

DARWINISM AND THE LAW: CAN NON-NATURALISTIC SCIENTIFIC THEORIES SURVIVE CONSTITUTIONAL CHALLENGE?

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The entrance of Charles Darwin's¹ *Origin of Species*² changed the world. This is *not* because belief in evolution was a new and exciting theory unconsidered before this time, for indeed a variation of the view existed in many ancient cultures.³ In addition, several scientists already accepted a theory of evolution before the publication of Darwin's book,⁴

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I wish to thank James Stambaugh, librarian at Michigan Theological Seminary, for providing documentation. Also much appreciation to Eddie Colanter, Eric Rice, and Sean Choi for their assistance in checking footnotes and/or providing sources for this article.

¹ Charles Robert Darwin (1809-1882) was a British scientist who laid the foundation for modern evolutionary theory through his concept of the development of all forms of life through the gradual process of natural selection. *Darwin, Charles Robert*, MICROSOFT ENCARTA ONLINE ENCYCLOPEDIA (2001), at <http://encarta.msn.com>. He was born in Shrewsbury, Shropshire, England on February 12, 1809. *Id.* Darwin originally went to study medicine at the University of Edinburgh but then dropped out in 1827 to prepare for becoming a clergyman in the Church of England by studying at the University of Cambridge. *Id.* While at Cambridge he met two major scientists, geologist Adam Sedgwick and naturalist John Stevens Henslow, who had profound impact on his life. *Id.* After graduating from Cambridge in 1831, Darwin joined an English survey ship, the HMS Beagle, largely due to Henslow's recommendation, to take a scientific expedition around the world. *Id.*

² CHARLES DARWIN, ORIGIN OF SPECIES: BY MEANS OF NATURAL SELECTION, OR THE PRESERVATION OF FAVOURED RACES IN THE STRUGGLE FOR LIFE (1859).

³ Most ancient cosmologies of the Mediterranean and Mesopotamian societies held an evolutionary view of the origin of the cosmos, though expressed, necessarily, in pre-scientific terms. Note the words of Ernest L. Abel:

Although it is customary to credit the inception of this theory to Charles Darwin and his immediate predecessors, a rudimentary form of this notion can be traced back to the beginnings of written history itself. In fact, the belief that life had its origins in a single basic substance is so widespread among the various peoples of the world, primitive or civilized, that it can be considered one of the few universal themes in the history of ideas.

ERNEST L. ABEL, ANCIENT VIEWS ON THE ORIGIN OF LIFE 15 (1973). See also David Barton, "A Death Struggle Between Two Civilizations," 13 REGENT U. L. REV 297 (2001).

⁴ Many scientists believed in what has become known as the general theory of evolution before publication of *Origin of Species*. Darwin's contribution was to provide a

though certainly not the majority in Darwin's time, since many of his contemporaries within the scientific community had serious concerns about his theories.⁵ The benefit of *Origin of Species*, many of its various

scientific mechanism—natural selection—to the philosophical beliefs of evolutionary scientists. C.D. Darlington indicates that Charles Darwin's grandfather (d. 1802) was one of these advocates:

In favor of the evolution of animals from "one living filament" Erasmus Darwin [who died before Charles was born] assembled the evidence of embryology, comparative anatomy, systematics, geographical distribution and, so far as man is concerned, the facts of history and medicine . . . These arguments about the fact of transformation were all of them already familiar. As to the means of transformation, however, Erasmus Darwin originated almost every important idea that has since appeared in evolutionary theory.

C.D. Darlington, *The Origin of Darwinism*, 200 SCI. AM. 60, 61-62 (1959).

Topoff further demonstrates the importance of Charles Darwin's grandfather to the development of evolutionary thought:

Erasmus Darwin, Charles's grandfather, was one of the most celebrated personalities in England during the last decade of the 18th century. As physician, philosopher and poet, his writings on evolution utilized evidence from embryology, comparative anatomy, systematics and zoogeography. Two years after his death, the word "Darwinian" was in common use. His book *Zoonomia* was translated into French, German and Italian. Four years after its publication, Thomas Malthus elaborated on Erasmus's ideas in his *Essays on Population*. And nine years later, Lamarck expounded a theory of evolution based on Erasmus's notion of the effects of use and disuse. Another 63 years elapsed before Charles Darwin published *On the Origin of Species*.

Howard Topoff, *A Charles Darwin (187th) Birthday Quiz*, 85 AM. SCIENTIST 104, 106 (1997).

Also before Charles Darwin was Sir Charles Lyell who wrote the highly influential *Principles of Geology*. See SIR CHARLES LYELL, PRINCIPLES OF GEOLOGY (Univ. of Chi. Press 1990) (1833). Though written in the early nineteenth century, his book remains a favorite with geologists, according to a survey by D.M. Triplehorn and J.H. Triplehorn in 41 J. GEOLOGICAL EDUC. 260-61 (1993). For an overview of Lyell's work, see Oklahoma Baptist University Division of Natural Sciences and Mathematics, *Charles Lyell, Principles of Geology*, at <http://www.okbu.edu/academics/natsci/earth/lyell> (last visited Mar. 23, 2001). Loren C. Eiseley says that Darwin would not have succeeded as he did without Lyell's *Principles of Geology* to guide him. Loren C. Eiseley, *Charles Lyell*, 201 SCI. AM. 98, 106 (1959). Ernst Mayr speaks of the effect that Lyell had on Darwin:

But what effect did Lyell have on Darwin? Everyone agrees that it was profound; there was no other person whom Darwin admired as greatly as Lyell. *Principles of Geology*, by Lyell, was Darwin's favorite reading on the *Beagle* and gave his geological interests new direction. After the return of the *Beagle* to England, Darwin received more stimulation and encouragement from Lyell than from any other of his friends. Indeed, Lyell became a father figure for him and stayed so for the rest of his life. Darwin's whole way of writing, particularly in the *Origin of Species*, was modeled after the *Principles*. There is no dispute over the facts.

Ernst Mayr, *The Nature of the Darwinian Revolution*, 176 SCI. 981, 985 (1972).

⁵ Francis Glasson says that "Darwin expected that his book would arouse violent criticism from the scientific world, and it certainly came from that quarter. According to his

postulates having long been discarded by contemporary scientists,⁶ is that it provided an alternative mechanism by which to explain the beginning and development of the cosmos and life.⁷ The orthodox religious view of special creation (*creatio ex nihilo*)⁸ no longer would be required to explain how life began and the battle between a theistic (supernaturalistic) and a non-theistic (naturalistic) explanation for the cosmos began.⁹

own account, most of the leading scientists of the day believed in the immutability [sic] of species." Francis Glasson, *Darwin and the Church*, 99 NEW SCIENTIST 638 (1983). In his introduction Darwin confirms this perspective. ORIGIN OF SPECIES, *supra* note 2, at 13. Additionally Owen Chadwick, Regius professor of modern history at Cambridge wrote, "At first much of the opposition to Darwin's theory came from scientists on grounds of evidence, not from theologians on grounds of scripture." Glasson, *supra*, at 639. For example, Darwin's geology teacher and friend, Adam Sedgwick, did not accept Darwin's views of evolution: "We venture to affirm that no man who has any name in science, properly so-called has spoken well of the book, or regarded it with any feelings but those of deep aversion. We say this advisedly, after exchanging thoughts with some of the best-informed men in Britain." R.E.D. CLARK, DARWIN BEFORE AND AFTER 49 (1958), quoted in BOLTON DAVIDHEISER, EVOLUTION AND THE CHRISTIAN FAITH 166 (1969).

The reaction to the *Origin* was immediate. Some biologists argued that Darwin could not prove his hypothesis. Others criticized Darwin's concept of variation, arguing that he could explain neither the origin of variations nor how they were passed to succeeding generation. This particular scientific objection was not answered until the birth of modern genetics in the early 20th century. . . . In fact, many scientists continued to express doubts for the following 50 to 80 years.

Darwin, Charles Robert, MICROSOFT ENCARTA ONLINE ENCYCLOPEDIA, *supra* note 1.

⁶ The scientific community, for the most part, adheres to evolution without reservation, but the mechanism of how macro-evolution could occur has generated a considerable difference of opinion. Carol Cleary, *Coup Against Darwin's Dogma Opens Way for Biology Breakthroughs*, 4 FUSION 45, 45-47 (1981). Cleary begins her article on a conference of evolutionary biologists: "The fundamental tenets of Darwinian evolutionary biology are inadequate in light of current scientific findings. This was the conclusion of 150 leading evolutionists attending an international conference in Chicago in late October." *Id.* at 45; see also JEFFREY LEVINTON, GENETICS, PALEONTOLOGY, AND MACROEVOLUTION 2-9 (1988). "The difficulty of distilling an unambiguous definition of macroevolution is influenced by our current ignorance of the relationship between morphological and genetic divergence among distantly related taxa." LEVINTON, *supra*, at 3.

⁷ According to Mayr,

Darwin marshaled the evidence in favor of a transmutation of species so skillfully that from that point on the eventual acceptance of evolutionism was no longer in question. But he did more than that. In natural selection he proposed a mechanism that was far less vulnerable than any other previously proposed. The result was an entirely different concept of evolution. Instead of endorsing the 18th-century concept of a drive toward perfection, Darwin merely postulated change.

Mayr, *supra* note 4, at 987.

⁸ *Creacio ex nihilo* is the Latin phrase for "creation out of nothing." DAVID P. SCAER, A LATIN ECCLESIASTICAL GLOSSARY 10 (1978).

⁹ In reality no scientific explanation may be offered for the existence of the cosmos itself. One must either accept that the universe always was or that it came into existence

I. BACKGROUND TO THE CONFLICT BETWEEN CREATION AND EVOLUTION IN AMERICAN LAW

A. *The Scopes Trial*

1. Backdrop to the Trial

The *Scopes trial*¹⁰ was probably the beginning of public awareness of evolution in the United States. Scientists of the early twentieth century had already largely accepted evolution,¹¹ as had many Christian church leaders¹² and theologians.¹³ The *Scopes trial* came in the midst of the

through some external unnamed reality. Neither of these may be defended through scientific investigation, though extrapolation of evidence may be offered philosophically. See *infra* section IV. A. for a discussion about the nature of science and presuppositions.

¹⁰ For a complete transcript of the *Scopes trial* and additional important historical information, see THE WORLD'S MOST FAMOUS COURT TRIAL: TENNESSEE EVOLUTION CASE (photo. reprint 1990) (1925).

¹¹ LOUIS T. MORE, THE DOGMA OF EVOLUTION (1925); *see also* GERTRUDE HIMMELFARB, DARWIN AND THE DARWINIAN REVOLUTION (1959).

¹² Francis Glasson reveals that Darwin did not encounter widespread disputation from the religious establishment in England:

Despite abundant evidence to the contrary, it is widely believed that the Church was a bitter opponent of evolution. . . . [The Huxley-Wilberforce] encounter in a highly dramatized form with invented speeches has been broadcast so often on radio and television that the impression given is that Samuel Wilberforce spoke for the Church and that this was the official Christian response!

Glasson, *supra* note 5, at 639. Apparently, then, many Christian leaders did not oppose Darwin's teaching. *Id.* at 638.

¹³ Several theologians toward the end of the nineteenth century and beginning of the twentieth century accepted the theory of evolution in some fashion. For example, Augustus H. Strong says, "Evolution is only the method of God. It has to do with the *how*, not with the *why*, of phenomena, and therefore is not inconsistent with design, but rather is a new and higher illustration of design." AUGUSTUS H. STRONG, SYSTEMATIC THEOLOGY 76 (1907). Strong believed that evolution actually argued against Deism and demonstrated the purposes and nature of God. *See id.* at 75-78. John P. Newport notes some other conservative theologians who partly succumbed:

It is noteworthy that three conservative leaders of this same period—B.B. Warfield, George F. Wright, and James Orr—showed sympathy with the ideas of theistic evolution. Warfield, for example, acknowledged the possibility of evolution, although he cautioned that it "cannot act as a substitute for creation, but at best can supply only a theory of the method of the divine providence."

Wright wrote in volume 4 of *The Fundamentals*, published by the Bible Institute of Los Angeles in 1917, that "the word evolution is in itself innocent enough, and has a large range of legitimate use. The Bible, indeed, teaches a system of evolution. The world was not made in an instant, or even in one day (whatever period day may signify) but in six days. Throughout the whole process there was an orderly progress from lower to higher forms of matter and life. In short there is an established order in all the Creator's work."

fundamentalist-modernist controversy¹⁴ which threatened to engulf all of religious America and was seen as the heart and soul of the church.¹⁵

The *Scopes* trial was initiated¹⁶ by the American Civil Liberties

James Orr, the eminent Scottish theologian, wrote in his book, *The Christian View of God and the World*, "On the general hypothesis of evolution, as applied to the organic world, I have nothing to say, except that, within certain limits, it seems to me extremely probable, and supported by a large body of evidence. This, however, only refers to the fact of a genetic relationship of some kind between the different species of plants and animals, and does not affect the means by which this development may be supposed to be brought about.

