Evolution in American Secondary Education Before 1920*, 20 *J. HIST. BIOLOGY* 89 (1987).

55. See Cole, *supra* note 52, at 18; see also NUMBERS, *supra* note 49, at 38 (noting late nineteenth and early twentieth century skepticism of Darwinian evolution); cf. *id.* at 38 (arguing that in light of these attacks on Darwinism, many antievolutionists began to suspect that liberal Christians had been too quick to embrace evolution).

56. See Cole, *supra* note 52, at 16-18.

57. See *id.*

58. See NUMBERS, *supra* note 49, at 41-44.

modern intelligent design proponents, namely, that the eye is too complex to have emerged from random patterns of evolution alone.⁵⁹

The evolutionist guesses that there was a time when eyes were unknown—that is a necessary part of the hypothesis. . . . [A] piece of pigment, or, as some say, a freckle appeared upon the skin of an animal that had no eyes. This piece of pigment or freckle converged the rays of the sun upon that spot and when the little animal felt the heat on that spot it turned the spot to the sun to get more heat. The increased heat irritated the skin—so the evolutionists guess, and a nerve came there and out of the nerve came the eye! Can you beat it?⁶⁰

Thousands of supporters, mostly from the agrarian South, joined Bryan in his fight against evolution.⁶¹ In tandem with organizations such as the Bryan Bible League, the Anti-Evolution League of America, and the Defenders of the Christian Faith, Bryan made significant headway in forcing evolution out of the public schools.⁶² By the decade's end, more than twenty state legislatures had debated antievolution laws, and three (Tennessee, Mississippi, and Arkansas) had passed laws prohibiting public schools from teaching evolution.⁶³

It was one of these laws, the Tennessee "Monkey Law,"⁶⁴ that gave rise to perhaps the most famous trial of the early twentieth century. John Scopes was arrested in 1925 for teaching evolution in a Dayton, Tennessee classroom.⁶⁵ Scopes agreed to allow the ACLU to use his case to challenge the law,⁶⁶ and William Jennings Bryan and Clarence Darrow faced off in a much publicized battle of wits,⁶⁷ with most agreeing that Darrow had the better of the battle.⁶⁸

59. *See id.* at 42-43.

60. WILLIAM JENNINGS BRYAN, *IN HIS IMAGE* 97-98 (1922).

61. *See* Cole, *supra* note 52, at 16. Many of Bryan's supporters opposed evolution even more strongly than Bryan. For example, another leader of the antievolution movement posited that [t]he honest, God-fearing taxpayers of this country need to realize the terrible, Bible-destroying, Christ-denying, soul-destroying scourge that is being spread among their children . . . God pity the fathers and mothers who will be brow-beaten and turned from their duty by these educational high-brows, and allow themselves to be scarged into submission and subjection by these Evolutionists and their bat-like, pussy footing apologists and defenders.

T.T. MARTIN, *HELL AND THE HIGH SCHOOLS: CHRIST OR EVOLUTION, WHICH?* 168 (1923).

62. *See* STEWART G. COLE, *THE HISTORY OF FUNDAMENTALISM* 259-80 (1931) (describing seven antievolution organizations active in the 1920s).

63. *See* NUMBERS, *supra* note 49, at 41; *see also* MAYNARD SHIPLEY, *THE WAR ON MODERN SCIENCE: A SHORT HISTORY OF THE FUNDAMENTALIST ATTACKS ON EVOLUTION AND MODERNISM* 370-91 (1927) (sketching the efforts of Fundamentalists in the 1920s to expunge evolution from the schools and urging a swift response); Maynard Shipley, *Growth of the Anti-Evolution Movement*, 32 *CURRENT HIST.* 330, 330-31 (1930) (reviewing the Fundamentalist campaign against teaching evolution).

64. Tenn. Code Ann. §§ 2344-45 (Michie 1934) (repealed 1967) (making it unlawful for public school teachers 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 descended from a lower order of animals" and setting fines for violators, respectively).

65. *See* Cole, *supra* note 52, at 14. Though Scopes claimed that he did not remember whether he had actually taught evolution, he agreed that he must have since he had taught biology and biology is inseparable from evolution. *See id.*

66. *See* EDWARD J. LARSON, *TRIAL AND ERROR: THE AMERICAN CONTROVERSY OVER CREATION AND EVOLUTION* 60-61 (1985).

67. For accounts of the trial, see generally L. SPRAGUE DE CAMP, *THE GREAT MONKEY TRIAL* (1968); RAY GINGER, *SIX DAYS OR FOREVER?: TENNESSEE V. JOHN THOMAS SCOPES* (1958).

68. *See* Cole, *supra* note 52, at 15 (noting that Bryan was mocked by the press, "an old statesman reduced to a laughing-stock").

Despite Darrow's apparent victory, Scopes was convicted and fined \$100 for his offense.⁶⁹ The Tennessee Supreme Court reversed the conviction on technical grounds but was careful to note that the antievolution law was consistent with principles of the Tennessee Constitution.⁷⁰

Perhaps because Scopes' conviction was overturned, or more likely because of Clarence Darrow's performance at the trial, supporters of evolution believed that the Scopes trial was a success.⁷¹ However, the legacy of the trial would prove otherwise. In the years following the trial, textbook publishers, afraid of losing sales, began eliminating or diluting their treatments of evolution.⁷² Local school boards shunned texts that continued to discuss evolution openly; "[t]he absence of controversial material, rather than scientific quality, determined book adoption by many school committees, and antievolutionists had learned to bring effective pressure on them."⁷³

The state of biology textbooks remained the same until the late 1950s, when the Soviet launch of Sputnik caused the United States government to rethink its entire science policy.⁷⁴ In 1959, in an effort to reinvigorate the nation's biology curriculum and to address the emerging "science gap" between the United States and the Soviet Union, the National Science Foundation funded the Biological Sciences Curriculum Study ("BSCS") at the University of Colorado to develop and publish high school biology textbooks.⁷⁵ In 1963-64, the BSCS published three textbooks (dealing with cellular biology, ecology, and molecular analysis) that were thoroughly permeated by evolutionary theory.⁷⁶ By 1970, nearly half of American high schools had adopted the BSCS books.⁷⁷ Creationists, however, launched a counterattack against the books, denouncing them as an "attempt to ram evolution down the throats of our children."⁷⁸ When Texas adopted the BSCS books, local creationists united in a series of emotional debates and persuaded the educational establishment to drop two of the three texts.⁷⁹ Creationists realized that they needed to produce a rival textbook and, by 1970, the Creation Research Society had published a book enti-

69. See *id.* at 14.

70. See *Scopes v. State*, 289 S.W. 363, 367 (Tenn. 1927). The Tennessee Supreme Court reversed the conviction because the Tennessee Constitution required that any fine over \$50 be assessed by a jury. See *id.* The court did not discuss whether the law was consistent with the U.S. Constitution.

71. See Cole, *supra* note 52, at 15.

72. See *id.* at 22; see also Judith V. Grabiner & Peter D. Miller, *Effects of the Scopes Trial: Was it a Victory for Evolutionists?*, 185 SCIENCE 832, 833 (1974) ("It is easy to identify a text published in the decade following 1925. Merely look up the word 'evolution' in the index or glossary; you almost certainly will not find it."); Gerald Skoog, *Topic of Evolution in Secondary School Biology Textbooks: 1900-1977*, 63 SCI. EDUC. 621, 628 (1979) (noting infrequent references to evolution as a fact or law between 1925 and the 1960s).

73. Cole, *supra* note 52, at 23.

74. See *id.* at 24.

75. See NUMBERS, *supra* note 49, at 238.

76. See Cole, *supra* note 52, at 24. On the BSCS project, see also LARSON, *supra* note 66, at 91, 95-98; DOROTHY NELKIN, *THE CREATION CONTROVERSY: SCIENCE OR SCRIPTURE IN THE SCHOOLS* 44-47 (1982).

77. See Cole, *supra* note 52, at 24.

78. NUMBERS, *supra* note 49, at 239 (quoting William J. Tinkle, *Formation of the Creation Research Society*, NATURALIST, Spring 1966, at 26, 31 (1966)).

79. See Cole, *supra* note 52, at 24.

tled *Biology: A Search for Order in Complexity*, a creationism text that enjoyed mixed success in the years following its publication.⁸⁰

Meanwhile, in 1968, the United States Supreme Court first considered the constitutionality of state laws that prohibited public schools from teaching evolution.⁸¹ Arkansas' antievolution statute, passed in 1928, prohibited any teacher in a public school from "teach[ing] the theory or doctrine that mankind ascended or descended from a lower order of animals."⁸² After the Little Rock school board adopted a textbook containing a chapter on evolution in 1965, high school biology teacher Susan Epperson realized that she was in a Catch-22: either she refused to teach the chapter in violation of school policy or she taught the chapter in violation of the antievolution statute.⁸³ To solve her dilemma, Epperson sought and received a declaration from the Arkansas Chancery Court that the law was void.⁸⁴ In a three sentence opinion, the Arkansas Supreme Court reversed.⁸⁵ The United States Supreme Court reversed once again.⁸⁶ Relying heavily on the position that "[t]he vigilant protection of constitutional freedoms is nowhere more vital than in the community of American schools,"⁸⁷ the Court invalidated the law because it was animated by a clear purpose to promote the teachings of the *Book of Genesis*.⁸⁸ Epperson essentially ended the movement, begun in the early 1920s, to ban evolution from the public schools.⁸⁹

In the wake of *Epperson*, creationists adopted a new strategy to safeguard the teaching of creationism in the public schools. Since the 1930s, creationists with scientific credentials, such as geologist George McCready Price, had sought scientific explanations and proof for the events described in *Genesis*.⁹⁰ "Flood Geology" or "Deluge Geology," one of the most popular theories espoused by Price and his followers, posited that much of the fossil record could be explained by a single catastrophic flood.⁹¹ Creationists employed Price's

80. See *BIOLOGY: A SEARCH FOR ORDER IN COMPLEXITY* (John N. Moore & Harold Schultz Slusher eds., 1970); see also *NUMBERS*, *supra* note 49, at 239-40. Thirty-five thousand volumes were printed in the first two printings. See *id.* at 240. The textbook's use was approved by several state textbook committees, including Indiana's. See *id.* An Indiana state court, however, later banned the book's use in public schools. See *id.*

81. See *Epperson v. Arkansas*, 393 U.S. 97 (1968).

82. ARK. STAT. ANN. §§ 80-1627 to -1628 (1960) (held unconstitutional in *Epperson*, 393 U.S. at 109). By 1968, only Arkansas and Mississippi still had antievolution statutes in force. See MISS. CODE ANN. §§ 6798-99 (1942) (held unconstitutional in *Smith v. State*, 242 So. 2d 692, 698 (Miss. 1970)).