JOHN P. NEWPORT, LIFE'S ULTIMATE QUESTIONS 140 (1989).

Not all Christian theologians were as agreeing to evolution as was Strong, and not all yielded under pressure as did Orr. James Oliver Buswell, Jr., speaks of an early infatuation with the theory of evolution but then a rejection after further study of the evidence. JAMES OLIVER BUSWELL, JR., A SYSTEMATIC THEOLOGY OF THE CHRISTIAN RELIGION 323-24 (1962). Louis Berkhof notes the disagreements among scientists regarding the theory and the unlikelihood of the mechanism of evolution. LOUIS BERKHOF, SYSTEMATIC THEOLOGY 161-64 (rev. & enlarged ed. 1941).

¹⁴ An unnamed editor of *The World's Most Famous Court Trial* elucidates the setting of the Scopes trial within the modernist-fundamentalist debates of the 1920s:

The Scopes Evolution Trial, for all its ballyhoo, was a complex event with its serious side. It cannot be understood apart from the social and religious climate of the twenties; especially important is the context of the modernist-fundamentalist religious controversy of the early decades of this century which, by bringing the Biblical creation vs. naturalistic evolution issue into sharper focus, created wide public interest as evidenced by the anti-evolution laws proposed in several states.

THE WORLD'S MOST FAMOUS COURT TRIAL, *supra* note 10, at 1 app. II. For discussion of modernist-fundamentalist controversy, see 1 FUNDAMENTALISM VERSUS MODERNISM 231-303 (Eldred C. Vanderlaan ed., 1925) (presenting both sides of the debate); William Jennings Bryan, *Moses vs. Darwin*, 83 HOMILETIC REV. 446-52 (1922); and S. Parkes Cadman, *Darwin's Theory of Natural Selection*, 83 HOMILETIC REV. 452-56 (1922).

¹⁵ See Paul M. Waggoner, *The Historiography of the Scopes Trial: A Critical Re-evaluation*, 5 TRINITY J. 155, 155-74 (1984) (critiquing the Scopes trial and its impact on the course of American fundamentalism). Waggoner provides reference to a number of important historical works on the Scopes trial. *See id.*

¹⁶ I say initiated because John Scopes was approached by the ACLU for him to confess to violating the Butler Act of 1925, *see infra* note 60 and accompanying text, so that he might be charged with a violation of the act. William Donohue comments about this instigation:

Lucille Milner of the ACLU spotted the case [speaking of Butler's legislative bill, *see infra* note 60] in a Tennessee newspaper and brought the issue to Baldwin's attention. According to Milner, he "saw its import in a flash" and decided to inform the board. The board agreed to enter the controversy and placed an announcement in the Tennessee newspapers offering services to any teacher who would agree to challenge the law. George W. Rapplegea, a young engineer, read of the Union's offer in the 4 May 1925 edition of the Chattanooga *Times* and quickly sought a client for the ACLU; John T. Scopes, a high school teacher, agreed to challenge the law.

Union¹⁷ [hereinafter ACLU] in a newspaper ad¹⁸ to test a Tennessee law¹⁹ which forbade the teaching of the idea that human beings evolved from lower forms of life, in the state's public schools,²⁰ because the idea

WILLIAM A. DONOHUE, THE POLITICS OF THE AMERICAN CIVIL LIBERTIES UNION 303 (1985); see also Warren Alle, Backgrounds of the Scopes Trial at Dayton, Tennessee (1959) (unpublished thesis, University of Tennessee) (on file with author); L. SPRAGUE DE CAMP, THE GREAT MONKEY TRIAL (1968); JOHN T. SCOPES & JAMES PRESLEY, CENTER OF THE STORM: MEMOIRS OF JOHN T. SCOPES (1967).

¹⁷ The ACLU is the country's largest nonprofit law organization. It began in 1920 and since then has been involved in tens of thousands of cases regarding matters of civil liberties, including some of the most celebrated legal cases in the United States. The Scopes trial still remains as one of the organization's most famous test cases.

The ACLU has worked on some cases that are praised by both conservative and liberal scholars, as well as the public (e.g., concerns for the mentally ill, minority rights), but often has promoted causes that have drawn much acrimony from the general public and conservatives, such as homosexual rights, abortion on demand, affirmative action, and abolition of the death penalty. *American Civil Liberties Union*, MICROSOFT ENCARTA ONLINE ENCYCLOPEDIA, *supra* note 1. Even the highest levels of government have criticized the ACLU. *Id.* In 1981, U.S. Attorney General Ed Meese called the ACLU "a criminals' lobby" and former president George H.W. Bush used the public feelings against the ACLU in his bid for the White House against his Democrat opponent, ACLU member Governor Michael Dukakis. *Id.* For a critical interaction with the policies of the ACLU, see DONOHUE, *supra* note 16.

¹⁸ The actual ad read as follows:

"We are looking for a Tennessee teacher who is willing to accept our services in testing this law in the courts," the New York based American Civil Liberties Union announced soon after the anti-evolution statute passed. "Our lawyers think a friendly test can be arranged without costing a teacher his or her job. Distinguished counsel have volunteered their services. All we need now is willing client." This announcement appeared in a Chattanooga paper on May 4th, called The Daily Times.

The Interactive Bible, *Textbook Fraud: Inherit the Wind Is Intellectual Pornography!*, at <http://www.bible.ca/tracks/textbook-fraud-scopes-trial-inherit-wind.htm> (last visited Mar. 23, 2001).

¹⁹ For the actual reading of the Act, see *infra* note 60 and accompanying text.

²⁰ Evolution from lower forms of life to higher forms of life is often called macro-evolution (believed by the scientific establishment) as distinguished from micro-evolution (accepted by all scientists, including creationists) in reference to changes within "kinds" or species, often called micro-evolution (accepted by all). Newport defines the differences between these two kinds of evolution:

Microevolution, or the special theory of evolution, can be defined as the proposition that many living animals can be observed over the course of time to undergo changes so that new species are formed. In certain cases, this type of evolution can be demonstrated by experiments. Therefore, in this limited sense it is possible to call evolution a fact. Current scientific literature shows that most biologists are giving their attention to microevolution. They can verify genetic changes in the laboratory and in nature at this limited level.

Macroevolution, or the general theory of evolution, is defined as the theory that all the living forms in the world have arisen from a single source, which itself came from an inorganic form. This is the classic evolution theory taught in textbooks and in courses in zoology.

contradicted the Biblical account of creation. The ACLU hired the famous defense attorney Clarence Darrow²¹ to defend teacher John Scopes.²² Scopes, a substitute science teacher,²³ agreed to confess to having violated the Tennessee anti-evolution law, teaching evolution from the popular biology book *A Civic Biology*,²⁴ although post-trial

NEWPORT, *supra* note 13, at 138. Levinton does not see the difference between the two, LEVINTON, *supra* note 6, at 2-9, and neither does Robert T. Pennock, who says that there is "no essential difference in kind between microevolution and macroevolution; the difference is simply a matter of degree." ROBERT T. PENNOCK, TOWER OF BABEL: THE EVIDENCE AGAINST THE NEW CREATIONISM 155 (1999). But Carol Cleary's report seems to suggest differently for some evolutionists: "The microevolution of the Modern Synthesis does not, they concluded, lead to macroevolution—the evolution of major differences that result in higher-ordered (taxonomic) evolutionary patterns." Cleary, *supra* note 6, at 45.

²¹ Clarence Seward Darrow (1857-1938), a graduate of the University of Michigan Law School, at the time of the Scopes trial was America's most famous defense attorney. His clients included murderers, communists, socialists, and anarchists. UMKC Law, *The Scopes Trial: Clarence Darrow*, at <http://www.law.umkc.edu/faculty/projects/trials/scopes/darrowcl.htm> (last visited Mar. 24, 2001). He has been called "a sophisticated attorney with the mannerisms of a country lawyer." *Id.* John Scopes was the only client that Darrow ever volunteered to represent at no charge, doing so because he said, "I really wanted to take part in it." *Id.* Darrow had a life-long interest in science and his family "had all of Darwin's books as fast as they were published." *Id.*

²² John Scopes was a Rhea County teacher and athletic coach who took the teaching position in Dayton as his first position after graduating from the University of Kentucky in 1924. UMKC Law, *John Scopes*, at http://www.law.umkc.edu/faculty/projects/trials/scopes/SCO_SCO.HTM (last visited Mar. 24, 2001). He was described as a modest, friendly, and shy person. *Id.* Scopes never gave testimony at trial, but admitted to the teaching of evolution. *Id.* (But see *infra* note 25 where he later admitted to not having taught evolution.) After the trial he was offered his teaching position back but instead accepted a scholarship as a gift from various scientists and newsmen to attend the University of Chicago. UMKC Law, *supra*. He studied geology in September of 1925 and after two years of study was hired by Gulf Oil and went to Venezuela. *Id.* From 1940 until his retirement Scopes worked at the United Gas Corporation headquarters in Shreveport, Louisiana. *Id.*

²³ John Scopes was not really a regular biology teacher but coached and taught math. DONOHUE, *supra* note 16, at 303.

²⁴ The text supposedly used by Scopes was George W. Hunter's *A Civic Biology*. Joyce F. Francis says of the book,

When the anti-evolution movement began after World War I, George W. Hunter's *A Civic Biology* was the most frequently used high school biology textbook. Hunter was a true believer of Darwin's evolutionary theory, and evolution was prominently discussed in his textbook. In fact, Hunter wrote that Darwin "gave the world the proofs of the theory on which we today base the progress of the world."

Joyce F. Francis, *Creationism v. Evolution: The Legal History and Tennessee's Role in That History*, 63 TENN. L. REV. 753, 757 (1996). Following are a few of the statements in Hunter's book which probably would have been very unacceptable to the Christian populace of Tennessee who held to a literal creation story as depicted in the Bible in *Genesis* 1:

Evolution means change, and these groups are believed by scientists to represent stages in complexity of development of life on the earth. Geology teaches that millions of years ago, life upon the earth was very

evidence indicated that he had not done so.²⁵

The expected dignity of a court trial gave way to a circus-like atmosphere,²⁶ probably unlike anything experienced in the United States until the famous O.J. Simpson criminal trial,²⁷ but considerably different

simple, and that gradually more and more complex forms of life appeared, as the rocks formed latest in time show the most highly developed forms of animal life. The great English scientist, Charles Darwin, from this and other evidence, explained the theory of evolution. This is the belief that simple forms of life on the earth slowly and gradually gave rise to those more complex and that thus ultimately the most complex forms came into existence.

GEORGE W. HUNTER, A CIVIC BIOLOGY 194 (1914). Hunter is careful when discussing man's evolution and his comparison with an ape: "Although anatomically there is a greater difference between the lowest type of monkey and the highest type of ape than there is between the highest type of ape and the lowest savage, yet there is an immense mental gap between monkey and man." *Id.* at 195. Hunter evinces the racist perspective of evolution assumed with the sub-title of Darwin's *Origin of Species (The Preservation of Favoured Races in the Struggle for Life)*:

At the present time there exist upon the earth five races or varieties of man, each very different from the other in instincts, social customs, and, to an extent, in structure. These are the Ethiopian or negro type, originating in Africa; the Malay or brown race, from the islands of the Pacific; the American Indian; the Mongolian or yellow race, including the natives of China, Japan, and the Eskimos; and finally, the highest type of all, the Caucasians, represented by the civilized white inhabitants of Europe and America.

Id. at 196.

²⁵ Donohue gives a quotation from Scopes that he made after the trial: "To tell the truth, I wasn't sure I had taught evolution." DONOHUE, *supra* note 16, at 303. In Sprague de Camp's book *The Great Monkey Trial*, a conversation is recorded that is said to have occurred between John Scopes and William K. Hutchinson of the International News Service during the last days of the trial:

Scopes said: "There's something I must tell you. It's worried me. I didn't violate the law. . . I never taught that evolution lesson. I skipped it. I was doing something else the day I should have taught it, and I missed the whole lesson about Darwin and never did teach it. Those kids they put on the stand couldn't remember what I taught them three months ago. They were coached by the lawyers." "Honest, I've been scared all through the trial that the kids might remember I missed the lesson. I was afraid they'd get on the stand and say I hadn't taught it and then the whole trial would go blooey. If that happened they would run me out of town on a rail."

When Hutchinson replied that would make a great story, Scopes said: "My god no! Not a word of it until the Supreme Court passes my appeal. My lawyers would kill me."

DE CAMP, *supra* note 16, at 432, quoted in David N. Menton, *A Hollywood History of the 1925 Scopes 'Monkey' Trial* (1997), available at <http://www.bible.ca/tracks/textbook-fraud-scopes-trial-inherit-wind.htm#overview>.

²⁶ See Richard M. Cornelius, *Their Stage Drew All the World: A New Look at the Scopes Evolution Trial*, TENN. HIST. Q., Summer 1981, at 130 (arguing that the trial began as a public relations ploy to draw attention to financially stricken Dayton, Tennessee).

²⁷ The trial of O.J. Simpson rivals the Scopes trial, and with the advent of television captured the attention of America and the world probably more than any other trial to

from Jerome Lawrence and Robert E. Lee's fictional *Inherit the Wind*,²⁸ which was based on the Scopes trial. Journalists throughout the United States, and from other countries, crowded into the small town of Dayton, Tennessee.²⁹ William Jennings Bryan,³⁰ an eloquent speaker and three-

date. O.J. Simpson (1947-) was an American football star accused of killing his former wife Nicole Brown Simpson and her friend, Ronald Goldman in 1994. *Simpson, O.J.*, MICROSOFT ENCARTA ONLINE ENCYCLOPEDIA, *supra* note 1. He was acquitted after an expensive and lengthy trial, though he was found responsible for the wrongful deaths of his wife and Goldman in a subsequent civil trial. *Id.* For a comprehensive look at the Simpson trial, see UMKC Law, *Famous American Trials*, at <http://www.law.umkc.edu/faculty/projects/trials/Simpson/simpson.htm> (last visited Jan. 5, 2001). Bill Haltom comments, "The Scopes Trial was to the Roaring Twenties what the O.J. Trial was to the Boring Nineties." Bill Haltom, *Save Us From Scopes II! Monkey Business: The Sequel*, 32-JUN TENN. B.J. 37 (1996).

²⁸ See Phillip E. Johnson, "*Inherit the Wind*": The Play's the Thing, 13 REGENT U. L. REV. 279 (2001).

²⁹ Historian Richard M. Cornelius describes the state of affairs:

Back in Dayton the population swelled from about 1800 to about 5000 at the height of the trial. There was an increasing carnival atmosphere: refreshment stands, monkey souvenirs, eccentrics such as "John the Baptist the Third," and oddities such as Joe Mendi, the trained chimpanzee. And then there were the media people: three news services and 120 reporters, whose stories totaled about two million words and whose ranks included H.L. Mencken, Joseph Wood Krutch, and Westbrook Pegler; 65 telegraph operators, who sent more words to Europe and Australia than had ever been cabled about any other American happening; and Quin Ryan and the radio crew from the *Chicago Tribune*'s WGN, who did the first live national broadcast of an American trial.

RICHARD M. CORNELIUS, WORLD'S MOST FAMOUS COURT TRIAL 67 (1991) (citations omitted).

³⁰ William Jennings Bryan (1860-1925) was one of the major orators in the early 20th century, three times nominated by the Democratic party for president of the United States. UMKC Law, *William Jennings Bryan (1860-1925)*, at <http://www.law.umkc.edu/faculty/projects/trials/scopes/bryanw.htm> (last visited Jan. 5, 2001). He became the nation's most prominent person in the crusade against the theory of evolution. *Id.* As a young man he said that he "looked into evolution" and found it lacking and so "resolved to have nothing to do with it." *Id.* At a Baptist convention, Bryan spoke of evolution as fiction: "When I want to read fiction, I don't turn to the *Arabian Nights*; I turn to works of biology—I like my fiction wild. Scientists make a guess and call it a hypothesis. 'Guess' is too short a word for a professor." *Id.* In his evangelistic fervor he is reported to have said in regards to geological evidence purported to support evolution: "The Rock of Ages is more important than the age of rocks." *Id.* Bryan was Secretary of State under President Woodrow Wilson. RICHARD M. CORNELIUS, UNDERSTANDING WILLIAM JENNINGS BRYAN AND THE SCOPES TRIAL 2 (1998). He held many views ahead of his time such as popular election of senators, a graduated income tax, woman suffrage, public regulation of political campaign contributions, the Federal Reserve Act, workman's compensation, minimum wage, an eight-hour day. *Id.* See also Edward J. Larson, who says that "[a]lthough it was his stance against Darwinism that brought him into alliance with religious conservatives, Bryan entered the anti-evolution crusade as one of America's preeminent political liberals." Edward J. Larson, *The Scopes Trial and the Evolving Concept of Freedom*, 85 VA. L. REV. 503, 508 (1999) (arguing that the Scopes trial provided a narrative against majoritarian oppression); see also SUMMER FOR THE GODS: THE SCOPES TRIAL AND AMERICA'S

time nominee for presidency of the Democratic Party,³¹ was no match for the manner and tactics of Clarence Darrow, who was able to get Bryan on the witness stand as an expert in the Bible.³²

Extravagant, exaggerated, and excessive claims were made by both sides in the trial. One account described the extravagant conditions this way:

Members of the jury were caught up more in the drama of the event than in the proceedings themselves. Former colleagues and acquaintances were now adversaries; both Darrow and Malone had assisted the political ambitions of Bryan. Scopes had been in the graduating class at Salem High School when Bryan delivered the commencement address. Scientific experts came from all over to testify, but none of their statements was allowed as evidence. Darrow was cited for contempt and Bryan took the witness stand. Scopes was never called to testify. Moreover, Scopes was a math teacher who only periodically taught biology as a substitute. He later admitted, "To tell the truth, I wasn't sure I had taught evolution." No matter. If Scopes was found guilty . . . Bryan would pay his fine, contending that the law should not have had a penalty.³³

2. The Testimony of William Jennings Bryan

The interrogation of Byran by Darrow was highly unusual,³⁴ with Darrow attempting to demonstrate that the arguments upheld by Byran in the case were foolish ideas "that no intelligent Christian on earth believes."³⁵ Bryan testified that the reason he would take the stand was

CONTINUING DEBATE OVER SCIENCE AND RELIGION (1997). But see the critique of Larson's book in Don Herzog, *Liberalism Stumbles in Tennessee*, 96 MICH. L. REV. 1898-1909 (1998). See also LAWRENCE W. LEVINE, DEFENDER OF THE FAITH: WILLIAM JENNINGS BRYAN: THE LAST DECADE, 1915-1925, at 274-78 (1965).

³¹ UMKC Law, *supra* note 30.

³² On day seven of the trial, defense attorney Darrow questioned prosecuting attorney Bryan—unusual to say the least—regarding matters of miracles in the Bible and whether the Bible was literally true. See THE WORLD'S MOST FAMOUS TRIAL, *supra* note 10, at 284-304.

³³ DONOHUE, *supra* note 16, at 303-04. Some of the more bizarre elements of this spectacle are given by William Donohue:

As Cornelius has observed, the trial became a "tour de farce" as eccentrics of every kind appeared: Joe Mendi—a trained chimpanzee—was there along with Deck "Bible Champion of the World" Carter and Louis Levi Johnson Marshall, "Absolute Ruler of the Entire World, Without Military, Naval or Other Physical Force."

Id. at 303.

³⁴ For a discussion of Mr. Bryan's call to the stand and his intention subsequently to call Mr. Darrow and others to the stand, see THE WORLD'S MOST FAMOUS TRIAL, *supra* note 10, at 284.

³⁵ *Id.* at 304.

not for strictly legal purposes but his desire to have a Christian testimony before the world:

Mr. Bryan—The reason I am answering is not for the benefit of the superior court. It is to keep these gentlemen from saying I was afraid to meet them and let them question me, and I want the Christian world to know that any atheist, agnostic, unbeliever, can question me any time as to my belief in God, and I will answer him.³⁶

The questioning took several tacks but the underlying approach was to call into question the reasonableness of the literal approach to Scripture that Bryan supported, by seeking to get Bryan to admit that the miracles that he accepts from the Bible are nonsensical:

Q—But when you read that Jonah swallowed the whale—or that the whale swallowed Jonah—excuse me please—how do you literally interpret that?

A—When I read that a big fish swallowed Jonah—it does not say whale.

Q—Doesn't it? Are you sure?

A—That is my recollection of it. A big fish, and I believe it, and I believe in a God who can make a whale and can make a man and make both what He pleases.

....

Q—Now, you say, the big fish swallowed Jonah, and he there remained how long—three days—and then he spewed him upon the land. You believe that the big fish was made to swallow Jonah?

A—I am not prepared to say that; the Bible merely says it was done.³⁷

Some of that questioning was harsh and entertaining at the same time:

Mr. Darrow—You insult every man of science and learning in the world because he does not believe in your fool religion.

The Court—I will not stand for that.

Mr. Darrow—For what he is doing?

The Court—I am talking to both of you.

....

Q—Wait until you get to me. Do you know anything about how many people there were in Egypt 3,500 years ago, or how many people there were in China 5,000 years ago?

A—No.

Q—Have you ever tried to find out?

A—No, sir. You are the first man I ever heard of who has been interested in it. (Laughter.)

Q—Mr. Bryan, am I the first man you ever heard of who has been interested in the age of human societies and primitive man?

³⁶ *Id.* at 300.

³⁷ *Id.* at 285, 288.

A— You are the first man I ever heard speak of the number of people at those different periods.

Q— Where have you lived all your life?

A— Not near you. (Laughter and applause.)

Q— Nor near anybody of learning?

A— Oh, don't assume you know it all.³⁸

Other questions from Darrow to Bryan reveals that Bryan was less a religious fundamentalist than has been popularly thought, since he testified that the days of creation may not have been solar days of twenty-four hours, and that the earth might be very old:

Q— Have you any idea how old the earth is?

A— No.

Q— The book you have introduced in evidence tells you, doesn't it?

A— I don't think it does, Mr. Darrow.

Q— Let's see whether it does; is this the one?

A— That is the one, I think.

Q— It says B.C. 4004?

A— That is Bishop Usher's calculation.

Q— That is printed in the Bible you introduced?

A— Yes, sir. . . .

Q— Would you say that the earth was only 4,000 years old?

A— Oh, no; I think it is much older than that.

Q— How much?

A— I couldn't say. . . .

Q— Do you think the earth was made in six days?

A— Not six days of twenty-four hours.

Q— Doesn't it say so?

A— No, sir. . . .

Q— . . . Does the statement, "The morning and the evening were the first day," and "The morning and the evening were the second day," mean anything to you?

A— I do not think it necessarily means a twenty-four-hour day.

Q— You do not?

A— No.

Q— What do you consider it to be?

A— I have not attempted to explain it. If you will take the second chapter— let me have the book. (Examining Bible.) The fourth verse of the second chapter says: "These are the generations of the heavens and of the earth, when they were created in the day that the Lord God made the earth and the heavens," the word "day" there in the very next chapter is used to describe a period. I do not see that there is any necessity for construing the words, "the evening and the morning," as meaning necessarily a twenty-four-hour day, "in the day when the Lord made the heaven and the earth."

³⁸ *Id.* at 288, 293.

Q—Then, when the Bible said, for instance, “and God called the firmament heaven. And the evening and the morning were the second day,” that does not necessarily mean twenty-four hours?

A—I do not think it necessarily does.

Q—Do you think it does or does not?

A—I know a great many think so.

Q—What do you think?

A—I do not think it does.

Q—You think those were not literal days?

A—I do not think they were twenty-four-hour days.

Q—What do you think about it?

A—That is my opinion—I do not know that my opinion is better on that subject than those who think it does.

Q—You do not think that?

A—No. But I think it would be just as easy for the kind of God we believe in to make the earth in six days as in six years or in 6,000,000 years or in 600,000,000 years. I do not think it important whether we believe one or the other.

Q—Do you think those were literal days?

A—My impression is they were periods, but I would not attempt to argue as against anybody who wanted to believe in literal days.

....

Q—The creation might have been going on for a very long time?

A—It might have continued for millions of years.³⁹

What is especially interesting about Bryan's testimony is that he does not fall into the category of recent age creationists as is so usually suspected of those who seek to advocate a creationist position.⁴⁰

3. Darrow to the Defense

As entertaining, and at times very noncommittal, as Mr. Bryan's testimony was, the testimony for the defense also was problematic. None of their scientific experts gave oral testimony at trial,⁴¹ and some of the testimony provided was inaccurate scientific information.⁴²

³⁹ *Id.* at 298-99, 302-03.

⁴⁰ *Id.* (giving his testimony which indicated his willingness to understand the days of creation in non-solar day fashion and his acceptance of millions of years for the age of the earth).

⁴¹ See generally, CORNELIUS, *supra* note 29.

⁴² Dr. Fay-Cooper Cole, anthropologist at the University of Chicago, used the Piltdown man and Heidelberg man as examples of the proofs of evolution. THE WORLD'S MOST FAMOUS COURT TRIAL, *supra* note 10, at 236-37. For discussion of past mistakes by evolutionists and creationists, see TEACHING SCIENCE IN A CLIMATE OF CONTROVERSY: A VIEW FROM THE AMERICAN SCIENTIFIC AFFILIATION 18-21 (1986). Dr. Kirtley F. Mather, listed the Cro-Magnon and Neanderthal as examples of the missing links, *id.* at 245, and boldly commented that “[t]here are in truth no missing links in the record which connects man with the other members of the order of primates,” *id.* at 247, and argued for the

In reality, Darrow wanted to lose this case—admitting to the court that the charges against his client were all true⁴³—so that he might appeal to higher courts.⁴⁴ He knew that the ultimate decision would have considerable impact on the future of science and religion in the United States.