83. See *Epperson*, 393 U.S. at 100.

84. See *id.* The Chancery Court's opinion was not officially reported.

85. See *State v. Epperson*, 416 S.W.2d 322 (Ark. 1967).

86. See *Epperson*, 393 U.S. at 109.

87. *Id.* at 104 (quoting *Shelton v. Tucker*, 364 U.S. 479, 487 (1960)).

88. See *id.* at 107-09. The Court explained: "[T]here is no doubt that the motivation for the law was the same [as in *Scopes*]: to suppress the teaching of a theory which, it was thought, 'denied' the divine creation of man." *Id.* at 109. In reaching this determination, the Court focused on an advertisement used during the campaign to adopt the bill. The advertisement stated in part: "THE BIBLE OR ATHEISM, WHICH? All atheists favor evolution. If you agree with atheism vote against Act No. 1. If you agree with the Bible vote for Act No. 1." *Id.* at 108 n.16.

89. See *LARSON*, *supra* note 66, at 119-20.

90. See *NUMBERS*, *supra* note 49, at 72-101.

91. See *GEORGE MCCREADY PRICE, EVOLUTIONARY GEOLOGY AND THE NEW CATASTROPHISM* 222-23 (1926) ("By . . . methods of strict inductive science, we shall not be able to avoid the conclusion

scientific discourse to couch the teachings of *Genesis* in the language of science. The most important work of this era, a high school biology textbook by Henry Morris,⁹² a leader of the creationist movement for much of the late twentieth century,⁹³ presented creationism in scientific, rather than biblical, terms. Together with new statutes in Arkansas and Louisiana that required equal classroom time for evolution and creation science,⁹⁴ this textbook marked a new milestone in the creationism movement.

By the mid-1970s the advocates of flood geology . . . had securely attached the synonymous tags "creation science" and "scientific creationism" to the Bible-based views of George McCready Price. This relabeling reflected more than euphemistic preference; it signified a major tactical shift among strict six-day creationists. Instead of denying evolution its scientific credentials, as biblical creationists had done for a century, the scientific creationists granted creation and evolution equal scientific standing. Instead of trying to bar evolution from the classroom, as their predecessors had done in the 1920s, they fought to bring creation into the schoolhouse and repudiated the epithet "antievolutionist." Instead of appealing to the authority of the Bible . . . they downplayed the Genesis story in favor of emphasizing the scientific aspects of creationism.⁹⁵

It was not long before this new strategy was tested in federal court. Two months after the 1981 passage of Arkansas' equal time statute, numerous individuals and groups challenged the constitutionality of the law.⁹⁶ In *McClean v. Arkansas Board of Education*, District Court Judge Overton applied the three-

that our world has witnessed an awful aqueous catastrophe, and that back of this lies a direct and real creation as the only possible origin of the great families of plants and animals."); see also GEORGE MCCREADY PRICE, *THE NEW GEOLOGY* 24-25 (1923):

[J]ust as a coroner may, by unmistakable evidence, be compelled to believe, in spite of himself, that something out of the ordinary has happened and that a murder or a suicide has been committed, so may the geologist be compelled, by cogent evidence, to believe that the ancient deposits in the earth were not laid down in the quiet, regular manner in which beds of clay, sand, and gravel are now being formed, but that something of a wholly abnormal nature must have taken place in the past.

Id. One of Price's most often used examples was the mummified Siberian elephants, which had been frozen so suddenly their flesh could still be eaten. This phenomenon proved that

a once beautiful world, well stocked with an amazing variety of plants and animals, was at some time in the long ago overtaken by a sudden and horrible world convulsion, the results of which we now have spread out over all the continents, in the form of the major part of the stratified deposits

Id. at 681.

92. HENRY M. MORRIS, *INST. FOR CREATIVE RESEARCH, SCIENTIFIC CREATIONISM* (1974).

93. See NUMBERS, *supra* note 49, at 192-213 (describing Morris' much publicized attempts to reconcile the conflict between evolution and creationism through flood geology).

94. ARK. STAT. ANN. §§ 80-1663 to -1670 (Michie Supp. 1981) (forbidding the teaching of evolution in public elementary or secondary schools unless accompanied by instruction in the theory of "creation science") (held unconstitutional in *McLean v. Arkansas Board of Education*, 529 F. Supp. 1255 (E.D. Ark. 1982)); LA. REV. STAT. ANN. §§ 17:286.1-7 (West 1982) (same) (held unconstitutional in *Edwards v. Aguillard*, 482 U.S. 578 (1987)).

95. NUMBERS, *supra* note 49, at 242.

96. Plaintiffs included the resident Arkansas Bishops of the United Methodist, Episcopal, Roman Catholic, and African Methodist Episcopal Churches; parents of minor children attending Arkansas public schools; a high school biology teacher; several Jewish organizations; the National Association of Biology Teachers; and other individuals and organizations. See *McLean*, 529 F. Supp. at 1257.

part *Lemon* test,⁹⁷ articulated a decade earlier in *Lemon v. Kurtzman*,⁹⁸ and struck down the law. To pass Establishment Clause scrutiny, a statute "must have a secular legislative purpose," a principal effect that "neither advances nor inhibits religion," and it "must not foster 'an excessive government entanglement with religion.'" ⁹⁹ Judge Overton, in a rigorous opinion that analyzed the history of creationism, the events culminating in passage of the Arkansas act, and the allegedly scientific nature of creation science, held that the Act violated each prong of the *Lemon* test.¹⁰⁰

Around the time of *McLean*, creationists and evolutionists alike prepared for the inevitable court battles ahead. The years following *McLean* saw the publication by scientists of several volumes defending evolution in language that nonscientists could comprehend.¹⁰¹ These works addressed nearly all of the creationists' arguments, including their attacks on fossil evidence¹⁰² and molecular evidence,¹⁰³ as well as their contention that evolutionary theory violates the Second Law of Thermodynamics.¹⁰⁴ Philosophers of science, energized by Judge Overton's decision, also inserted themselves into the discussion.¹⁰⁵ In short, the debate over creationism and evolution between *McLean* and 1987, when the Supreme Court struck down Louisiana's equal time

97. See *id.* at 1258, 1264-72.

98. 403 U.S. 602 (1971).

99. *Id.* at 612-13.

100. See *McLean*, 529 F. Supp. at 1272. With respect to the legislative purpose of the Act, the outspoken views of the drafter and legislative sponsor of the bill, when combined with the hurried process under which the bill was enacted, demonstrated that the bill was motivated by a clear sectarian purpose. See *id.* at 1260-64. In reaching this conclusion, Judge Overton cited *Epperson* for the proposition that "[i]n determining the legislative purpose of a statute, courts may consider evidence of the historical context of the Act," *id.* at 1263, and argued that the official history of Arkansas on the subject of evolution belied an improper legislative purpose, *id.* at 1264.

With respect to the effects prong of the *Lemon* test, Judge Overton relied on testimony and his own analysis of the statute in concluding that creation science was not science, but religion, and that the Act must therefore have the primary effect of promoting religion. See *id.* at 1264-72. In making this determination, Judge Overton relied upon the testimony of philosopher of science Michael Ruse to articulate five criteria by which he could determine whether creation science was truly science. According to Overton, science is guided by and explained by reference to natural law, is empirically testable, and is both falsifiable and tentative; creation science met none of these criteria. See *id.* at 1267-68.

Finally, with regard to the excessive entanglement prong of *Lemon*, Judge Overton explained that "[t]he need to monitor classroom discussion in order to uphold the Act's prohibition against religious instruction will necessarily . . . create an excessive and prohibited [government] entanglement with religion." *Id.* at 1272.

101. See, e.g., DOUGLAS J. FUTUYMA, *SCIENCE ON TRIAL: THE CASE FOR EVOLUTION* (1983); *SCIENCE AND CREATIONISM*, *supra* note 50; *SCIENTISTS CONFRONT CREATIONISM*, *supra* note 52.

102. See L. Beverly Halstead, *Evolution—The Fossils Say Yes!*, in *SCIENCE AND CREATIONISM*, *supra* note 50, at 240, 240-54.

103. See Thomas H. Jukes, *Molecular Evidence for Evolution*, in *SCIENTISTS CONFRONT CREATIONISM*, *supra* note 52, at 117, 117-38.

104. See John W. Patterson, *Thermodynamics and Evolution*, in *SCIENTIST CONFRONT CREATIONISM*, *supra* note 52, at 99, 99-116.

105. See, e.g., PHILIP KITCHER, *ABUSING SCIENCE: THE CASE AGAINST CREATIONISM* 44 (1982) (attacking reliance on falsifiability as "hopelessly flawed"). Philosopher Larry Laudan strongly criticized the claim in *McClean v. Arkansas Board of Education*, 529 F. Supp. 1255 (E.D. Ark. 1982), that there could be any strict demarcation between science and other fields of inquiry. See Larry Laudan, *Commentary on Ruse: Science at the Bar—Causes for Concern*, in *CREATIONISM, SCIENCE, AND THE LAW: THE ARKANSAS CASE* 161, 161-66 (Marcel C. La Follette ed., 1983). *But cf.*, Michael Ruse, *Response to Laudan's Commentary: Pro Justice*, in *CREATIONISM, SCIENCE, AND THE LAW: THE ARKAN-*

statute in *Edwards*, was probably the most prodigious since the publication of the *Origin of Species* itself.

In contrast to the complex decision in *McLean*, the Supreme Court's decision in *Edwards* was relatively straightforward and avoided the controversial scientific analysis of the Arkansas case. The majority rested its decision largely on the purpose prong of the *Lemon* test, looking behind the legislature's stated goal of promoting academic freedom in order to discern a true legislative purpose of promoting the teachings of the Bible.¹⁰⁶ Justice Brennan's opinion looked to the legislative history of the Act and to broad historical contexts in order to identify the legislature's genuine purpose.¹⁰⁷ The Court took special notice of the uniqueness of the coercive secondary school setting, arguing that the *Lemon* test must be applied more stringently in the context of a high school classroom.¹⁰⁸ Despite Justice Scalia's caustic dissent, stridently attacking both the purpose prong of *Lemon* and its application by the majority,¹⁰⁹ *Edwards* sounded the death knell for equal time statutes and for the vigorous debate over creationism that had flourished during the preceding decade.

Recently, however, the debate has been stirred up once again. Creationists and evolutionists have faced off in the popular and academic press.¹¹⁰ Creationism has returned to the forefront of local school board campaigns.¹¹¹ And creationists have adopted a new strategy, in the form of intelligent design the-

SAS CASE, *supra*, at 167, 167-73 (defending *McClean* on the ground that the law demanded a more strict definition of science than *Laudan* would allow).

Creationists also employed ideas drawn from the philosophy of science to support their claim that creationism should be taught in schools, arguing that Karl Popper's falsifiability test either proved that creation science was a science or that evolution was not, or invoking Thomas Kuhn's theory of paradigms to argue that the lack of general acceptance of creationism by mainstream scientists should not disqualify creation science as a true science. See NUMBERS, *supra* note 49, at 246-47.

106. See 482 U.S. at 585-94.

107. See *id.* at 590.

There is a historic and contemporaneous link between the teachings of certain religious denominations and the teaching of evolution. It was this link that concerned the Court in *Epperson* Although the Arkansas anti-evolution law did not explicitly state its predominant religious purpose, the Court could not ignore that "[t]he statute was a product of the upsurge of 'fundamentalist' religious fervor" that has long viewed this particular scientific theory as contradicting the literal interpretation of the Bible.

Id. at 590 (footnotes and citations omitted).

108. See *id.* at 583-85.

109. See *id.* at 610-40 (Scalia, J., dissenting).

110. Law professor Phillip E. Johnson started much of this debate with his 1991 book *Darwin on Trial*. His book attracted much press, both positive and negative. See, e.g., Doug Bandow, *Fossils and Fallacies*, NAT. REV., Apr. 29, 1991, at 47 ("The very cogency of [Johnson's] arguments ensures that the mainstream press will greet his book with silence."); Jerry Carroll, *The Man Who Dares To Doubt Darwin*, S.F. CHRON., June 14, 1991, at B3 (discussing Johnson's attack on Darwinian evolution); Stephen Jay Gould, *Impeaching a Self-Appointed Judge*, SCI. AM., July 1992, at 118, 119 ("The book, in short, is full of errors, badly argued, based on false criteria, and abysmally written."); Phillip E. Johnson, *Can 80% of Us Be Dead Wrong?*, L.A. TIMES, Aug. 17, 1993, at A11 ("Teaching the difference between philosophy and science isn't creationism; it's good critical thinking."). The recent publication of *Darwin's Black Box*, a critique of Darwinian evolution from a biochemical perspective, seems well positioned to attract comparable attention. MICHAEL J. BEHE, *DARWIN'S BLACK BOX: THE BIOCHEMICAL CHALLENGE TO EVOLUTION* (1996).

111. See text accompanying notes 1-20 *supra*.

ory, to attack evolution. It is in this context that the constitutional analysis of *Pandas* must begin.

II. OF *PANDAS* AND PEOPLE

Although the authors of *Pandas* present the book as an integral part of a balanced consideration of the origins of life,¹¹² the authors and publishers of the book have a clear religious agenda. Dean Kenyon, one of the book's two authors, has, since the late 1970s, published in creationist journals and lectured about creationism in his biology classes at San Francisco State University.¹¹³ In 1986, he helped support Louisiana state officials in *Edwards*.¹¹⁴ His co-author, Percival Davis, is the coauthor of *Case for Creation*,¹¹⁵ a book published by an affiliate of the Chicago-based Moody Bible Institute. When asked about his motivations for writing *Pandas*, he is quite honest about his religious purposes: "Of course my motives were religious," he says, "There's no question about it."¹¹⁶

Jon Buell, the publisher of *Pandas*, is equally explicit about his purposes. Buell, a long-time member of the Campus Crusade for Christ, began pitching *Pandas* in the mid-1980s.¹¹⁷ Buell found a small press to publish the book and promised all contributors to *Pandas* that they would receive an enameled box with a panda on the lid, which, Buell told them, "will become a pleasant reminder to pray for our work."¹¹⁸ After initial efforts to promote *Pandas* directly to school boards failed, Buell promoted the book at the grass-root level, appealing to individual biology teachers to join his "quiet army" against the metaphysical naturalism of other biology textbooks.¹¹⁹ In a letter written directly to biology teachers, Buell wrote, "If you would like to be part of this quiet army, please let us know right away."¹²⁰ Those who chose not to join, he wrote, "may wish to support those who do by their prayers."¹²¹

On the very first page of *Pandas*, the authors reprint the following quotation from Carl Sagan:

We live in an extraordinary age. . . . As long as there have been human beings, we have posed the deep and fundamental questions, which evoke wonder and stir us into at least a tentative and trembling awareness, questions on the origins of consciousness; life on our planet; the beginnings of the Earth; the formation of the Sun; the possibility of intelligent beings somewhere up there in

112. See DAVIS & KENYON, *supra* note 2, at viii.

113. See Laura Kurtzman, *Faculty Backs Scientist Who Says Life Had Intelligent Designer*, DALLAS MORNING NEWS, Jan. 16, 1994, at 8A, available in LEXIS, Nexis Library, News File.

114. See *id.*

115. WAYNE FRAIR & PERCIVAL DAVIS, *A CASE FOR CREATION* (3d rev. ed. 1983).

116. Larson, *supra* note 17, at A1 (quoting Percival Davis).

117. See *id.*

118. *Id.* (quoting Jon Buell).

119. See Helmore, *supra* note 8, at 15.

120. Larson, *supra* note 17, at A1 (quoting Jon Buell).

121. *Id.* (quoting Jon Buell).

the depths of the sky; as well as, the grandest inquiry of all—on the advent, nature and ultimate destiny of the universe.¹²²

Picking up on Sagan's quotation, the authors raise similar questions, thereby signaling to the reader that the work will explore the meaning of the universe and the role of human beings in it:

Carl Sagan, one of the foremost popularizers of science in our time, has drawn our attention to ancient, important, and fascinating questions. How did this immense universe come into existence? How did the earth come to harbor life? What does it all mean, if anything, and how do mere mortals like ourselves fit into the overall scheme of things, if indeed there be a scheme? As Dr. Sagan reminds us, we are not the first to wonder, nor are we likely to be the last.¹²³

The authors then suggest two mutually exclusive explanations for the origins of life, namely evolution and intelligent design.¹²⁴

The rest of the book is devoted to casting doubt on evolutionary theory and concurrently promoting intelligent design. The authors state:

Pandas gives students a much-needed opportunity to explore the evidence and arguments that have caused some scientists to doubt contemporary Darwinism

. . . .

Going a step further, *Pandas* helps students understand the positive case for intelligent design. . . . [T]he authors argue that life not only *appears* to have been intelligently designed but that it actually was.¹²⁵

Pandas is divided into an overview chapter and six large chapters, each dealing with a different topic in evolutionary theory. The overview chapter simply summarizes the material presented in the following chapters,¹²⁶ and the six subsequent chapters deal with, respectively, the origin of life,¹²⁷ genetics and macroevolution,¹²⁸ the origin of species,¹²⁹ the fossil record,¹³⁰ homology,¹³¹ and biochemical similarities.¹³² Each chapter presents the Darwinian interpretation of empirical data followed by arguments seeking to discredit that interpretation in favor of intelligent design. The book contains no mention of the word "God" or "Creator." There is also no mention of any specifically biblical account of the origin of life. The book does not preach, and it consistently suggests that there are two competing, at least somewhat reasonable, in-

122. DAVIS & KENYON, *supra* note 2, at vii (quoting CARL SAGAN, BROCA'S BRAIN: REFLECTIONS ON THE ROMANCE OF SCIENCE xiii (1974)).

123. *Id.*

124. *See id.*

125. *Id.* at 157; *see also id.* at ix ("Of *Pandas and People* is not intended to be a balanced treatment by itself. We have given a favorable case for intelligent design and raised reasonable doubt about natural descent.").

126. *See id.* at 1-40.

127. *See id.* at 41-58.

128. *See id.* at 59-76.

129. *See id.* at 77-90.

130. *See id.* at 91-113.

131. *See id.* at 115-34.

132. *See id.* at 135-48.

terpretations of the biological data. The book does, however, strongly advocate the idea that life was created by an intelligent agent, not simply evolution.¹³³

For the most part, the authors of the book are engaged in a familiar project. Like most creationists before them, they concern themselves primarily with raising doubts about Darwinian evolution. The book is unique only insofar as it postulates that an unnamed intelligent agent, rather than a particularly Christian God, created the world and its creatures.¹³⁴ Even the claim that the belief in a creator is scientifically warranted derives from traditional creationism. The creation science movement of the 1970s and 1980s, which culminated in *Edwards*, was based almost exclusively on the tenet that the events of the Bible could be supported by scientific investigation.¹³⁵ *Pandas* breaks new ground not in its methodology but only in its conclusion that some intelligent agent, not necessarily God, created the world.

But who or what is this intelligent agent and what are his, her, or its characteristics? Although the authors claim that the specifics of intelligent design theory are open to various interpretations and further research,¹³⁶ the book presents an agent who looks very much like the God of the Bible. He, she, or it is a "designer"¹³⁷ who devised a blueprint or plan,¹³⁸ created organisms,¹³⁹ made fully formed creatures,¹⁴⁰ designed and formed life on earth,¹⁴¹ "coordinate[d] the design requirements of multifunctional adaptational packages,"¹⁴² shaped matter,¹⁴³ ordered pieces into a coherent whole,¹⁴⁴ and may be assumed to have had good reasons for making decisions and to have used a variety of design approaches.¹⁴⁵ The designer is supernatural,¹⁴⁶ a "master intellect,"¹⁴⁷ and a "consummate engineer."¹⁴⁸ Moreover, the designer acts in ways that humans do not understand.¹⁴⁹ It is this God-like nature of the postulated intelligent designer that compels the conclusion that *Pandas* teaches religion, not science, and thus, cannot be taught in American public schools.

133. See, e.g., *id.* at 148 ("Any view or theory of origins must be held in spite of unsolved problems . . . However, without exaggeration, there is impressive and consistent evidence, from each area we have studied, for the view that living things are the product of intelligent design.").

134. See *id.* at 161 ("[T]he concept of design implies absolutely nothing about . . . the existence of the Christian God. All it implies is that life had an intelligent source.").

135. See NUMBERS, *supra* note 49, at 241-57 (describing the creation science and scientific creationism movement).

136. See DAVIS & KENYON, *supra* note 2, at 126.

137. See *id.* at 125.

138. See *id.* at 14.

139. See *id.*

140. See *id.* at 25-26.

141. See *id.* at 41.

142. *Id.* at 72.