B. Renewed Interest in Teaching Evolution

1. Race to Space

It was more than thirty years before the matter of evolution became of paramount national importance again. Generally, the battle regarding the teaching of evolution in public schools, except for occasional skirmishes,⁴⁵ was calm in the 1930s and 1940s and the scientific establishment was almost lethargic in pushing the evolutionary view. But things changed in the 1950s due to two major occurrences. One was

discredited theory of ontogeny recapitulates phylogeny. *Id.* at 273. For a look at the various proposals for missing links for human evolution given by scientists at the Scopes Trial, see JOHN W. KLOTZ, GENES, GENESIS AND EVOLUTION 342-44, 351-57, 364-71 (2d ed. 1972), as well as for an evaluation of methodology in determining human fossils. *Id.* at 371-75. Also see discussions of these kinds of mischaracterizations of human fossils and other scientific data in contemporary science texts in JONATHAN WELLS, ICONS OF EVOLUTION: SCIENCE OR MYTH? WHY MUCH OF WHAT WE TEACH ABOUT EVOLUTION IS WRONG (2000).

⁴³ “In the entire long trial, these were the only witnesses whose testimony was part of the official record. Scopes was not called to the witness standard because, as Darrow explained to Judge Raulston, ‘Your honor, every single word that was said against this defendant, everything was true.’” CORNELIUS, *supra* note 29, at 68 (citation omitted).

⁴⁴ Cornelius remarks about Darrow’s strategy:

Then Darrow said, “I think to save time we will ask the court to bring in the jury and instruct the jury to find the defendant guilty.” This move prepared the day for an appeal to a high court, spared Darrow from having to be questioned by Bryan, and circumvented the summation arguments and the threat posed by the concluding address that Bryan had been working on. Since there were indications that some of the jury were getting feisty over being excluded from so much of the trial, and others were showing sympathy for Scopes, there was reason to suspect that the jury might find Scopes innocent. Stewart, Raulston, and Darrow consulted together. After Raulston gave a lengthy charge to the jury, Darrow was permitted to explain to the jury that they should not worry about their verdict, for it could enable the defense to take the matter to a high court. A discussion of who should set the fine resulted in Stewart stating correctly it should be the jury, Raulston overruling him, [the basis of the reversal, see *infra* note 202 and accompanying text] and Darrow promising: “We will not take an exception, either way you want it, because we want the case passed on by the higher court.” The jury retired, deliberated for nine minutes, returned, and found Scopes guilty. The judge fined him \$100 and then, after being prompted by Dr. Neal, asked Scopes if he had anything to say.

CORNELIUS, *supra* note 29, at 69 (citations omitted).

⁴⁵ The first major legal battle began with *Daniel v. Waters*, 515 F.2d 485, 487-88 (6th Cir. 1975).

the advancement of scientific interest in America caused by the Soviet Union's launch of Sputnik in 1957,⁴⁶ suggesting a Russian scientific superiority over the American scientific community. This motivated Americans to support reforming the science curriculum in public schools.⁴⁷

2. 100th Anniversary of Darwin's *Origin of the Species*

The second event that renewed interest in evolution was the 100th anniversary, in 1959, of the publication of Darwin's *Origin of Species*. This occasion awakened the scientific establishment,⁴⁸ engendering a greater push to present evolution in the classrooms of America. This was particularly so with the Biological Science Curriculum Study, which had as its basis the theory of evolution,⁴⁹ as well as the National Association of Biology Teachers,⁵⁰ which had been in the forefront of promoting evolution.

⁴⁶ Francis, *supra* note 24, at 758.

⁴⁷ EDWARD J. LARSON, TRIAL AND ERROR: THE AMERICAN CONTROVERSY OVER CREATION AND EVOLUTION 91 (1989), *quoted in* Francis, *supra* note 24, at 758.

⁴⁸ "One hundred years without Darwinism are enough!" H.J. Muller, One Hundred Years Without Darwinism Are Enough, SCH. SCI. MATH. 304 (1959), *quoted in* Mayr, *supra* note 4, at 987.

⁴⁹ Joyce Francis makes this point:

As part of this reform movement, the National Science Foundation began in 1959 to fund the Biological Science Curriculum Study (BSCS). The BSCS included noted biologists who believed in evolution; therefore, the high school textbooks written during this time included evolution as the foundation of biology instruction. Thus, the BSCS played a critical role in reintroducing evolution to biology textbooks in the early 1960s.

Francis, *supra* note 24, at 758-59.

⁵⁰ The National Association of Biology Teachers website describes the group as follows:

The National Association of Biology Teachers (NABT) is "the leader in life science education." To date, more than 9,000 educators have joined NABT to share experiences and expertise with colleagues from around the globe; keep up with trends and developments in the field; and grow professionally.

Mission Statement & Goals

The National Association of Biology Teachers empowers educators to provide the best possible biology and life science education for all students.

Goals

To provide expertise and opportunities for members to enhance their professional performance.

To advocate the teaching and learning of the biological sciences based on the nature and methods of science and the best practices of education.

To attract and represent the full spectrum of educators in biology and the life sciences.

To operate with benchmark levels of organizational effectiveness and efficiency.

C. Creationist Responses to Darwinism

Evolutionists were not the only group galvanized by the events of the late 1950s. Along with the renewed push from evolutionists came the formation of the creation-science movement. A few examples of creationist attempts to move the debate in the favor of creationism bear mentioning.

1. Formation of Scientific Creationist Organizations

In 1963 the Creation Research Society was established in order to give an alternate point of view to the predominant evolutionary approach espoused by the scientific establishment.⁵¹ Since 1963,

NABT, *Welcome to NABT* (1997), at <http://www.nabt.org/whatsnabt.html>.

⁵¹ The Creation Research Society webpage gives the following as its history and aims:

The Creation Research Society (CRS), a scientific society with worldwide membership, is recognized internationally for its firm commitment to scientific special creation. The CRS was founded in 1963 by a group of ten like-minded scientists who had corresponded with each other for a number of years. A major impetus for this effort was a problem that each one had experienced. They had been unable to publish in established journals scientific information favorable to the creation viewpoint. Believing that there were probably other scientists with similar experiences, these men saw the need for a journal in which such information could be published. Thus, the CRS was incorporated in the state of Michigan as a non-profit corporation for educational and scientific purposes. Shortly thereafter it was granted 501(c)(3) not-for-profit tax-exempt status by the IRS. The first issue of the *Creation Research Society Quarterly* was published in July, 1964.

A number of principles were established from the beginning. First, members of the Society, which include research scientists from various fields of scientific accomplishment, are committed to full belief in the Biblical record of creation and early history. Thus, they advocate the concept of special creation (as opposed to evolution), both of the universe and of the earth with its complexity of living forms. All members must subscribe to the following statement of belief:

1. The *Bible* is the written Word of God, and because it is inspired throughout, all its assertions are historically and scientifically true in the original autographs. To the student of nature this means that the account of origins in *Genesis* is a factual presentation of simple historical truths.

2. All basic types of living things, including man, were made by direct creative acts of God during the Creation Week described in *Genesis*. Whatever biological changes have occurred since Creation Week have been accomplished only changes within the original created kinds.

3. The great flood described in *Genesis*, commonly referred to as the Noahian Flood, was an historic event worldwide in its extent and effect.

4. We are an organization of Christian men and women of science who accept Jesus Christ as our Lord and Savior. The account of the special creation of Adam and Eve as one man and one woman and their subsequent fall into sin

creationists,⁶² though a small scientific community, have made considerable impact in the public at large with their books,⁶³ newsletters

is the basis for our belief in the necessity of a Savior for all mankind. Therefore, salvation can come only through accepting Jesus Christ as our Savior.

Creation Research Society, *History and Aims*, at <http://www.creationresearch.org/hisaims.html> (last visited Mar. 24, 2001). John P. Newport says that [as of 1989] that there are nearly fifty creationist organizations in the United States, with another dozen in Canada and others in countries such as Germany, India, and Brazil. NEWPORT, *supra* note 13, at 122.

⁶² Robert T. Pennock lists several: Institute for Creation Research (ICR) (headquartered on the outskirts of San Diego, California); Answers in Genesis (AIG) (Florence, Kentucky); The Bible-Science Association, Inc. (BSA) (Minneapolis, Minnesota); Creation Research Society (CRS) (Ashland, Ohio); Biblical Creation Society (BCS) (Great Britain); The Center for Scientific Creation (CSC) (Phoenix, Arizona). PENNOCK, *supra* note 20, at 11-12. The preceding groups tend to be young earth creationists. Some new organizations that reflect the Intelligent Design movement are Reasons to Believe (1996), connected with Hugh Ross (Pasadena, California), and the Discovery Institute with Phillip Johnson and William Dembski, among other scholars (Seattle, Washington).

⁶³ A variety of creationist books have been published since the advent of the renewed push against evolution in American society, most advocating scientific evidence that supports a recent age of the earth in conformity to a literal approach to the creation account in *Genesis* 1. Newport says that "Currently [1989] in print are more than three hundred and fifty books challenging evolutionary science and advocating creation-science." NEWPORT, *supra* note 13, at 122. Following is a representative listing of early creationists: WENDELL R. BIRD, *THE ORIGIN OF SPECIES REVISITED: THE THEORIES OF EVOLUTION AND OF ABRUPT APPEARANCE* (1989); DAVIDHEISER, *supra* note 5; NORMAN L. GEISLER & J. JERBY ANDERSON, *ORIGIN SCIENCE: A PROPOSAL FOR THE CREATION-EVOLUTION CONTROVERSY* (1987); KLOTZ, *supra* note 42; HENRY M. MORRIS ET AL., *A SYMPOSIUM ON CREATION* (1968); HENRY M. MORRIS & GARY E. PARKER, *WHAT IS CREATION SCIENCE* (1987); CHARLES B. THAXTON, WALTER L. BRADLEY & ROGER L. OLSEN, *THE MYSTERY OF LIFE'S ORIGIN: REASSESSING CURRENT THEORIES* (1984); *WHY NOT CREATION?* (Walter E. Lammerts ed., 1970). Some recent books by Intelligent Design scientists and scholars are: MICHAEL J. BEHE, *DARWIN'S BLACK BOX: THE BIOCHEMICAL CHALLENGE TO EVOLUTION* (1996); PERCIVAL DAVIS, DEAN H. KENYON & CHARLES B. THAXTON, *OF PANDAS AND PEOPLE* (1989); WILLIAM A. DEMBSKI, *INTELLIGENT DESIGN: THE BRIDGE BETWEEN SCIENCE & THEOLOGY* (1999); PHILLIP E. JOHNSON, *DARWIN RETRIED* (1991); PHILLIP E. JOHNSON, *REASON IN THE BALANCE* (1995); PHILLIP E. JOHNSON, *THE WEDGE OF TRUTH: SPLITTING THE FOUNDATIONS OF NATURALISM* (2000); HUGH ROSS, *Beyond the Cosmos* (1996); HUGH ROSS, *THE CREATOR AND THE COSMOS* (1993); HUGH ROSS, *THE FINGERPRINT OF GOD* (2d ed. 1991); A.E. WILDER-SMITH, *THE SCIENTIFIC ALTERNATIVE TO NEO-DARWINIAN EVOLUTIONARY THEORY: INFORMATION SOURCES & STRUCTURES* (1987); WELLS, *supra* note 42. Other works written by non-creationists, which nonetheless brings into question various postulates of the general theory of evolution: PAUL DAVIES, *GOD AND THE NEW PHYSICS* (1983); MICHAEL DENTON, *EVOLUTION: A THEORY IN CRISIS: NEW DEVELOPMENTS IN SCIENCE ARE CHALLENGING ORTHODOX DARWINISM* (1985); MICHAEL J. DENTON, *NATURE'S DESTINY: HOW THE LAWS OF BIOLOGY REVEAL PURPOSE IN THE UNIVERSE* (1998); RICHARD MILTON, *SHATTERING THE MYTHS OF DARWINISM* (1992); MICHAEL PITMAN, *ADAM AND EVOLUTION* (1984); LEE SPETNER, *NOT BY CHANCE!* (1998); PETER D. WARD AND DONALD BROWNLEE, *RARE EARTH: WHY COMPLEX LIFE IS UNCOMMON IN THE UNIVERSE* (2000).

and magazines,⁶⁴ and debates with evolutionists.⁶⁵ Moreover, there have been several controversies over the creation-evolution issue regarding public school textbooks and classrooms:

creationist bills demanding equal time for a 'creation model' of origins have been submitted to legislatures in more than thirty states. State boards of education, including those in Texas and California, have been pressured to accept textbooks that include creationist materials. Local boards of education have also been targeted by creationists for grassroots action as a means of achieving their goals regardless of legislatures and state boards.

Publishers of science textbooks have also come under pressure. In order to have their books accepted as texts, a number of publishers have accommodated creationist demands in various ways. They have reduced the space given to discussion of evolution and referred to evolution as 'only a theory.' They have included creationist materials and placed references to evolution in a final chapter which the teacher can conveniently omit. In fact, some new biology texts have managed to avoid the word *evolution* altogether.⁶⁶

Creationists' influence in the formidable Christian community of the United States has been considerable, while they have caused no more than a ripple in the waters of academia. The majority of the American public has been in sympathy with the creationist perspective that desires a two-model approach to the issues of origins,⁶⁷ causing no small concern on the part of many of the nation's scientists.⁶⁸

⁶⁴ Some of the names of creationists magazines are *Creation Ex nihilo*, *Creation Technical Journal*, *Acts and Facts*, *Answers in Genesis*, *Facts and Faith*, *Creation Research Society Quarterly*, and *Bible-Science Answers*. These were discovered on a variety of internet sites dealing with creationism.