143. See *id.* at 78.

144. See *id.* at 144.

145. See *id.* at 125.

146. See *id.* at 7. Although the authors do not use the word "supernatural," by placing the theory of intelligent cause in counterdistinction to natural causes and by arguing that an intelligent designer can do things that could not be accomplished through natural causes, they clearly imply a supernatural designer.

147. *Id.* at 58.

148. *Id.* at 71.

149. See *id.* at 125.

III. WHY *PANDAS* IS UNCONSTITUTIONAL

There are several problems with attempting to discern what the Supreme Court¹⁵⁰ would or should do if faced with adjudicating the constitutionality of teaching *Pandas* in the public schools. It is not a stretch to describe the Supreme Court's Establishment Clause jurisprudence as both confusing and unpredictable.¹⁵¹ The decline of the *Lemon* test, the test that the Court had once put forward as the "Grand Unified Theory" of the Establishment Clause,¹⁵² and the diverging emphases in cases arising under the Establishment Clause¹⁵³ help account for this disarray. In short, it is quite challenging to predict exactly what the Court will do when faced with any particular Establishment Clause problem.

This problem is compounded by uncertainty over the posture and context in which a challenge to *Pandas* would arise. In both *Edwards* and *Epperson*, the Court relied on the particular events, characters, language, and context surrounding the passage of the laws in question.¹⁵⁴ Here, of course, these facts do not yet exist, with the important exception that we do know quite a bit about the motivations of the authors and publishers of the book. Presumably, a challenge to intelligent design could arise in response to a school board's decision to adopt the book as part of its regular curriculum or by a teacher seeking to teach the book against school wishes on academic freedom grounds. Either way, important facts will have to be filled in before a completely accurate prediction of the Court's resolution can be made.

Despite the lack of specific facts, the language of *Pandas* itself and context in which it has arisen are sufficient to compel the conclusion that teaching

150. Or a lower court attempting to follow what the Supreme Court would do.

151. See Dmitry N. Feofanov, *Defining Religion: An Immodest Proposal*, 23 HOFSTRA L. REV. 309, 311 (1994) (collecting various commentators' descriptions of the Court's Establishment Clause jurisprudence as a "doctrinal quagmire," "schizophreni[c]," "inconsistent and unprincipled," "a mess," and "a conceptual disaster area"); see also Michael W. McConnell, *Religious Freedom at a Crossroads*, 59 U. CHI. L. REV. 115, 120 (1992) (calling Religion Clause jurisprudence "a mess").

152. See Board of Educ. of Kiryas Joel Village Sch. Dist. v. Grumet, 114 S. Ct. 2481, 2498-99 (1994) (O'Connor, J., concurring) (arguing that the Religion Clauses cannot be reduced to a single test or a "Grand Unified Theory," as *Lemon* and its progeny attempt); see also *Edwards v. Aguillard*, 482 U.S. 578, 636-40 (1987) (Scalia, J., dissenting) (questioning the *Lemon* test and the Court's "embarrassing Establishment Clause jurisprudence"); McConnell, *supra* note 151, at 128-30 (arguing that the *Lemon* test frustrates the goals of the First Amendment and devalues religious exercise); Michael A. Paulsen, *Religion, Equality, and the Constitution: An Equal Protection Approach to Establishment Clause Adjudication*, 61 NOTRE DAME L. REV. 311, 315-17 (1986) (arguing that the *Lemon* test "is premised on an underlying view of the establishment clause which is both historically unjustified and textually incoherent"); Michael Stokes Paulsen, *Lemon is Dead*, 43 CASE W. RES. L. REV. 795, 800-13 (1993) (summarizing the various attacks on the *Lemon* test).

153. See *Kiryas Joel*, 114 S. Ct. at 2498-2500 (O'Connor, J., concurring).

[S]etting forth a unitary test for a broad set of cases may sometimes do more harm than good. . . .

. . . I think it is more useful to recognize the relevant concerns in each case on their own terms, rather than trying to squeeze them into language that does not really apply to them. . . .

. . . [T]he Establishment Clause, like the Free Speech Clause, cannot easily be reduced to a single test. There are different categories of Establishment Clause cases, which may call for different approaches.

Id. at 2499.

154. See *Edwards*, 482 U.S. at 589-94; *Epperson v. Arkansas*, 393 U.S. 97, 107-09 (1968).

Pandas in any public school scenario would be unconstitutional. Moreover, despite its muddled Establishment Clause jurisprudence, the Court has consistently applied the most exacting scrutiny in the context of public schools¹⁵⁵ and would surely strike down any attempt to communicate a religious belief in the public school classroom.

A. *Schools are Special*

Despite the Court's often wavering and perhaps inconsistent results in dealing with the Establishment Clause,¹⁵⁶ in the seven cases in which the Court has considered the compulsory public school forum, it has consistently struck down the offending law as a violation of the First Amendment.¹⁵⁷ The Court has given at least four separate rationales for applying the Establishment Clause with extra vigilance in the public school context. First, and asserted most often in early cases, is the indispensability of constitutional rights in the public schools, which the Court has conceived of as the bedrock of a free democratic society.¹⁵⁸ "Americans regard the public schools as a most vital civic institution for the preservation of a democratic system of government. It is therefore understandable that the constitutional prohibitions encounter their severest test when they are sought to be applied in the school classroom."¹⁵⁹ Second, the Court argues that the uniquely impressionable nature of young children and adolescents and their susceptibility to religious teaching in the classroom justifies special vigilance.¹⁶⁰ Third, the Court makes special note of the compulsory nature of secondary and elementary school attendance. Since students are

155. See text accompanying notes 157-165 *infra*.

156. See *McConnell*, *supra* note 151, at 119 ("With doctrine in such chaos, the Warren and Burger Courts were free to reach almost any result in almost any case.")

157. See *Lee v. Weisman*, 505 U.S. 577, 599 (1992) (disallowing prayer as part of an official public school graduation ceremony); *Edwards*, 482 U.S. at 596-97 (invalidating law that prohibited the teaching of evolution without accompanying instruction in creation science); *Wallace v. Jaffree*, 472 U.S. 38, 61 (1985) (rejecting Alabama statute authorizing one-minute period of silence "for meditation or voluntary prayer" in public schools); *Stone v. Graham*, 449 U.S. 39, 42-43 (1980) (striking Kentucky law requiring posting of the Ten Commandments in each public school classroom); *Epperson*, 393 U.S. at 109 (invalidating Arkansas "anti-evolution" statute); *Abington Sch. Dist. v. Schempp*, 374 U.S. 203, 224 (1963) (striking Pennsylvania law requiring reading of Bible passages at start of school day); *Engel v. Vitale*, 370 U.S. 421, 436 (1962) (rejecting law requiring recitation of official prayer in New York public schools). When the Court has considered contexts where attendance is not mandatory or where the students in question are college students and not high school or elementary school students, the results have been different. See *Lamb's Chapel v. Center Moriches Union Free Sch. Dist.*, 508 U.S. 384, 394-97 (1993) (holding that the Establishment Clause is not violated when a school district is compelled, under free speech principles, to allow after-school use of its facilities by a church group); *Widmar v. Vincent*, 454 U.S. 263, 276-77 (1981) (ruling unconstitutional the University of Missouri at Kansas City's exclusion of student religious groups from university meeting places).

158. See, e.g., *Epperson*, 393 U.S. at 104-105 (extolling the importance of safeguarding constitutional guarantees in public schools); *Schempp*, 374 U.S. at 230 (Brennan, J., concurring) (noting popular regard for public schools as a "vital civic institution" intimately tied to the preservation of democracy).

159. *Schempp*, 374 U.S. at 230 (Brennan, J., concurring); see also *id.* at 241-42 ("It is implicit in the history and character of American public education that the public schools serve a uniquely *public* function: the training of American citizens in an atmosphere free of parochial, divisive, or separatist influence of any sort . . .").

160. See, e.g., *Edwards*, 482 U.S. at 584 (noting the status of teachers as role models and susceptibility of students to peer pressure); *Wallace*, 472 U.S. at 81 (O'Connor, J., concurring in judgment) ("This Court's [First Amendment] decisions have recognized a distinction when government-sponsored

required to be in class, there is a far greater chance that they will feel coerced into accepting whatever religious belief they are taught.¹⁶¹ Moreover, the Court has also held that a provision allowing students to excuse themselves from the questioned portion of a class “furnishes no defense to a claim of unconstitutionality under the Establishment Clause.”¹⁶² In making this determination, the Court has relied upon psychological literature showing that children and adolescents lack free choice to leave a setting permeated by peer pressure.¹⁶³ Finally, the authoritative role of teachers in the classroom increases the likelihood that the teaching of a religious belief will lead to coercion, rather than simply a free exchange of ideas.¹⁶⁴

For all these reasons, Establishment Clause scrutiny is especially exacting in the public school context:

The Court has been particularly vigilant in monitoring compliance with the Establishment Clause in elementary and secondary schools. Families entrust public schools with the education of their children, but condition their trust on the understanding that the classroom will not purposely be used to advance religious views that may conflict with the private beliefs of the student and his or her family. Students in such institutions are impressionable and their attendance is involuntary. The State exerts great authority and coercive power through mandatory attendance requirements, and because of the students’ emulation of teachers as role models and the children’s susceptibility to peer pressure. Furthermore, “[t]he public school is at once the symbol of our democracy and the most pervasive means for promoting our common destiny. . . .”

. . . .

Therefore, in employing the three-pronged *Lemon* test, we must do so mindful of the particular concerns that arise in the context of public elementary and secondary schools.¹⁶⁵

Given this vigilance with which the Court has policed the Establishment Clause in the public school context, and its consistent invalidation of laws that advance or endorse religious viewpoints in the classroom, *Panda’s* constitutionality turns on whether the book espouses a religious viewpoint. The next two sections argue that it does.

B. *Intelligent Design is Religion*

On the final pages of *Pandas*, its authors argue that the book does not teach a religious viewpoint because intelligent design implies nothing about the beliefs, such as a young earth or a global flood, that are associated with Christian

religious exercises are directed at impressionable children who are required to attend school, for then government endorsement is much more likely to result in coerced religious beliefs.”).

161. See, e.g., *Edwards*, 482 U.S. at 583-84 (noting the unique concerns that arise in the mandatory elementary and secondary school environment); *Wallace*, 472 U.S. at 81 (O’Connor, J., concurring) (noting the potentially coercive public school setting).

162. *Schempp*, 374 U.S. at 225.