⁶⁵ The primary debater for creationists (generally young earth) is Duane Gish. The Institute for Creation Research website mentions more than 100 debates since 1970 by its personnel, all of which it says had favorable results for creationism. Henry M. Morris, *Two Decades of Creation: Past and Future* (1981), available at <http://www.icr.org/pubs/imp/imp-091.htm>. Some debates have also transpired between evolutionists and Phillip Johnson, primary advisor to the new Intelligent Design movement. See Johnson's website, where he provides one between himself and theistic evolutionist Howard Van Till, and between himself and evolutionist Kenneth R. Miller. *Origins, Debates*, at <http://www.origins.org/menus/debates.html> (last visited Jan. 5, 2001).

⁶⁶ NEWPORT, *supra* note 13, at 122.

⁶⁷ Phillip Johnson speaks of a 1982 Gallup poll:

According to a 1982 Gallup poll aimed at measuring nationwide opinion, 44 percent of respondents agreed with the statement [sic] that "God created man pretty much in his present form at one time within the last 10,000 years." That would seem to mark those respondents as creationists in a relatively narrow sense. Another 38 percent accepted evolution as a process guided by God. Only 9 percent identified themselves as believers in a naturalistic evolutionary process not guided by God.

PHILLIP E. JOHNSON, *EVOLUTION AS DOGMA: THE ESTABLISHMENT OF NATURALISM* 10 (1990). Richard M. Cornelius speaks of a more recent Gallup poll: "Gallup and Associated Press/NBC polls reported that about 50% of those surveyed believed in Biblical creation,

2. The Tennessee Law of 1973

On April 30, 1973 the Tennessee legislature passed a bill which avoided the prohibition policy that it was reviewed in *Scopes*⁶⁹ and simply made illegal any textbook which presented the evolution of man and the world as scientific fact and did not state that evolution is a theory. Moreover, if evolution was presented in any textbook, alternate theories, including the Genesis account in the Bible, must be presented. A third requirement was that if the Bible is used a reference work in these classes, it would not be required to include the disclaimer as required in the science textbooks.⁷⁰

and over 85% supported creationism being taught in the public schools." Richard M Cornelius, *The Trial That Made Monkeys Out of the World*, USA TODAY MAG., Nov. 1990, at 88. Surprisingly, the majority of lawyers prior to the decision in *Edwards v. Aguillard*, 482 U.S. 578 (1987), saw no constitutional impediment to teaching creationism in public schools:

A heavy majority of lawyers, however, see no First Amendment obstacle to the teaching of creationism in public schools. Almost three-quarters (72 percent) of lawyers in the Southwest believe that there is no conflict. And 57 percent of lawyers nationwide think that both evolution and creationism should be taught in public schools.

Paul Reidinger, *Creationism and the First Amendment*, 73 A.B.A. J. 35 (1987).

⁶⁹ Newport comments that

[t]he new activism of creationists in the United States means that they are no longer dismissed lightly by their opponents. In fact, the creationist pressures on public education and policy have become so strong that a group of evolutionary scientists have founded a new journal (*Creation/Evolution*), a "Committee of Correspondence," and a *Creation/Evolution* Newsletter aimed at defending evolutionary science and dismantling creationist arguments.

NEWPORT, *supra* note 13, at 123. For some websites given to resisting or refuting creationism, including Intelligent Design, see National Center for Science Education, *Defending the Teaching of Evolution in the Public Schools*, at <http://www.natcensci.org> (last visited Mar. 24, 2001); and Lenny Flank, *Creation "Science" Debunked* (Mar. 9, 2000), at <http://www.geocities.com/CapeCanaveral/Hangar/2437/index.htm>.

⁷⁰ See *infra* note 60.

⁷⁰ The bill reads as follows:

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE
OF TENNESSEE:

SECTION 1. Tennessee Code Annotated, Section 49-2008, is amended by adding the following paragraph:

Any biology textbook used for teaching in the public schools, which expresses an opinion of, or relates to a theory about origins or creation of man and his world shall be prohibited from being used as a textbook in such system unless it specifically states that it is a theory as to the origin and creation of man and his world and is not represented to be scientific fact. Any text book so used in the public education system which expresses an opinion or relates to a theory or theories shall give in the same text book and under the same subject commensurate attention to, and an equal amount of emphasis on, the origins and creation of man and his world as the same is recorded in other theories, including, but not limited to, the

Almost as soon as the bill passed the legislature law professor Frederic S. LeClercq began working with the assistance of the National Association of Biology Teachers⁶¹ against what might be rightly considered the first balanced treatment law. After a series of legal maneuverings,⁶² the case came before the Sixth Circuit, which declared the law "patently unconstitutional."⁶³ For the first time in the creation-evolution controversy, a court used the three-prong test of *Lemon v. Kurtzman*⁶⁴ to determine whether the statute violated the Establishment Clause of the First Amendment.⁶⁵ In order to pass constitutional muster, "[f]irst, the statute must have a secular legislative purpose; second, its principal or primary effect must be one that neither advances nor

Genesis account in the Bible. The provisions of this Act shall not apply to use of any textbook now legally in use, until the beginning of the school year of 1975-1976; Provided, however, that the textbook requirements stated above shall in no way diminish the duty of the state textbook commission to prepare a list of approved standard editions of textbooks for use in the public schools of the state as provided in this section. Each local school board may use textbooks or supplementary material as approved by the State Board of Education to carry out the provisions of this section. The teaching of all occult or satanical beliefs of human origin is expressly excluded from this act.

SECTION 2. Provided however that the Holy Bible shall not be defined as a textbook, but is hereby declared to be a reference work, and shall not be required to carry the disclaimer above provided for textbooks.

This act shall take effect upon becoming a law, the public welfare requiring it.

Tennessee "Genesis" Law, TENN. CODE ANN. § 49-2008 (1973).

⁶¹ See Francis, *supra* note 24, at 767 (discussing the background to the legal challenge and her sources).

⁶² For the legal disposition of the case from trial court to the Sixth Circuit, see *Daniel v. Waters*, 515 F.2d 485, 487-88 (6th Cir. 1975).

⁶³ The court was clear in its judgment that the legislation, under appeal, was contrary to the constitution:

We have examined with interest the order entered by the Supreme Court, along with the jurisdictional statement filed by Tennessee in the Supreme Court and the response thereto filed by the plaintiffs. We believe that the order can properly be interpreted as indication that no three-judge District Court was necessary in this action under 28 U.S.C. § 2281 (1970) because, as we have determined above, this state statute is patently unconstitutional.

Id. at 492 (citations omitted).

⁶⁴ 403 U.S. 602 (1971).

⁶⁵ "Under this tri-part test, the Establishment Clause allegedly takes a 'neutral' stand towards religion, promoting government activity in extending general benefits to nonreligious and religious interests alike." H. Wayne House, *A Tale of Two Kingdoms: Can There Be Peaceful Coexistence of Religion with the Secular State?*, 13 B.Y.U. J. PUB. LAW 203, 270 (1999); see also Wendell R. Bird, *Freedom from Establishment and Unneutrality in Public School Instruction and Religious School Regulation*, 1979 HARV. J.L. & PUB. POL'Y 125, 143-54.

inhibits religion; finally, the statute must not foster 'an excessive government entanglement with religion.'⁶⁶

The court noted, that although the law does not forbid the teaching of evolution, it nonetheless preferred the Biblical version of creation over any scientific theory.⁶⁷ The court then concluded:

We believe that in several respects the statute under consideration is unconstitutional on its face, that no state court interpretation of it can save it, and that in this case, the District Court clearly erred in abstaining from rendering a determination of the unconstitutionality of the statute on its face.⁶⁸

The court then provided its rationale. The state law required, if evolution be taught, that the Biblical account be also included and that all theories but the Biblical account must have a disclaimer. The result of the legislation would be a clear preference for the Biblical version of creation over views based on scientific reasoning and enforcement of the statute would establish religion, contrary to the first prong of the *Lemon* test.⁶⁹ Moreover, it would involve the State Textbook Commission in such a manner as to violate the third prong against excessive entanglement with religion.⁷⁰

3. Introduction of the Balanced Treatment Acts

a. Model Act

In the early 1980s a number of states passed what has become known as the "Balanced Treatment Act."⁷¹ This came about due to a concerted effort on the part of persons within the creationist movement who desired to pass legislation that would insure that creationism would be taught alongside evolution in the public schools of those states. The uniformity of these various pieces of legislation is due to the work of Wendell R. Bird,⁷² attorney for the Institute for Creation Research

⁶⁶ *Lemon*, 403 U.S. at 612-13 (citing *Board of Education v. Allen*, 392 U.S. 236, 243 (1968)).

⁶⁷ *Daniel*, 515 F.2d at 489.

⁶⁸ *Id.*

⁶⁹ *Id.* at 490-91.

⁷⁰ *Id.* at 491.

⁷¹ An early rationale for the balanced treatment of what has been called evolution-science and creation-science was published early in the *Impact Series* from the Institute for Creation Research. Many of these concepts presented in a Yale Law Review article by Wendell Bird, *infra* note 73, were later incorporated into various bills introduced in a host of state legislatures in the early 1980s. Wendell R. Bird, *Resolution for Balanced Presentation of Evolution and Scientific Creationism*, 71 IMPACT SERIES, May 1979, at 1-4, available at <http://www.icr.org/pubs/imp/imp-071.htm>.

⁷² The commonality of the legislation was recognized by scientist Wayne Moyer. "The bills introduced in four states were virtually identical, evidently based on a model

(hereinafter ICR), and based on the arguments he made in an article written in the Yale Law Journal.⁷³

The different bills⁷⁴ presented throughout state legislatures took different forms, but include considerable verbal agreement and structure, indicating a common source. For example, the definition of scientific creationism found in these legislative bills incorporates most, if not all, of the elements contained in the Arkansas bill at issue in *McLean v. Arkansas*:⁷⁵

- (1) Sudden creation of the universe, energy, and life from nothing; (2) The insufficiency of mutation and natural selection in bringing about the development of all living kinds from a single organism; (3) Changes only within fixed limits of originally created kinds of plants and animals; (4) Separate ancestry of humans and apes; (5) Explanation of the earth's geology by catastrophism, including the occurrence of a worldwide flood; and (6) A relatively recent inception of the earth and living kinds.⁷⁶

The following chart demonstrates the similarities and differences among some of these legislative enactments.

reportedly written by Wendell Bird, a Georgia law clerk, and distributed by the ICR." Wayne Moyer, *The Challenge of Creationism*, 12 AM. LABORATORY 14 (1980). Wendell Bird is a member of the Georgia bar, and formerly was a law clerk on the Fourth Circuit Court of Appeals, and then the Fifth Circuit. Bird, *supra* note 65, at 125. He graduated from Yale Law School and a former editor of *Yale Law Journal*. *Id.* He received the Egger Prize for outstanding legal scholarship for his note published in that journal. *Id.* He also was attorney for the Institute for Creation Research and argued *Edwards v. Aguillard*, 482 U.S. 578 (1987), for the state of Louisiana. Bird, *supra* note 65, at 125.

⁷³ Wendell R. Bird, Note, *Freedom of Religion and Science Instruction in Public Schools*, 87 YALE L.J. 515 (1978) (arguing that evolution and creation were on the same footing, neither being less religious nor more scientific than the other, and both, with treated in a balanced manner, being equally constitutionally viable for public school curriculum). A subsequent article by Bird sought to deal with the establishment clause concerns regarding the teaching of evolution and creation in the schools. Bird, *supra* note 65, at 125.

⁷⁴ The author has in his possession a few of the actual bills from the following state legislatures: H.R. 690, 1979 Gen. Assem., Reg. Sess. (Ga. 1979); H.R. 480, 81st Gen. Assem., 1st Reg. Sess. (Mo. 1980); H.R. 1158, 38th Leg. Sess. (Okla. 1981-82); H.R. 1224, 56th Leg. Sess. (S.D. 1981); H.R. [bill number unknown], 1981 Reg. Sess. (Tex. 1981); H.R. 234, 47th Leg., 1981 Reg. Sess. (Wash. 1981).

⁷⁵ *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255 (1982). See *infra* section III. C. for discussion of this case.

⁷⁶ CREATIONISM, SCIENCE, AND THE LAW: THE ARKANSAS CASE 16 (Marcel Chotkowski La Follette ed., 1983).

State	<i>Creatio ex nihilo</i>	No single organism evolution	Changes within fixed limits	Human & Ape Separate ancestry	Catastrophism or worldwide flood	Recent earth
Ga. ⁷⁷	Yes	Ambiguous	Only inferred	Ambiguous	No	No
Mo. ⁷⁸	Yes	Yes	Yes	Yes	Yes	Yes
Ok. ⁷⁹	Yes	Yes	Yes	Yes	Yes	Yes
S. D. ⁸⁰	Yes	Yes	Yes	Yes	Yes	Yes
Tex. ⁸¹	Yes	Yes	Yes	Yes	Yes	Yes
Wash	Yes	Yes	Yes	Yes	Yes	Yes

⁷⁷ "Scientific creationism" shall mean the belief, based upon scientific principles, that there was a time when all matter, energy, and life, and their processes and relationships were created ex nihilo and fixed by creative and intelligent design." Ga. H.R. 690, § 1(b).

⁷⁸ The bill reads:

Section 1. As used in this act, the following terms mean: (1) "Creation-science", the scientific evidences for life by creation and related inferences from those scientific evidences that indicate: (a) Sudden creation of the universe, energy, and life from nothing; (b) Insufficiency of mutation and natural selection in bringing about development of all living kinds from a single organism; (c) Changes only within fixed limits of originally created kinds of plants and animals; (d) Separate ancestry for man and apes; (e) Explanation of the earth's geology by catastrophism, including the occurrence of a worldwide flood; and (f) A relatively recent inception of the earth and living kinds.

Mo. H.R. 480, § 1.

⁷⁹ The bill reads:

1. "Theory of creation-science" means the scientific evidences for creation and inferences from those scientific evidences; 2. "Creation-science" is the concept which includes belief in: a. sudden creation of the universe, energy and life, b. the insufficiency of mutation and natural selection in bringing about development of all living kinds from a single organism, c. changes only within fixed limits of originally created kinds of plants and animals, d. separate ancestry for man and apes, e. explanation of the geology of the earth by catastrophism including the occurrence of a world-wide flood, and f. the possibility of a relatively recent inception of the earth and living kinds.

Okl. H.R. 1158, § 3.1-3.2.

⁸⁰ The bill reads:

The "theory of scientific creationism" means the scientific evidences for creation and inferences from those scientific evidences. The theory of scientific creationism includes belief in: (1) Creation of the universe and life from nothing; (2) The insufficiency of mutation and natural selection in bringing progressive evolution; (3) Fixity of originally created kinds of plants and animals; (4) Distinct ancestry for man and apes; (5) Explanation of the earth's geology by catastrophism; and (6) A relatively recent inception of the earth and living things.

S.D. H.R. 1224, § 2.

⁸¹ The bill reads:

(d) for purposes of this Act, creation-science includes scientific evidence, and rational inferences from that evidence, showing: (1) sudden creation of the universe, energy, and life; (2) insufficiency of mutation and natural selection in bringing about development of all living things from a single organism; (3) changes only within fixed limits of created kinds of plants and animals; (4) separate ancestry for man and apes; (5) explanation of the earth's geology by catastrophism; and relatively recent inception of earth and living things.

Tex. H.R. [bill number unknown], § 3(d).

b. Success of Balanced Treatment Movement

Though many states enacted balanced treatment legislation, none have survived the defeats in *McLean*⁸³ and *Edwards v. Aguillard*.⁸⁴ As a result, the strategy of the creationist movement has tended to move toward local school boards and an argument different from that attempted by Bird and those who supported him.⁸⁵

II. DEVELOPMENT OF THE CURRENT EVOLUTION AND CREATION DEBATE

A. *Conflicting Views of Evolution*

1. Reactions by Evolutionists to Traditional Darwinism

Often, what is called Darwinism and the general theory of evolution are mistakenly viewed as the same.⁸⁶ Since the time of Darwin, his

⁸² The bill reads:

"Creation-science" means the scientific evidences for creation and inferences from those scientific evidences. Creation-science includes the scientific evidences and related inferences that indicate: (a) Sudden creation of the universe, energy, and life from nothing; (b) the insufficiency of mutation and natural selection in bringing about development of all living kinds from a single organism; (c) changes only within fixed limits of originally created kinds of plants and animals; (d) separate ancestry for man and apes; (e) explanation of the earth's geology by catastrophism, including the occurrence of a world-wide flood; and (f) a relatively recent inception of the earth and living kinds.

Wash. H.R. 234, § 4(1).

⁸³ See *infra* note 254.

⁸⁴ 482 U.S. 578 (1987); see *infra* note 283.

⁸⁵ Bird and those advocating creation-science have come to a quandary of being unable to please either evolutionists or many creationists. Certainly the general scientific community was not happy with the pieces of legislation giving creation an equal footing with evolution, since the creationist arguments have not been viewed as really being science, but religion. Interestingly, though, even among some Christians the bills did not go far enough since they tended to sanitize Christian theology. Speaking of the various people who backed the legislation from the creationist movement and the subsequent challenge of Louisiana law in *Edwards*, Harold Robbins says such legislation should not be supported:

The appearance of these names and the association of these men with this litigation are quite surprising when one reads the legal briefs and the transcript of the oral arguments before the Supreme Court. For the briefs, contrary to what you and the American people have been led to believe, do not represent Christianity, and are, in fact, hostile to Christianity.

In a few moments I shall quote the briefs filed in the Louisiana case. After I have done so, I believe that you will agree that the views represented in the briefs are not Christian and do not deserve the support of those who claim to be Christian.

Transcript of Speech by Harold Robbins to the Baltimore Creation Fellowship 1-2 (1987) (on file with author).

⁸⁶ This was even stated at the Scopes trial by Dr. Winterton C. Curtis, zoologist from the University of Missouri:

theory has undergone many critiques from evolutionists,⁸⁷ though its naturalistic basis has remained.⁸⁸ Though most scientists adhere to

As a result of this situation there has been much discussion among scientists regarding the adequacy of what is often referred to as the Darwinian theory, meaning natural selection. In condemning selection as an inadequate explanation of the problem, biologists have often seemed to condemn evolution itself. It is not strange that the layman, for whom Darwinism and evolution are synonymous terms, believes that evolution has been rejected when he hears that belief in Darwinism is on the wane. He does not understand that what is thus meant by Darwinism is not the historic fact of evolution, but the proposed cause of evolution—natural selection.

THE WORLD'S MOST FAMOUS COURT TRIAL, *supra* note 10, at 261. For discussion on different uses of the term "evolution," see John L. Wiester, *The Real Meaning of Evolution*, 45 COMMUNICATIONS 1-4 (1993).

⁸⁷ Perhaps the most drastic deviation from orthodox Darwinism is that of professor Stephen Jay Gould of Harvard, with his advocacy for "punctuated equilibrium," sometimes called the "hopeful monster theory," in which there is suggestion of a rapid and major structural changes without intermediate stages. See Stephen Jay Gould, *The Return of Hopeful Monsters*, 86 NAT. HIST. 22-30 (1977), quoted in HENRY M. MORRIS, THAT THEIR WORDS MAY BE USED AGAINST THEM 141 (1997). As well, Robert E. Ricklefs says, "Within continuously sampled lineages, one rarely finds the gradual morphological trends predicted by Darwinian evolution: rather, change occurs with the sudden appearance of new, well differentiated species." Robert E. Ricklefs, *Paleontologists Confronting Macroevolution*, 199 SCI. 58, 59 (1978). Darwinian critic Norman Macbeth speaks of classic Darwinism's decay:

I assert only that the mechanism of evolution suggested by Charles Darwin has been found inadequate by the professionals, and that they have moved on to other views and problems. In brief, classical Darwinism is no longer considered valid by qualified biologists.

....

In examining the single part of classical Darwinism, I concluded that they were all sadly decayed.

NORMAN MACBETH, DARWIN RETRIED: AN APPEAL TO REASON 6, 134 (1971).

⁸⁸ Douglas Futuyma leaves no doubt that, in contrast to standard creationism, the naturalistic perspective is inherent in evolution:

Perhaps most importantly, if the world and its creatures developed purely by material, physical forces, it could not have been designed and has no purpose or goal. The fundamentalist, in contrast, believes that everything in the world, every species and every characteristic of every species, was designed by an intelligent, purposeful artificer, and that is was made for a purpose. Nowhere does this contrast apply with more force than to the human species. Some shrink from the conclusion that the human species was not designed, has no purpose, and is the product of mere material mechanism—but this seems to be the message of evolution.

DOUGLAS J. FUTUYMA, SCIENCE ON TRIAL: THE CASE FOR EVOLUTION 12-13 (1983). For a critique and interaction with naturalistic science, see MERE CREATION: SCIENCE, FAITH & INTELLIGENT DESIGN, PART 1: UNSEATING NATURALISM 33-70 (William A. Dembski ed., 1998) [hereinafter MERE CREATION].

many tenets of classic Darwinism, such as gradualism,⁸⁹ widespread disagreement among scientists exists:

[S]ome fundamental truths about evolution have so far eluded us all, and that *uncritical acceptance of Darwinism may be counterproductive* as well as expedient. Far from ignoring or ridiculing the groundswell of opposition to Darwinism that is growing, for example, in the United States, we should *welcome it as an opportunity to re-examine our sacred cow more closely . . .*⁹⁰

When the first trial regarding evolution and creation was argued, Darwinism was publicly presented as the only legitimate scientific position,⁹¹ but classic Darwinism began to recede, due to its inadequacies of truly addressing "origins"⁹² and the failure of Darwin's prediction that current difficulties in the theory would be solved by future generations.⁹³ In fact, much of the scientific evidence—at times composed of fraudulent data⁹⁴—presented by various scientists at the *Scopes* trial no longer would be considered accurate⁹⁵ by the current scientific community.⁹⁶

⁸⁹ The acceptance of gradualism is not universally accepted among evolutionists. Advocates of punctuated equilibrium discern serious problems with such a perspective: "At the higher level of evolutionary transition between basic morphological designs, gradualism has always been in trouble, though it remains the 'official' position of most Western evolutionists." Stephen Jay Gould & Niles Eldredge, *Punctuated Equilibria: The Tempo and Mode of Evolution Reconsidered*, 3 PALEOBIOLOGY 115, 147 (1977).

⁹⁰ Bernard Stonehouse, *Introduction to MICHAEL PITMAN, ADAM AND EVOLUTION* 9, 12 (1984) (emphasis added), quoted in 1 BIRD, *supra* note 53, at 144-45; see also W. Scot Morrow, *Cui Bono: Who Benefits?*, 13 REGENT U. L. REV. 289 (2001).

⁹¹ Dr. Winterton C. Curtis, zoologist of the University of Missouri speaks in these terms: "Since Darwin's time evolution as the historic fact has received confirmation on every hand. It is now regarded by competent scientists as the only rational explanation of an overwhelming mass of facts." THE WORLD'S MOST FAMOUS COURT TRIAL, *supra* note 10, at 260.

⁹² "Darwin, it has by now become commonplace to acknowledge, never really addressed the 'origin of species' in his book of that title." Niles Eldredge, *Progress in Evolution?*, 110 NEW SCIENTIST 54, 55 (1986).

⁹³ Niles Eldredge and Ian Tattersal state Darwin's false hope:

He prophesied that future generations of paleontologists would fill in these gaps by diligent search and then his major thesis—that evolutionary change is gradual and progressive—would be vindicated. One hundred and twenty years of paleontological research later, it has become abundantly clear that the fossil record will not confirm this part of Darwin's predictions. Nor is the problem a miserably poor record. The fossil record simply shows that this prediction was wrong.

NILES ELDREDGE & IAN TATTERSAL, THE MYTHS OF HUMAN EVOLUTION 45-46 (1982).

⁹⁴ Compare the transcripts of the scientific testimony in THE WORLD'S MOST FAMOUS COURT TRIAL, *supra* note 10, at 263-80, with the discussions in TEACHING SCIENCE IN A CLIMATE OF CONTROVERSY, *supra* note 42, at 18-20, and WELLS, *supra* note 42, at 111-35, 214-23, 229-48.

⁹⁵ See the discussion of Paleontologist Kurt Wise, who evaluates scientific evidence found in the Scopes trial transcripts with how contemporary views of evolution and creation might differ. Kurt P. Wise, *The Science Played Again*, in IMPACT: THE SCOPES

This recession into the shadows would wait for a resurrection in the form of neo-Darwinist, anti-Darwinist, and Anti-Evolutionist schools within the scientific community who are not creationist.⁹⁷ Thus, those who advocate creation-science⁹⁸ or intelligent design⁹⁹ are not alone in their concerns over the general theory of evolution. However, one should understand, that Darwinism, in some form, is still held fervently by most scientists, even among those who also hold to theism, adding to the confusion.

2. Theistic Evolution

A considerable number of scientists¹⁰⁰ who espouse the Christian faith, but believe that acceptance of evolution is a *sine qua non* of

TRIAL, WILLIAM JENNINGS BRYAN, AND ISSUES THAT KEEP REVOLVING 91, 91-102 (Richard M. Cornelius & Tom Davis eds., 2000). Wise concludes his article:

If the Scopes Trial were replayed today and scientific testimony were accepted as evidence, it would certainly be substantially different than it was in 1925. First of all, creation experts could be found. Second, although the evidence for evolution would be stronger than it was in 1925, the evidence which appears to be against it would also be greater. Third, it would be possible to make an argument for the creation of the universe, the earth, and its contained life and human. Finally, it would be possible to make an argument for the recent origin of those things created. It is not possible to rout the evolutionary position—if for no other reason than the sheer number of evolutionary scientists there are in the world—but it would be possible to present a reasonable creationary position.