163. See *id.* at 290-91 & n.69 (Brennan, J., concurring) (citing psychological studies).

164. See, e.g., *Edwards*, 482 U.S. at 584 (noting teachers’ status as role models).

165. *Id.* at 583-84 (citations and footnote omitted) (first alteration in original).

fundamentalism.¹⁶⁶ The idea that life had an intelligent source, they further assert, is not unique to Christian fundamentalism.¹⁶⁷ These arguments miss the fact that the Court has always interpreted the Establishment Clause to prevent not only the favoring of one religion over others, but also the favoring of religion generally over irreligion.¹⁶⁸ In other words, even if *Pandas* does not espouse Christianity in any form,¹⁶⁹ teaching it will nevertheless violate the Establishment Clause if it embodies a generally religious viewpoint that promotes any belief in religion. The question, then, is whether the belief that an intelligent designer created the world and everything in it according to a master plan is a religious belief.

The Supreme Court has not provided a clear, concrete, and consistently employed definition of religion in the First Amendment context,¹⁷⁰ and it has been particularly reluctant to craft such a definition with respect to the Establishment Clause.¹⁷¹ However, commentators do not share the Court's reluctance to discuss the constitutional meaning of religion,¹⁷² and the Court itself has occasionally contemplated the contours of such a definition.¹⁷³ From these comments and suggestions, two types of definitions of religion emerge. Substantive or content-based definitions define religion based on the substance of

166. See DAVIS & KENYON, *supra* note 2, at 160-61.

167. See *id.* at 161.

168. See, e.g., Board of Educ. of Kiryas Joel Village Sch. Dist. v. Grumet, 114 S. Ct. 2481, 2487 (1994) ("[T]he Establishment Clause compels the State to pursue a course of 'neutrality' toward religion, favoring neither one religion over others nor religious adherents collectively over nonadherents.") (citation omitted); Lee v. Weisman, 505 U.S. 577, 616 (1992) (Souter, J., concurring) ("[T]he Establishment Clause forbids support for religion in general no less than support for one religion or some."); Everson v. Board of Educ., 330 U.S. 1, 15 (1947) ("The 'establishment of religion' clause of the First Amendment means at least this: Neither a state nor the Federal Government can set up a church. Neither can pass laws which aid one religion, aid all religions, or prefer one religion over another.").

169. But see text accompanying notes 214-232 *infra* (arguing that *Pandas* does, in fact, teach Christianity).

170. See GERALD GUNTHER, CONSTITUTIONAL LAW § 14-2, at 1586 (12th ed. 1991) ("The constitutional definition of 'religion' continues in doubt . . .").

171. See LAWRENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW § 14-6, at 1187 (2d ed. 1988) ("[C]ourts have largely avoided defining 'religion' under the establishment clause, focusing instead on the more important concept of 'establishment.'").

172. See, e.g., Andrew W. Austin, *Faith and the Constitutional Definition of Religion*, 22 CUMB. L. REV. 1, 33-46 (1991) (proposing a definition of religion based on faith); Jesse H. Choper, *Defining "Religion" in the First Amendment*, 1982 U. ILL. L. REV. 579, 604-12 (considering how religion should be defined in the Establishment Clause context); Feofanov, *supra* note 151, at 385-91 (proposing a definition of religion as "a manifestly non-rational (i.e., faith-based) belief concerning the alleged nature of the universe, sincerely held"); Richard O. Frame, Note, *Belief in a Nonmaterial Reality—A Proposed First Amendment Definition of Religion*, 1992 U. ILL. L. REV. 819, 838-51 (proposing a content-based definition of religion comprising belief in a non-material reality); George C. Freeman, III, *The Misguided Search for the Constitutional Definition of "Religion,"* 71 GEO. L.J. 1519, 1565 (1983) (arguing that there can be no single definition of religion); Robert L. Rabin, *When is a Religious Belief Religious: United States v. Seeger and the Scope of Free Exercise*, 51 CORNELL L.Q. 231, 240-44 (1966) (arguing for a definition of religion broad enough to encompass unorthodox systems of belief); C. John Sommerville, *Defining Religion and the Present Supreme Court*, 6 U. FLA. J.L. & PUB. POL'Y 167, 177-80 (1994) (proposing a definition of religion based on tradition and expectation); Note, *Toward a Constitutional Definition of Religion*, 91 HARV. L. REV. 1056, 1083-86 (1978) (arguing for a bifurcated definition of religion in Religion Clause cases).

173. See, e.g., *Welsh v. United States*, 398 U.S. 333, 340-44 (1970) (discussing a religion-based conscientious objector claim under the Universal Military Training and Service Act); *United States v. Seeger*, 380 U.S. 163, 173-78 (1965) (same).

the belief.¹⁷⁴ For example, a content-based definition might define religion as a belief in a god. Such a definition would include Christianity but would perhaps exclude such Eastern religions as Taoism that do not rely on such a concept.¹⁷⁵ Functional definitions define religion not by the content of a belief, but instead in terms of the role the belief plays in a person's life; such definitions often stress the centrality of a belief to a given person.¹⁷⁶ Regardless of what type of definition the Court would choose to apply to *Pandas*, however, the intelligent design theory espoused in the book would meet either one of them.

The Framers of the Constitution and the Supreme Court in its early years favored a content-based definition of religion, specifically belief in a supernatural creator. In his classic statement on the separation of church and state, James Madison defined religion as "the duty which we owe to our Creator, and the Manner of discharging it."¹⁷⁷ Early Court decisions echoed this characterization of religion. In an 1890 case, the Court drew heavily on Madison's view of religion: "The term 'religion' has reference 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."¹⁷⁸ In the 1950s, the Court characterized religion with reference to a "Supreme Being."¹⁷⁹ Although the growth of nontraditional and non-Western religions has since forced the Court to expand the range of beliefs it considers religious,¹⁸⁰ the belief in a supreme being and creator still lies at the core of the meaning of religion. In *Edwards*, the Court twice equates the two. In discussing the legislative purpose of the Louisiana Creationism Act, the Court noted that "[t]he preeminent purpose of the Louisiana Legislature was clearly to advance the *religious viewpoint* that a *supernatural being created humankind*."¹⁸¹ A few sentences later, the Court noted that "[t]he legislative history . . . reveals that the term 'creation science,' as contemplated by the legislature that adopted this Act, embodies the *religious belief* that a *supernatural creator was responsible for the creation of humankind*."¹⁸²

Pandas falls under this content-based definition. To be sure, the book does not refer to a "supreme being" or "creator." It usually employs only the term "agent"¹⁸³ or "cause."¹⁸⁴ However, the book does describe this agent as a "designer."¹⁸⁵ Moreover, whoever or whatever this agent is, he, she, or it

174. See Feofanov, *supra* note 151, at 339.

175. See *Torcaso v. Watkins*, 367 U.S. 488, 495 n.11 (1961).

176. See Feofanov, *supra* note 151, at 339.

177. JAMES MADISON, MEMORIAL AND REMONSTRANCE AGAINST RELIGIOUS ASSESSMENTS (1785), reprinted in *THE SUPREME COURT ON CHURCH AND STATE* 18, 18 (Robert S. Alley ed., 1988).

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

179. See *Zorach v. Clauson*, 343 U.S. 306, 313 (1952).

180. See, e.g., *United States v. Seeger*, 380 U.S. 163, 176 (1965) (arguing for a functional definition of religion); *Torcaso*, 367 U.S. at 495 n.11 (characterizing certain traditions, such as Taoism and Buddhism, as religious despite their lack of belief in God).

181. *Edwards v. Aguillard*, 482 U.S. 578, 591 (1987) (emphasis added).

182. *Id.* at 591-92 (emphasis added).

183. See e.g., *DAVIS & KENYON*, *supra* note 2, at 7, 14, 41, 100, 138, 158.

184. See e.g., *id.* at ix, 7, 26, 127.

185. See e.g., *id.* at 125, 159, 160.

“designed”¹⁸⁶ and “devised”¹⁸⁷ the blueprint for life, “creating”¹⁸⁸ human beings and all the rest of nature. An agent who creates is surely a creator. Since belief in a creator is at the core of the meaning of religion, *Pandas* is teaching a religious belief. Since all theisms rest on a belief in someone or something that created the universe, *Pandas* is in fact laying out an argument for the most basic and most universal prerequisite of all theistic beliefs. The authors seem to believe that by avoiding use of the word “creator” or “supreme being,” they have written a secular book. But Establishment Clause jurisprudence “reaches past formalism.”¹⁸⁹ One need not look far beyond the absence of these terms to discover a supreme, supernatural being who designed, coordinated, and created all of nature according to a master plan.

Indeed, the intelligent design theory espoused in *Pandas* closely resembles the creation science considered by the Court in *Edwards*, despite the authors’ contrary assertions.¹⁹⁰ The *Edwards* Court did not base its finding that the teaching of creation science amounts to the teaching of religion on testimony that creation science was particularly Christian, but rather on testimony that described creation science in nearly the same terms as the intelligent design theory of *Pandas*.¹⁹¹ The Court relied on the testimony of an expert on creation science that creation science simply amounts to a theory on the existence of a supernatural creator,¹⁹² testimony from the hearings at the introduction of the challenged Louisiana Creation Act that described creation science as postulating “that everything was created by some intelligence or power external to the universe,”¹⁹³ and the statement of Senator Keith, the legislative sponsor of the Act, who characterized creation science as embodying the view “that a creator however you define a creator was responsible for everything that is in this world.”¹⁹⁴ On the basis of this testimony alone, the Court determined that creation science embodied a religious viewpoint. *Pandas* teaches the same viewpoint and thus also teaches religion under the content-based conception of religion expressed in *Edwards*.

The intelligent design theory of *Pandas* also constitutes a religious belief under any of the commonly proposed functional definitions of religion. The Supreme Court came close to articulating a functional definition of religion in *United States v. Seeger*.¹⁹⁵ The *Seeger* Court interpreted section 6(j) of the Selective Service Act of 1948,¹⁹⁶ which granted conscientious objector status to anyone who, on the basis of “religious training and belief,” was opposed to

186. *See id.* at 41.

187. *See id.* at 14.

188. *See id.*

189. *Lee v. Weisman*, 505 U.S. 577, 595 (1992).

190. *See DAVIS & KENYON, supra note 2*, at 160-61 (attempting to distinguish intelligent design from sectarian religion).

191. *See Edwards v. Aguillard*, 482 U.S. 578, 591-92 (1987).

192. *See id.* at 591 n.12.

193. *Id.*

194. *Id.* at 591 n.13.

195. 380 U.S. 163 (1965).