Id. at 100.

⁹⁶ This may be illustrated by the words of Nicky Perlas:

The neo-Darwinian theory of evolution is not only suffering from an identity crisis but may also be radically transformed to account for the growing number of scientific anomalies that continue to plague it. These were the underlying themes that could be inferred from presentations made by prominent scientists in the recently concluded symposium entitle, "What Happened to Darwinism Between the Two Darwin Centennials, 1959-1982?" The symposium was convened under the auspices of the 148th Annual Meeting of the prestigious [AAAS] held from January 3, 1982 to January 8, 1982 at Washington, D.C.

Nicky Perlas, *Neo-Darwinism Challenged at AAAS Annual Meeting*, 2 TOWARDS 29 (1982), quoted in MORRIS, *supra* note 87, at 146 (1997).

⁹⁷ See 1 BIRD, *supra* note 53, at 144-55 for a careful presentation of each of these views.

⁹⁸ See *infra* section II.B. for discussion of creation-science.

⁹⁹ See *infra* section II.E. for discussion of intelligent design.

¹⁰⁰ Probably the largest organization of Christian scientists is the American Scientific Affiliation (ASA), which is unacceptable to many creationists. A fervent anti-evolutionist, Bolton Davidheiser, gives an evaluation of the ASA, See DAVIDHEISER, *supra* note 5, at 114-21, which in his day, according to a poll among its membership, reflected that about one-third of its members were theistic evolutionists. *Id.* at 120.

science, advocate what is known as theistic evolution.¹⁰¹ Under this perspective, the Creator created time, space, and matter, and at times intervened in the natural processes to assist the evolving of life on earth. This was especially the case in reference to humanity, but the Creator left the overwhelming majority of life changes up to the natural workings of evolution.¹⁰²

Theologian Louis Berkhof describes the view:

This [view] postulates the existence of God back of the universe, who works in it, as a rule according to the unalterable laws of nature and by physical forces only, but in some cases by direct miraculous intervention, as, for instance, in the case of the absolute beginning, the beginning of life, and the beginning of rational and moral existence.¹⁰³

Belief in evolution as the process which God used in creating the world is found in early editions of Darwin's *Origin of Species*:

authors of the highest eminence seem to be fully satisfied with the view that each species has been independently created. To my mind it [the existence of nature] accords better with what we know of the laws impressed on matter by the Creator. . . . There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone circling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been and are being evolved.¹⁰⁴

Probably the best known theologian who sought to blend his Christian faith with the general theory of evolution was French priest Pierre Teilhard de Chardin. His earlier training was in theology, becoming a member of the Society of Jesus (Jesuits) in 1899,¹⁰⁵ but subsequently pursued his burning interest in science, particularly

¹⁰¹ Theistic evolution is distinguished from evolutionary creationism by some: For example Eugenie C. Scott, director of the National Center for Science Education, distinguishes the two, in her presentation called the Creation/Evolution Continuum:

Evolutionary Creationism (EC)—Despite its name, evolutionary creationism is actually a type of evolution. Here, God the Creator uses evolution to bring about the universe according to his plan. From a scientific point of view, evolutionary creationism is hardly distinguishable from Theistic evolution, which follows it on the continuum. The differences between EC and Theistic evolution lie not in science, but in theology, with EC being held by more conservative (evangelical) Christians (D. Lamoreaux, p.c.).

Eugenie C. Scott, *The Creation-Evolution Continuum*, at http://www.ncseweb.org/resources/articles/1593_the_creationevolution_continu_12_7_2000.asp (last visited Jan. 5, 2001).

¹⁰² HOWARD J. VAN TILL, THE FOURTH DAY 97-249 (1986).

¹⁰³ LOUIS BEKHOF, SYSTEMATIC THEOLOGY 139 (1941).

¹⁰⁴ CHARLES DARWIN, ORIGIN OF SPECIES 483-85 (Collier 1909) (1859), quoted in JERRY BERGMAN, TEACHING ABOUT THE CREATION/EVOLUTION CONTROVERSY 30 (1979).

¹⁰⁵ ALISTER E. MCGRATH, SCIENCE & RELIGION 221 (1999).

geology and paleontology,¹⁰⁶ graduating with a doctorate in geology from the Sorbonne.¹⁰⁷ Famous evolutionist Theodosius Dobzhansky once said in an address to the National Association of Biology Teachers, "I believe with Teilhard de Chardin that evolution is God's method of creation."¹⁰⁸ As satisfying as this view may be to scientists of faith, it is a paradigm not well received in the scientific community at large¹⁰⁹ nor to theologians of the Christian faith.¹¹⁰

The most recent Christian of note who has been portrayed as blending evolution and the Christian faith is Pope John Paul II. He has recently been brought in on the side of theistic evolution in a recent address to the Pontifical Academy of Sciences. Newspapers reported that the Pope has come down on the side of scientists against those advocating a literal reading of the Genesis account:

THE POPE AND DARWIN. Did God create mankind in his image, as the Bible says, or did humans evolve from animals, as Darwin theorized nearly 150 years ago? According to Pope John Paul II, evolution may be the better explanation. Weighing in on a debate that has divided Christians for decades, the pope declared that evolution is "more than just a theory" and is fully compatible with the Christian

¹⁰⁶ *Id.*

¹⁰⁷ Vernon Grounds, *Pacesetters for the Radical Theologians of the Sixties and Seventies*, in TENSIONS IN CONTEMPORARY THEOLOGY 56 (Stanley N. Gundry & Alan F. Johnson eds., 1976). Bernard Towers speaks glowingly of de Chardin:

A Christian priest of rare spiritual insight, he was also a scientist of great eminence. His geological and palaeontological studies, published in the journals of learned societies in Europe, Asia and America, constitute the kind of lasting contribution to science that marks a distinguished scholar. The honours which he received from, and the esteem in which he was held by, his scientific colleagues are matters of record. But he was not only a highly skilled and dedicated research worker, whose labours served to push forward the boundaries of knowledge "inch by inch." This is the normal way in which science advances, by the steady, competent work of those who have mastered the necessary skills. But as well as being a master in his scientific field, he was also one of those relatively rare people, the pioneers of science. He was, in fact, a pioneer of great intellectual daring and originality, whose ideas are likely to modify profoundly, and to advance enormously, our understanding of the nature of science and of its relation to other aspects of living.

Bernard Towers, *Introduction* to BERNARD DELFGAUW, EVOLUTION: THE THEORY OF TEILHARD DE CHARDIN 9 (1961).

¹⁰⁸ BERGMAN, *supra* note 104, at 30. Vernon Grounds's analysis of Teilhard de Chardin reveals that he held to a pantheistic deity. See Grounds, *supra* note 107, at 61-66.

¹⁰⁹ Scientist Richard Dawkins excludes God as an explanation for the evolutionary process. RICHARD DAWKINS, THE EXTENDED PHENOTYPE: THE LONG REACH OF THE GENE 51-52 (1999).

¹¹⁰ See WAYNE GRUDEM, SYSTEMATIC THEOLOGY: AN INTRODUCTION TO BIBLICAL DOCTRINE 279-87 (1994); see also generally CARL F.H. HENRY, GOD, REVELATION AND AUTHORITY (1976-83).

faith. But in a letter to the Pontifical Academy of Sciences, he also reaffirmed church teachings that while the human body may have evolved gradually, the soul "is immediately created by God" in each person.¹¹¹

The actual examination of the Pontiff's comments seem to provide less optimism for the Darwinist perspective than as reported by the media. The pertinent text of the address reads:

Taking into account the state of scientific research at the time as well as of the requirements of theology, the encyclical *Humani Generis* considered the doctrine of "evolutionism" a serious hypothesis, worthy of investigation and in-depth study equal to that of the opposing hypothesis. Pius XII added two methodological conditions: that this opinion should not be adopted as though it were a certain, proven doctrine and as though one could totally prescind from revelation with regard to the questions it raises. He also spelled out the condition on which this opinion would be compatible with the Christian faith, a point to which I will return. Today, almost half a century after the publication of the encyclical, new knowledge has led to the recognition of the theory of evolution as more than a hypothesis. [Aujourd'hui, près dun demi-siècle après la parution de l'encyclique, de nouvelles connaissances conduisent à reconnaître dans la théorie de l'évolution plus qu'une hypothèse.] It is indeed remarkable that this theory has been progressively accepted by researchers, following a series of discoveries in various fields of knowledge. The convergence, neither sought nor fabricated, of the results of work that was conducted independently is in itself a significant argument in favor of this theory.

What is the significance of such a theory? To address this question is to enter the field of epistemology. A theory is a meta-scientific elaboration, distinct from the results of observation but consistent with them. By means of it a series of independent data and facts can be related and interpreted in a unified explanation. A theory's validity depends on whether or not it can be verified; it is constantly tested against the facts; wherever it can no longer explain the latter, it shows its limitations and unsuitability. It must then be rethought.

Furthermore, while the formulation of a theory like that of evolution complies with the need for consistency with the observed data, it borrows certain notions from natural philosophy.

And, to tell the truth, rather than the theory of evolution, we should speak of several theories of evolution. On the one hand, this plurality has to do with the different explanations advanced for the mechanism of evolution, and on the other, with the various philosophies on which it is based. Hence the existence of *materialist*,

¹¹¹ Jeffrey L. Shelter, *Evolution*, at <http://www.usnews.com/usnews/issue/4evol.htm> (last visited Jan. 5, 2001).

reductionist and *spiritualist* interpretations. What is to be decided here is the true role of *philosophy* and, beyond it, of *theology*.¹¹²

Whether Pope John Paul II truly is advocating the general theory of evolution, with a theistic addition is uncertain since his statements are not entirely clear. He speaks of theory in a philosophical way not generally accepted by the scientific community, who consider evolution a fact.¹¹³ Second, there is doubt as to whether the press properly interpreted the French used by the Pope in which he may have been less charitable toward any general theory. Polish Roman Catholic scientist Maciej Giertych argues that *une* can mean "a" or "one." The secular media translated the phrase "a hypothesis," while the official Roman Catholic newspaper, *L'Osservatore Romano*, translated it "one hypothesis": "Today, almost half a century after the publication of the Encyclical [*Humani generis*, 1950], new knowledge has led to the recognition of more than **one** hypothesis in the theory of evolution."¹¹⁴ Third, Pope John Paul II speaks of "theories of evolution" not referring necessarily to Darwinism nor neo-Darwinism. George Sim Johnson explains what he understands this statement to mean:

The Pope is aware of this controversy among evolutionists, writing that 'rather than speaking about the theory of evolution, it is more accurate to speak of the theories of evolution. The use of the plural is required here . . . because of the diversity of explanations regarding the mechanism of evolution.' And he goes on to reject the essence of Darwinism: "[T]heories of evolution which, because of the philosophies which inspire them, regard the spirit either as emerging from the forces of living matter, or as a simple epiphenomenon of that matter, are incompatible with the truth about man."¹¹⁵

Fourth, the Pope addresses the importance of recognizing that the theory of evolution [or theories] is an interpretation of the scientific evidence

¹¹² Pope John Paul II, *Truth Cannot Contradict Truth: Address to the Pontifical Academy of Sciences* (Oct. 22, 1996), available at <http://www.newadvent.org/docs/jp02tc.htm> (emphasis and bracketed French in original).

¹¹³ See, e.g., Stephen Jay Gould, *Darwinism Defined: The Difference Between Fact and Theory*, DISCOVER Jan. 1987, at 64-70 (defining the factual basis of evolution).

¹¹⁴ ChristianAnswers.Net, *What Is the Significance of the Pope's Recent Support of Evolution?*, at <http://www.christiananswers.net/q-aig/aig-c017.html> (last visited Mar. 24, 2001) (quoting MACIEJ GIERTYCH, OPOKA (1996)) (emphasis and bracketed material in original).

¹¹⁵ George Sim Johnston, *The Pope and Evolution*, at <http://www.catholic.net/RCC/Issues/Pope-and-Evolution/pope-and-evolution.html> (last visited Dec. 31, 2000). For another Roman Catholic response to the media's perspective that the Pope has embraced Darwin, see David Palm, *Pope John Paul II and Evolution* (July 15, 1999), at http://www.greenspun.com/bboard/q-and-a-fetch-msg.tcl?msg_id=0015jL. For a more negative response, see Henry M. Morris, *Evolution and the Pope*, at <http://www.bible.ca/tracks/b-pope-accepts-evolution.htm> (last visited Dec. 31, 2000).

which must be tenuous and also not allowed to override important Biblical considerations of the spiritual nature of man.