196. Selective Service Act of 1948, ch. 625, tit. I, § 6(j), 62 Stat. 609 (1948) (current version at 50 U.S.C. app. § 456(j) (1994)).

going to war.¹⁹⁷ The statute defined "religious training and belief" as "an individual's belief in a relation to a Supreme Being."¹⁹⁸ When Andrew Seeger sought an exemption based on his "religious faith in a purely ethical creed,"¹⁹⁹ the Court was called on to interpret the meaning of a "religious belief."²⁰⁰ The Court reasoned that whether a given belief qualifies as religious turns on whether it is "sincere and meaningful"²⁰¹ and "occupies a place in the life of its possessor parallel to that filled by the orthodox belief in God."²⁰² Then, drawing on the work of such theologians as Paul Tillich,²⁰³ the Court argued that beliefs fall within this definition if "based upon a power or being, or upon a faith, to which all else is subordinate or upon which all else is ultimately dependent."²⁰⁴

The intelligent design theory of *Pandas* would meet this definition because, by its own admission, the book is concerned with addressing such fundamental questions as the origins and meaning of life and our role in the universe.²⁰⁵ It is the placement of the Carl Sagan quotation in large bold print at the very

197. *Id.*

198. *Id.*

199. *See Seeger*, 380 U.S. at 166.

200. The definitional analysis in *Seeger* was therefore statutory rather than constitutional. However, several commentators and lower courts have considered the definition in *Seeger* to be suggestive also of its definition for constitutional purposes. *See International Soc'y for Krishna Consciousness, Inc. v. Barber*, 650 F.2d 430, 440 (2d Cir. 1981); Donald A. Giannella, *Religious Liberty, Nonestablishment, and Doctrinal Development: Part I. The Religious Liberty Guarantee*, 80 HARV. L. REV. 1381, 1425 (1967).

201. *Seeger*, 380 U.S. at 166.

202. *Id.* Several lower courts have proposed similar definitions. In *United States v. Sun Myung Moon*, 718 F.2d 1210 (2d Cir. 1983), the Second Circuit relied on the writings of William James to define religion as "the feelings, acts, and experiences of individual men in their solitude, so far as they apprehend themselves to stand in relation to whatever they may consider the divine." 718 F.2d at 1227 (emphasis omitted). In *Africa v. Pennsylvania*, 662 F.2d 1025 (3d Cir. 1981), the Third Circuit defined religion as a belief which "addresses fundamental and ultimate questions having to do with deep and imponderable matters" in a comprehensive manner. 662 F.2d at 1032. In *Founding Church of Scientology v. United States*, 409 F.2d 1146 (D.C. Cir. 1969), the D.C. Circuit defined religion as a belief which embodies an underlying theory "of man's nature or his place in the Universe." 409 F.2d at 1160. Commentators have also proposed comparable definitions, suggesting such content-based formulations as "ultimate concern" and "cardinal concern." *See, e.g., PAUL TILlich, SYSTEMATIC THEOLOGY* 11-15 (Harper & Row 1967) (1951-63) (defining "ultimate concern" as "that which determines our being or not-being").

203. *See Seeger*, 380 U.S. at 180.

204. *Id.* at 176. Such a definition would seem to be extremely broad and could include any strongly held philosophical belief, including, for example, Marxism. *See TRIBE, supra* note 171, § 14-6, at 1182-83. However, a few years after the *Seeger* decision the Court, without defining "religion" or "philosophical," seemingly limited the expanse of the *Seeger* definition by holding that purely philosophical beliefs are not religious:

[T]o have the protection of the Religion Clauses, the claims must be rooted in religious belief. . . . Thus, if the Amish asserted their claims because of their subjective evaluation and rejection of the contemporary secular values accepted by the majority, much as Thoreau rejected the social values of his time and isolated himself at Walden Pond, their claims would not rest on a religious basis. Thoreau's choice was philosophical and personal rather than religious, and such belief does not rise to the demands of the Religion Clauses.

Wisconsin v. Yoder, 406 U.S. 205, 215-16 (1972). For further discussion of these issues, see TRIBE, *supra* note 171, § 14-6, at 1182-83.

205. *See DAVIS & KENYON, supra* note 2, at vii.

beginning of the book and the ominous paragraphs that follow it²⁰⁶ that compel this conclusion. The authors do not present intelligent design merely as an important hypothesis on the nature of the world's creatures or an interesting theory about man's development, but instead suggest that intelligent design addresses such "deep and fundamental questions"²⁰⁷ as "how do mere mortals like ourselves fit into the overall scheme of things,"²⁰⁸ "[h]ow did this immense universe come into existence,"²⁰⁹ and "what does it all mean?"²¹⁰ By addressing these questions and postulating an intelligent agent as creator, *Pandas* constitutes a belief "based on a power or being . . . upon which all else is ultimately dependent,"²¹¹ the Court's definition of religion in *Seeger*.²¹²

In sum, regardless of whether the Court employs a content-based or functional definition of religion,²¹³ the intelligent design theory of *Pandas* consti-

206. See notes 122-123 *supra* and accompanying text.

207. DAVIS & KENYON, *supra* note 2, at vii.

208. *Id.*

209. *Id.*

210. *Id.*

211. *United States v. Seeger*, 380 U.S. 163, 176 (1965).

212. The authors of *Pandas* would presumably respond by arguing that if intelligent design meets this definition of religion, evolution must as well, and thus evolution cannot be taught in the public schools. After all, evolution, *Pandas* argues, is just an alternative belief that addresses the same fundamental questions posed by Sagan. See DAVIS & KENYON, *supra* note 2, at ix. The problem with this argument is that, whereas the authors are free to present their own theories as constituting an answer to fundamental questions, they may not validly assert without argument that other theories address such questions. Yet, *Pandas* does not make the case that evolution addresses these ultimate concerns. In fact, evolution in pure form addresses only the question of how living creatures change over time. MONROE E. STRICKBERGER, *EVOLUTION* 598 (2d ed. 1996). It does not address the question of origins nor does it postulate the meaning of life. It deals only with proximate causes, not ultimate ones. See text accompanying notes 268-271 *infra*. Moreover, belief in evolution and belief in religion are not mutually exclusive, as evidenced by the many generations of devout religious believers who have also believed in evolution. See text accompanying notes 49-52 *supra*.

213. A third definition of religion, one that posits that an essential element of a religious belief is that it be irrationally held, poses somewhat more difficult problems in evaluating *Pandas*, as intelligent design is arguably a belief based on reason rather than irrational faith. Such definitions, however, have rarely been posed. *But see United States v. Kauten*, 133 F.2d 703, 708 (2d Cir. 1943) ("Religious belief arises from a sense of the inadequacy of reason It accepts the aid of logic but refuses to be limited by it."); Austin, *supra* note 172, at 3 (proposing a definition of religion based on the absence of reason).

Applying such a definition to *Pandas* presents two important problems. First, the Supreme Court has never adopted an irrationality definition and has, in fact, indicated that a belief need not be irrational for it to be religious. "[C]oncepts concerning God or a supreme being of some sort are manifestly religious These concepts do not shed that religiosity merely because they are presented as a philosophy or as a science." *Edwards v. Aguillard*, 482 U.S. 578, 599 (1987) (Powell, J., concurring) (quoting *Malnak v. Yogi*, 440 F. Supp. 1284, 1322 (D. N.J. 1977), *aff'd per curiam*, 592 F.2d 197 (3d Cir. 1979)). Second, in order for an irrationality definition to exclude *Pandas*, it would have to be formulated in a fashion that would overturn nearly all of the Court's Establishment Clause precedents. *Pandas* does not prove that an intelligent designer exists; it merely suggests that there is some rational basis upon which we might conclude that an intelligent designer created the world. However, in order for somebody to conclude from the evidence presented in *Pandas* that millions of years ago an all-knowing and all-powerful designer created all of nature from a master blueprint and did not allow for any macroevolutionary change, he or she would still have to make an enormous leap, though, as *Pandas* points out, not an entirely irrational one. In order for a definition of religion to exclude *Pandas*, therefore, it would have to stipulate that a belief be completely irrational to be religious. Since nearly all religions (including Christianity) present at least some rational arguments for their supposed truth, an irrationality definition of religion that excluded *Pandas* would exclude most mainstream religions from the scope of the Establishment Clause. Alternatively, a less absolute definition might declare that religious beliefs require some minimum level of irrationality and that *Pandas* does not meet this level.

tutes a religious belief that may not constitutionally be taught in the public schools.

C. *Pandas Endorses Conservative Christianity*

Although *Pandas* need do no more than promote religion generally to run afoul of the First Amendment, the book may in fact be perceived as endorsing conservative Christianity, an even more obvious Establishment Clause violation. The authors of *Pandas* suggest that because their book says nothing about the specific beliefs “normally associated with Christian fundamentalism,”²¹⁴ it therefore does not promote or endorse Christianity.²¹⁵ However, the contextual inquiry the Court has consistently applied in establishment cases²¹⁶ reveals that teaching *Pandas* would have the effect of promoting and endorsing a specific strain of conservative Christianity—one characterized by a century-old tradition of attacking evolution.

Lawrence Tribe writes that “[w]hether a given practice constitutes a forbidden establishment [of religion] may ultimately depend on whether most people would view it as religiously significant.”²¹⁷ Though Tribe chooses *Wallace v. Jaffree*²¹⁸ to illustrate his point,²¹⁹ he could have chosen any number of cases. In *Edwards* and *Epperson*, for example, the Court looked to the historical context of the fight against evolution to determine that the Arkansas and Louisiana legislatures acted with a religious purpose in passing their respective creationist acts.²²⁰ Particularly relevant are the Court’s decisions in *Lynch v. Donnelly*²²¹ and *County of Allegheny v. American Civil Liberties Union, Greater Pittsburgh Chapter*,²²² in which the Court described the contours of the endorsement test. In both of these cases, the Court considered whether a municipality’s Christmas displays constituted an establishment of religion. The endorsement test first introduced by Justice O’Connor in her *Lynch* concurrence,²²³ was employed by five justices in *Allegheny*.²²⁴ The essence of the test is whether a religious practice, considering both the subjective intent of its proponents and its objec-

However, such a standard would be impossible for a court to administer and would require that the Court inquire into the truth of a believer’s religious beliefs. Such an inquiry would be in direct violation of the Court’s holding in *United States v. Ballard*, 322 U.S. 78 (1944), that “the truth or verity of [a person’s] religious doctrines or beliefs” should not be examined. *See id.* at 86-88.

214. DAVIS & KENYON, *supra* note 2, at 161.

215. *See id.*

216. *See* note 154 *supra* and accompanying text.

217. TRIBE, *supra* note 171, § 14-6, at 1187.

218. 472 U.S. 38 (1985).

219. *See* TRIBE, *supra* note 171, § 14-6, at 1187. The Court in *Jaffree* assumed that people associate the word “prayer” with religion and consequently struck down a moment-of-silence statute that included the word; “meditation,” on the other hand, holds no religious significance for most people and alone would not violate the Establishment Clause. *See id.*

220. *See* *Edwards v. Aguillard*, 482 U.S. 578, 590-93 (1987); *Epperson v. Arkansas*, 393 U.S. 97, 107-09 (1968).

221. 465 U.S. 668 (1984).

222. 492 U.S. 573 (1989).

223. *See* *Lynch*, 465 U.S. at 688.

224. *See* *Allegheny*, 492 U.S. at 592.

tive effect on its audience,²²⁵ "sends a message to nonadherents that they are outsiders . . . and an accompanying message to adherents that they are insiders."²²⁶ As Justice O'Connor argued in *Lynch*:

The meaning of a statement to its audience depends both on the intention of the speaker and on the "objective" meaning of the statement in the community. . . . Examination of both the subjective and the objective components of the message communicated by a government action is therefore necessary to determine whether the action carries a forbidden meaning.²²⁷

In *Allegheny*, Justices Blackmun and O'Connor specified the factors that the Court must examine in determining the objective meaning of the practice. Foremost in this inquiry is the context within which the practice is set,²²⁸ and this determination, in turn, depends greatly on the historical background of the practice.²²⁹ Although there is currently no legislative or other record from which to determine the purpose motivating any school board or teacher seeking to teach *Pandas*,²³⁰ both the vociferous public debate accompanying adoption of the text, exemplified by the battle in Plano,²³¹ and its instruction in the classroom would likely lead the affected students and community to perceive an extension of the century-old Christian agenda to promote the Biblical story of creationism at the expense of evolution.

There are many reasons why this is the case. First, and most important, the intelligent design theory espoused by *Pandas* is not simply that an intelligent cause was involved in the creation of nature, but that an intelligent designer created organisms fully formed without allowing for macroevolutionary change.²³² This is by no means a necessary characteristic of intelligent design, which has the potential, as many devout religious believers have believed for centuries, to be consistent with evolutionary change. *Pandas* teaches a particular interpretation of intelligent design, one that resembles in very important ways the biblical story of creation literally interpreted. By making the denial of evolution a necessary corollary of a belief in intelligent design, the authors give away the true meaning of the text. The reasonable observer, therefore, is most likely not going to understand *Pandas* as promoting a new scientific theory, but will probably see what he or she has seen from creationists since the 1920s: an all-out attack on evolution coupled with an argument for a creator who created life on Earth in its present form.

Second, the authors of *Pandas* also attack evolution in the same manner, employing the same arguments, language, and tone, that creationists have em-

225. See *Lynch*, 465 U.S. at 690 (O'Connor, J., concurring).

226. *Id.* at 688 (O'Connor, J., concurring).

227. *Id.* at 690 (O'Connor, J., concurring).

228. See *Allegheny*, 492 U.S. at 595-97 (Blackmun, J.).

229. See *id.* at 629-31 (O'Connor, J., concurring).

230. Nonetheless, the purposes of the authors and publisher, as well as the Court's skepticism towards the mouthing of secular purposes, strongly suggest that the Court would find a religious purpose in any attempt to teach the book. See text accompanying notes 112-121 *supra*.

231. See text accompanying notes 1-5 *supra*.

232. See DAVIS & KENYON, *supra* note 2, at 99-100.

ployed for the last century. Their claims that transitional fossils are lacking,²³³ that life could not have spontaneously originated out of a prebiotic soup,²³⁴ that natural selection cannot account for macroevolutionary change,²³⁵ and that random changes cannot account for great complexity²³⁶ are familiar creationist refrains.²³⁷ A reasonable observer would notice the similarity in discourse between *Pandas* and creationism and equate the two.

Third, the shift to intelligent design theory fits the model of periodic strategic transformation in the creationist movement that has characterized it from the start. Like the movement to pass antievolution laws, which was followed after *Epperson* by a move to pass equal time laws and then a shift to creation science,²³⁸ *Pandas* and the move to intelligent design bear the hallmark of the creationist movement—trying to package and teach Christian thought in a form that courts will allow into the schools. Like creationists in the 1920s and the 1960s,²³⁹ the authors of *Pandas* have chosen the secondary school textbook as their weapon to attack evolution. Similarly, the move towards presenting intelligent design as a scientific theory echoes the creation science movement of the 1960s and 1970s, again adding to the perception of *Pandas* as simply an extension of traditional creationism, rather than a groundbreaking new interpretation of scientific data. The authors' and publisher's unabashed religious purposes can only bolster this perception.²⁴⁰

Finally, the intelligent design theory of *Pandas* has a long history in the development of Christian thought. Thomas Aquinas asserted the notion that the complexity of nature lends support to a belief in God,²⁴¹ and eighteenth century theologian William Paley echoed this notion.²⁴² William Jennings Bryan, the first and perhaps greatest leader of the creationist movement,²⁴³ latched onto the same argument. To anyone even slightly versed in Christian thought, intelligent design, particularly when infused with such conservative Christian viewpoints as a disbelief in evolution, reads not as science, but as Christianity.

Perhaps if *Pandas* were to have appeared out of nowhere, unaccompanied by the hundred-plus years of the creation-evolution controversy, it might be understood as nothing more than an attack on a widely accepted scientific theory and a proposal for an alternative explanation of natural phenomena. Instead, *Pandas* arrived not out of thin air, but as the product of a well-defined history. Whether a practice constitutes an endorsement of religion depends in large part on the historical context of that practice.²⁴⁴ *Pandas*, burdened by its historical associations with Christian thought, will likely be associated by an

233. See *id.* at 93-100.

234. See *id.* at 42-55.

235. See *id.* at 69-72.

236. See *id.* at 68-69.

237. See text accompanying notes 53-60 *supra*.

238. See text accompanying notes 81-111 *supra*.

239. See text accompanying notes 71-80 *supra*.

240. See text accompanying notes 112-116 *supra*.

241. See note 48 *supra*.

242. See notes 24-30 *supra* and accompanying text.

243. See text accompanying notes 53-63 *supra*.

244. See note 220 *supra* and accompanying text.

everyday observer as the next chapter in a specifically Christian project. Public school instruction of *Pandas* therefore threatens to send an inclusionary message to students who share its beliefs and an exclusionary message to those who do not. This the Establishment Clause forbids.

IV. IS *PANDAS* SCIENCE?

Drawing on the somewhat intuitive notion that theories can be categorized as either science or nonscience, the authors of *Pandas* argue that intelligent design is science and, as such, that its teaching withstands First Amendment scrutiny.²⁴⁵ If a bright line distinction can be drawn between science and other fields of inquiry, the authors seem to reason, a theory that qualifies as science cannot also be religion,²⁴⁶ and therefore, teaching intelligent design is not susceptible to constitutional attack.

This argument fails for two interrelated reasons. First, the Constitution does not require that courts allow teachers to teach science; it simply forbids teachers from teaching religion.²⁴⁷ Second, the demarcation approach to science espoused by the authors of *Pandas* is untenable in both theory and practice. For example, how should science be defined? What characteristics define it? Does a theory have to possess all the characteristics or are just a few sufficient? Are courts competent to make such technical distinctions? To whom would they look for guidance in making them? Moreover, to the extent that courts look to philosophers of science for guidance on such issues, they should realize that a demarcation approach toward science has been discredited in the field for over fifty years.²⁴⁸

The second insight is best considered first. The idea that scientists could articulate criteria with which to distinguish science from nonscience was popular in the early part of the twentieth century. Perhaps the most important philosopher of science to take this position was Karl Popper,²⁴⁹ who defined a true scientific theory as one that is falsifiable. This concept laid at the center of the philosophy of science for many years.²⁵⁰ Essentially, Popper believed that a true scientific theory must have observational consequences that can be falsified through experiments.²⁵¹ However, in the last thirty years, as philosophers of science have grown skeptical about the adequacy of criteria such as "fal-

245. See DAVIS & KENYON, *supra* note 2, at 160-61.

246. This demarcation strand of thought, commonly known as logical empiricism or logical positivism and most prominently espoused by philosopher Karl Popper, dominated the philosophy of science for much of the twentieth century. See Richard Boyd, *Confirmation, Semantics, and the Interpretation of Scientific Theories*, in *THE PHILOSOPHY OF SCIENCE* 3, 5-11 (Richard Boyd, Philip Gasper & J.D. Trout eds., 1991). Both the plaintiffs in their arguments in *McClellan*, see Ruse, *supra* note 105, at 167-71, and Judge Overton in his decision in that case, *McClellan v. Arkansas Board of Education*, 529 F. Supp. 1255, 1267 (E.D. Ark. 1982), adopted a demarcation approach.

247. See *Epperson v. Arkansas*, 393 U.S. 97, 106-07 (1968). Of course, religion may be taught from a historical or literary viewpoint if "presented objectively as part of a secular program of education." See *id.* at 106.

248. See text accompanying notes 252-256 *infra*.

249. See KITCHER, *supra* note 105, at 37.

250. See KARL R. POPPER, *THE LOGIC OF SCIENTIFIC DISCOVERY* 33 (1959).

251. See KITCHER, *supra* note 105, at 37-38.

sifiability"²⁵² and have fallen under the influence of Thomas Kuhn's important work, *The Structure of Scientific Revolutions*,²⁵³ they have come to regard theories such as Popper's as "hopelessly flawed"²⁵⁴ and have declared the entire project of demarcation "a pseudo-problem."²⁵⁵

In its place, many philosophers of science have turned their attention to analyzing the features that make some scientific theories more compelling than others. For example, Kuhn focuses not on how to distinguish science from nonscience, but instead on how particular theories gain acceptance as paradigmatic.²⁵⁶ Likewise, other philosophers of science have replaced categorical approaches to defining science with attempts to identify the criteria that make certain theories more persuasive and helpful than others.²⁵⁷ Even the Supreme Court seemed to adopt this approach in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*²⁵⁸ where it replaced a bright-line "general acceptance" test for the admission of scientific expert testimony with a series of general factors for courts to consider in determining whether a particular theory is scientifically valid.²⁵⁹ Courts should continue to follow the philosophers on this point and realize that characterizing a theory as scientific in some sense says nothing about whether it might also be religious or whether teaching it might endorse a religious viewpoint in violation of the Establishment Clause.

Not surprisingly, some philosophers have argued that creation science is so lacking in their specified characteristics that it does not qualify as a science at all.²⁶⁰ Yet courts need not open this definitional Pandora's Box. Even assum-

252. See *id.* at 42 ("[Falsifiability] either . . . debars most of what we take to be science from counting as science or it allows virtually anything to count."); see also Ruse, *supra* note 105, at 168 ("[C]an one distinguish science from non-science? . . . Simple criteria that supposedly give a clear answer to every case—for example, Karl Popper's single stipulation of falsifiability—will not do.") (footnote omitted).

253. THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (2d ed. 1970).

254. KITCHER, *supra* note 105, at 44.

255. NUMBERS, *supra* note 49, at xv.

256. See KUHN, *supra* note 253, at 1-9. Kuhn argued that new theories become paradigmatic when they provide answers to "anomalies"—conceptual problems that have caused previous theories to become unsatisfactory and unpersuasive in the scientific community. See *id.* at 77-91.

257. See, e.g., KITCHER, *supra* note 105, at 46-48 (emphasizing independent testability, unity, and fecundity); Michael Ruse, *Creation-Science Is Not Science*, in *CREATIONISM, SCIENCE, AND THE LAW*, *supra* note 105, at 150, 151-53 (pointing to explanatory power, predictive power, testability, tentativeness, and integrity).

258. 509 U.S. 579 (1993).

259. See *id.* at 585-95. Instead of setting out a "definitive checklist or test" for whether a certain theory or technique is scientifically valid for purposes of FED. R. EVID. 702, the Court made some "general observations." *Id.* at 593. Among the factors identified as relevant are testability, peer review and publication, rate of error, adequate control standards, and general acceptance in the scientific community. See *id.* at 593-94. Interestingly, one of these factors (testability) seems to rely heavily on Popper's falsifiability criterion. The Court cited Popper for the proposition that "[t]he criterion of the scientific status of a theory is its falsifiability, or refutability, or testability." *Id.* at 593 (alteration in original) (quoting KARL POPPER, *CONJECTURES AND REFUTATIONS: THE GROWTH OF SCIENTIFIC KNOWLEDGE* 37 (5th ed. 1989)). For additional discussion of the Court's philosophy of science, see Margaret G. Farrell, *Daubert v. Merrell Dow Pharmaceuticals, Inc.: Epistemology and Legal Process*, 15 *CARDOZO L. REV.* 2183 (1994); Sean O'Connor, *The Supreme Court's Philosophy of Science: Will the Real Karl Popper Please Stand Up?*, 35 *JURIMETRICS J.* 263 (1995).

260. See KITCHER, *supra* note 105, at 124 ("[T]he 'theory' that Creationists offer is not sufficiently like genuine science to make sense of . . . routine [scientific] inquiries. . . . People who live in

ing *arguendo* that the intelligent design theory of *Pandas* possesses some scientific characteristics,²⁶¹ this assumption does not alleviate our Establishment Clause concerns. The First Amendment forbids the government from establishing religion; it does not require it to teach science. Because *Pandas* teaches religion, and because teaching religion in public schools violates the Establishment Clause, the Court need not determine whether the book also qualifies as science in any nominal sense. Of course, as a policy matter, the question of whether a particular theory is good science, bad science, or not really science at all is quite an important question for school boards to consider when deciding whether to teach the theory. Nevertheless, as a constitutional matter, the question of whether *Pandas* is science ultimately turns out not to be a very important question after all.

CONCLUSION

In recent years, growing numbers of legal academics have decried the increasing secularization of American society.²⁶² There is considerable doubt, however, that these commentators have any cause to worry. As Kathleen Sullivan persuasively argues, there exist “numerous indicators of religion’s lively role in contemporary American social and political life”²⁶³ that undermine this

Creationist houses should not throw methodological stones.”); Ruse, *supra* note 105, at 168 (“The plaintiffs’ tactic [in *Mclean*] was to show that creation-science is less than weak or bad science. It is not science at all.”).

261. For example, one might argue that the claims associated with *Panda*’s core theory, such as that animals are extremely complex, that we will not find transitional fossils, and that we should not expect to see new species suddenly arriving on earth are all testable, falsifiable, explanatory, and predictive.

262. Michael McConnell argues that religion in America has been “shoved to the margins of public life.” See McConnell, *supra* note 151, at 127. Stephen Carter similarly asserts that the “common rhetoric of our society refuses to accept the notion that rational, public-spirited people can take religion seriously.” STEPHEN L. CARTER, *THE CULTURE OF DISBELIEF: HOW AMERICAN LAW AND POLITICS TRIVIALIZE RELIGIOUS DEVOTION* 6 (1993). Philip Johnson suggests that the “established religious philosophy” of modern America holds that “God is really dead and that humankind is therefore on its own.” PHILLIP E. JOHNSON, *REASON IN THE BALANCE: THE CASE AGAINST NATURALISM IN SCIENCE, LAW & EDUCATION* 37 (1995). Moreover, Johnson believes that an important driving force behind the antireligious philosophy is the view, proffered by the scientific establishment, that evolution as fact inherently denies the existence of God:

The issue decided in *Edwards* is clouded by the fact that the term *creationism* in newspaper and textbook usage refers to Genesis literalism and hence to the belief that the earth is no more than a few thousand years old. The Supreme Court opinion, however, addressed a much broader question than the age of the earth or the validity of the Genesis account. What Justice Brennan described as a “religious viewpoint” is the very broad proposition that a purposeful supernatural being—God—is responsible for our existence. The leading alternative to that belief is that purposeless material processes created us and that purpose and consciousness did not exist in the cosmos until they evolved naturalistically. This second viewpoint is incorporated in the scientific definition of evolution, because in contemporary usage “science” is thought to be based on a completely naturalistic understanding of reality.

Id. at 25.

263. Kathleen M. Sullivan, *Religion and Liberal Democracy*, 59 U. CHI. L. REV. 195, 195-96 (1992). Sullivan has argued that the very popularity of Carter’s book, including the fact that President Clinton publicly praised it, speaks strongly against the characterization of American society which Carter himself posits. See Kathleen M. Sullivan, *God as a Lobby*, 61 U. CHI. L. REV. 1655, 1655 (1994) (“If the President himself publicly cites a book urging Americans to take religious devotion seriously, how marginal can religion really be?”).

rather bleak vision of our society. Nevertheless, evolutionists have advanced a vision of the world which necessarily marginalizes religion. Evolutionists have argued that evolution renders religious beliefs "superfluous,"²⁶⁴ undermines rational belief in the existence of a supernatural being,²⁶⁵ and leads "straight to a vision which is equivalent to atheism."²⁶⁶

This antireligious agenda is cause for great concern. The idea that evolution and religion are inherently incompatible is quite incorrect.²⁶⁷ Evolutionary theory is concerned only with how species evolve over time²⁶⁸ and, though incompatible with a literal reading of *Genesis*, it says nothing of the existence or nonexistence of God. Even the Pope himself has recently endorsed evolution as a theory consistent with the teachings of the Catholic Church.²⁶⁹ Evolutionists and creationists alike err when they "perpetuate the false dilemma of having to choose between science and religion."²⁷⁰ Stephen J. Gould makes the point most forcefully:

To say it for . . . the umpteenth millionth time (from college bull sessions to learned treatises): science simply cannot (by its legitimate methods) adjudicate the issue of God's possible superintendence of nature. We neither affirm nor deny it; we simply can't comment on it as scientists. If some of our crowd have made untoward statements claiming that Darwinism disproves God, then I will find [my third grade teacher] and have their knuckles rapped for it Science can work only with naturalistic explanations; it can neither affirm nor deny other types of actors (like God) in other spheres²⁷¹

An antireligious agenda is not simply misguided, it is also dangerous to evolutionists from a legal perspective. Although it is unlikely that the Supreme Court would ever hold that evolution is so antithetical to religion as to preclude its teaching in public schools,²⁷² the Court might be forced to exclude certain materials that expressly urge an atheistic viewpoint,²⁷³ or even to require that teachers of evolution explicitly inform their students that evolution says nothing about the reasonableness of religious beliefs. If scientists continue to urge that evolution implies atheism, the Court might become less receptive to their

264. DAWKINS, *supra* note 27, at 316.

265. *See id.* at 317.

266. Peter Steinfels, *Beliefs*, N.Y. TIMES, Dec. 2, 1995, at 8 (quoting historian of science and evolutionist William Provine).

267. *See* Jeffery L. Sheler & Joannie M. Schrof, *The Creation*, U.S. NEWS & WORLD REP., Dec. 23, 1991, at 56, 57-64 (discussing the reconciliation of religion and evolution); *see also* KITCHER, *supra* note 105, at 188-92 (arguing that Christianity and evolution need not conflict).

268. *See* FUTUYMA, *supra* note 101, at 10-14 (examining the nature of the conflict between evolution and creationism); *see also* STRICKBERGER, *supra* note 212, at 598 (defining biological evolution as "[g]enetic changes in populations of organisms through time that lead to differences among them").

269. *See* John Tagliabue, *Pope: Evolution Not Just Hypothesis*, ORANGE COUNTY REG., Oct. 25, 1996, at News 1.

270. IAN G. BARBOUR, RELIGION IN AN AGE OF SCIENCE 10 (1990).

271. Gould, *supra* note 110, at 119.

272. *See* *Pelozo v. Capistrano Unified Sch. Dist.*, 37 F.3d 517, 521 (9th Cir. 1994), *cert. denied*, 115 S. Ct. 2640 (1995) (rejecting a claim that the teaching of evolution amounts to the teaching of a religion).

273. *See* BARBOUR, *supra* note 270, at 179 (arguing that public schools should not teach Dawkins' *The Blind Watchman*).

arguments altogether, particularly those aimed at keeping "creationism" out of the public schools.

Beyond the law, there is a more general concern. The Framers of the First Amendment recognized the potential for societal divisiveness created by disputes over religion and wrote the Establishment Clause to prevent these disputes from becoming explosive.²⁷⁴ Of course, by its very nature, the Constitution cannot proscribe purely private conduct, and evolutionists are free to say whatever they want outside government-sponsored forums. But the potential for divisiveness does not disappear when government steps out of religious disputes. Telling believers that their beliefs are unreasonable and irrational can do nothing but inflame passions, increase discord, and promote strife. *Pandas*, by sending a message to both atheists and non-Christians that their views on religion are disfavored, violates both the letter and the spirit of the Establishment Clause. However, it does not follow that since the state may not endorse the intelligent design theory of *Pandas*, the theory must therefore be irrational, untenable, or unreasonable. It is surely the case that schools should not teach religious beliefs to students, but it is equally true that schools should teach children, and scientists should remind themselves, that the potential for religious divisiveness does not stop when we walk out the classroom door.

274. See Sullivan, *Religion and Liberal Democracy*, *supra* note 263, at 197-200 ("[T]he negative bar against establishment of religion . . . was the price of ending the war of all sects against all.")