One cannot say, then, with any certainty that the Pope would embrace evolution in the wholehearted manner done by James H. Jauncey:

However, there is evidence on every hand that the conflict seems to be disappearing. There are a great number of biologists who at least tentatively believe in evolution, but who nevertheless are active members of Christian churches and find no problem at all. The general attitude is that even if evolution were to prove true, instead of making God unnecessary, it would merely show that this was the method God used.¹¹⁶

This union of evolution and theism may seem to work for many religious scientists but it does not sit well with many scientists who believe that the methodological naturalism of macroevolution is inconsistent with belief in an intelligent designer.¹¹⁷ For example, Douglas Futuyma, a widely recognized author of an evolutionary biology college textbook, speaks of the inconsistency of holding to the belief of purposeful creation and also evolution: "Some shrink from the conclusion that the human species was not designed, has no purpose, and is the product of mere mechanical mechanism—but this seems to be the message of evolution."¹¹⁸

¹¹⁶ JAMES H. JAUNCEY, SCIENCE RETURNS TO GOD 20 (1961).

¹¹⁷ William Dembski states why he believes most evolutionist scientists reject theistic evolution:

It is for failing to take Ockham's razor seriously that the Darwinian establishment despises theistic evolution. Not to put too fine a point on it, the Darwinian establishment views theistic evolution as a weak-kneed sycophant that desperately wants the respectability that comes with being a full-blooded Darwinist but refuses to follow the logic of Darwinism through to the end. It takes courage to give up the comforting belief that life on earth has a purpose. It takes courage to live without the consolation of an afterlife. Theistic evolutionists lack the stomach to face the ultimate meaninglessness of life, and this failure of courage makes them contemptible in the eyes of full-blooded Darwinists (Richard Dawkins is a case in point).

MERE CREATION, *supra* note 88, at 21.

¹¹⁸ FUTUYMA, *supra* note 88, at 344-45. That theism and the general theory of evolution are at opposite spectrums is shared by others. For example, one creationist textbook says, "There are essentially only two philosophic viewpoints of origins among modern biologists—the doctrine of evolution and the doctrine of special creation." BIOLOGY: A SEARCH FOR ORDER IN COMPLEXITY at xvii (J.N. Moore & H. Slusher eds., 1974). Evolutionists also concur; for example, "Such explanations tend to fall into one or the other of two broad categories: special creation or evolution. Various admixtures and modifications of these two concepts exist, but it seems impossible to imagine an explanation of origins that lies completely outside the two ideas." P. DAVIS & E. SOLOMON, THE WORLD OF BIOLOGY 395 (1974); see also GEORGE WALD, THEORIES OF THE ORIGIN OF LIFE, FRONTIERS OF MODERN BIOLOGY 187 (1962).

Law professor Phillip Johnson believes this struggle to maintain Christian faith in a God who has created the universe and life and yet accept evolutionary naturalism, with its purposeless mechanism,¹¹⁹ has caused many evolutionary theists to be defensive, seeking to justify themselves within academia rather than to influence the academic community. Johnson poses the dilemma for such a believer: "If the evolutionary scientists are right, then believers in God are deluded. People who think God is real either do not understand the meaning of evolution or for personal reasons are unwilling to follow the path of scientific understanding to its logical conclusion in naturalism."¹²⁰

Berkhof speaks for many Christian theologians when he argues that evolution and theism are not compatible.¹²¹

¹¹⁹ Dembski discusses this complexity on the part of the theistic evolutionist:

Theistic evolution takes the Darwinian picture of the biological world and baptizes it, identifying this picture with the way God created life. When boiled down to its scientific content, however, theistic evolution is no different from atheistic evolution, treating only undirected natural processes in the origin and development of life. Theistic evolution places theism and evolution in an odd tension. If God purposely created life through Darwinian means, then God's purpose was to make it seem as though life was created without purpose. Within theistic evolution, God is a master of stealth who constantly eludes our best efforts to detect him empirically. The theistic evolutionist believes that the universe is designed. Yet insofar as there is design in the universe, it is design we recognize strictly through the eyes of faith. Accordingly, the natural world in itself provides no evidence that life is designed. For all we can tell through our natural intellect, our appearance on planet Earth is an accident.

MERE CREATION, *supra* note 88, at 20.

¹²⁰ PHILLIP E. JOHNSON, REASON IN THE BALANCE: THE CASE AGAINST NATURALISM IN SCIENCE, LAW & EDUCATION 9 (1995). Observe the widely known criticism of creationists by Richard Dawkins: "It is absolutely safe to say that if you meet somebody who claims not to believe in evolution, that person is ignorant, stupid, or insane (or wicked, but I'd rather not consider that)." Mark Hartwing, *Challenging Darwin's Myths*, at <http://www.apologetics.org/articles/myths.html> (last visited Mar. 24, 2001).

¹²¹ One should understand that when creationists say evolution and creation are incompatible, they speak of the general theory of evolution, sometimes called macroevolution. Microevolution, small changes among species due to adaptation to environment, is probably believed by most creationists. Evolutionist Robert Pennock speaks to this:

Recently, creationists have modified their view that evolution does not occur. In the face of the many examples in which evolution has been directly observed, they now agree that evolution can be demonstrated, but they now say that this is mere "microevolution." Intelligent-design creationist John Ankerberg, for example, writes: "Microevolution or strictly limited change within species can be demonstrated but this has nothing to do with evolution as commonly understood." Such statements, and they now appear commonly in creationist literature, are astounding to biologists who, in the first place, do not define the latter in terms of "strictly limited change within species."

This [theistic evolution] has often been called derisively a 'stop-gap' theory. It is really a child of embarrassment, which calls God in at periodic intervals to help nature over the chasms that yawn at her feet. It is neither the Biblical doctrine of creation, nor a consistent theory of evolution, for evolution is defined as 'a series of gradual progressive changes effected by means of resident forces' (Le Conte). In fact, theistic evolution is a contradiction in terms. It is just as destructive of faith in the Biblical doctrine of creation as naturalistic evolution is; and by calling in the creative activity of God time and again it also nullifies the evolutionary hypothesis.¹²²

PENNOCK, *supra* note 20, at 151-52. One wonders at Pennock's concern with creationists who, upon seeing evidence of change in nature modify their views or terminology to comply with evidence. Such willingness to adjust to facts should be admired. Unwillingness, however, to change one's views based on unproved assumptions should be required of no one. Moreover, the use of macro- and micro-evolution is not restricted to creationists. See *supra* notes 6 and 20 for Cleary's comments.

¹²² BEKHOF, *supra* note 103, at 139-40. There are at least three areas in which many Christians believe theism and evolution are incompatible, thus excluding theistic evolution. The first problem is the philosophical difficulties of holding the two positions in tension, since, it is argued, the systems of evolution and creation are mutually exclusive. There are several reasons for this: a) the creation of new kinds reached its climax and completion in the originally graded orders of being and life; b) fixed laws and limits govern the creation; c) the law of stability is now more fundamental in the time-space universe than that of changing forms; d) man bears a permanent dignity and supremacy among the animals; and e) evolutionary theory has as its creates problem a satisfactory explanation for the origin of life. There are, however, three insurmountable barriers: the gap between inanimate and animate objects; the gap between animate and sentient [conscious of sense and perception] objects; and the gap between material and spiritual objects.

The second problem is Biblical in nature. Millard Erickson avers that though theistic evolution may be consistent with much scientific data, it has difficulty with the Biblical account. MILLARD J. ERICKSON, CHRISTIAN THEOLOGY 383 (1985). Many passages of scripture indicate that animals, man and various human organs were created by God. Problems related to direction creation of man's body: a) the passage that states that man was made of the dust of the ground cannot be an allegorical reference to human ancestry in light of *Genesis* 3:19 (men do not return to the animal state); b) Paul distinguishes different kinds of flesh in 1 *Corinthians* 15:39; i.e. men and animals are different; c) God created mankind from the beginning male and female (*Genesis* 1:27); and d) Eve's body was a special creation of God (*Genesis* 2:21-22).

The third problem is theological, specifically pertaining to the *imago Dei* and the fall of man. Man, or adam, is the image of God, not some part of man (*Genesis* 1:26-28), so that male and female, as man, became living beings in a special way not shared by other animals. Moreover, in the fall of man (*Genesis* 3:), the moral nature, and sinfulness, of humanity is manifested in a way not shared by animals. See ERICKSON, *supra*, at 581-85 for a discussion of the nature of sin in light of the theory of evolution.

B. The Rise of Creation-Science

1. Similarity to Earlier Creationism

Creation-science contains divergent elements, but is most closely aligned with what is known as scientific creationism,¹²³ or "young earth" creationism.¹²⁴ As evidenced in the "balanced treatment" legislation,¹²⁵ creation-science adheres to a literal interpretation of the Bible, advocating creation out of nothing,¹²⁶ a recent creation¹²⁷ (i.e., the days of *Genesis* 1 as 24 hour days), no evolutionary development from earlier ancestral forms (i.e., man and woman created after animals as fully grown),¹²⁸ fixed limits to changes,¹²⁹ a separate ancestry for humans and apes,¹³⁰ and a worldwide flood.¹³¹

Many scientists believe that it is quite likely that creation-science has great similarity to Biblical creationism advanced by Christianity. In seeking to demonstrate the use of causal reasoning, scientist Henry Morris notes that the theistic creationist may deduce a First Cause with certain attributes, but this First Cause looks very much like the God of the Bible:

The First Cause of limitless Space	must be infinite
The First Cause of endless Time	must be eternal
The First Cause of boundless Energy	must be omnipotent
The First Cause of universal Interrelationships	must be omnipresent
The First Cause of infinite Complexity	must be omniscient

¹²³ Creation-science appears to be an interchangeable term with scientific creationism. See generally SCIENTIFIC CREATIONISM (Henry M. Morris ed., 1974), in which the various postulates are virtually identical with what is seen in creation-science legislation. For the most complete exposition of creation-science, see generally 2 BIRD, *supra* note 53.

¹²⁴ Creationism (excluding theistic evolution) is a diversified movement with such positions with most having held to an old earth, such as progressive creationism, gap theory creationists, and day-age creationists. Only recent-age creationists would adhere to a contiguous solar days creation within the last few thousand years. For Biblical alternatives on these various theories on the days of creation and the age of the earth, see GRUDEM, *supra* note 110, at 287-309. For a discussion of possible interpretation of "days" in *Genesis* 1, see GLEASON L. ARCHER, JR., A SURVEY OF OLD TESTAMENT INTRODUCTION 171-78 (1964). See also SCIENTIFIC CREATIONISM, *supra* note 123, at 149-69 for scientific arguments for young earth, and Scott, *supra* note 101, for presentation of various kinds of evolution and creationism.

¹²⁵ See *supra* notes 77-82.

¹²⁶ Cf. *Genesis* 1:1; see also SCIENTIFIC CREATIONISM, *supra* note 123, at 17.

¹²⁷ See *id.* at 131-69.

¹²⁸ *Genesis* 1:28; 2:19.

¹²⁹ *Genesis* 1:24 ("after their own kind"); see SCIENTIFIC CREATIONISM, *supra* note 123, at 69-73.

¹³⁰ *Genesis* 1:26; 2:19; see SCIENTIFIC CREATIONISM, *supra* note 123, at 171-201.

¹³¹ *Genesis* 8-9 (or similar catastrophe); see SCIENTIFIC CREATIONISM, *supra* note 123, at 91-130.

The First Cause of Moral Values	must be moral
The First Cause of Spiritual Values	must be spiritual
The First Cause of Human Responsibility	must be volitional
The First Cause of Human Integrity	must be truthful
The First Cause of Human Love	must be loving
The First Cause of Life	must be living. ¹³²

2. Differences with Former Creationism

There are some differences, however, between creation-science and creationism, the most stark being the failure to identify the Creator with the God revealed in the Bible and the absence of Biblical references. There is also the allusion to a worldwide catastrophe which may be other than the Noahic flood.¹³³ Some of the legislative enactments on balanced treatment specifically disavow association with religious or sacred texts.¹³⁴ In setting forth the difference between scientific creationism and religious creationism, Whitehead and Conlan say,

A distinction has been made between 'religious creationism' and 'scientific creationism' Religious creationism relies on a literal reading of *Genesis* from the Old Testament of the Bible regarding, for example, the creation of Adam and Eve and the worldwide flood sent by God that destroyed all mankind except Noah and his family Scientific creationism, on the other hand, is 'a theory of the origin of the earth and life that employs scientific argument and not a sacred text in its challenge of the general theory.'¹³⁵

3. Underlying Assumptions of Creation-Science

a. Only Two Options Available

The arguments of creation scientists are based on the underlying postulate that only two options are available to explain the existence of

¹³² See SCIENTIFIC CREATIONISM, *supra* note 123, at 20. One may observe such traits of the God presented in the Bible in any standard theology. See, for example, the following theologians' discussions of the doctrine of God's nature: GRUDEM, *supra* note 110, at 156-221; 1 WILLIAM G.T. SHEDD, DOGMATIC THEOLOGY 334-462 (Zondervan Publ'g House 1971) (1888); 1 THOMAS C. ODEN, SYSTEMATIC THEOLOGY: THE LIVING GOD 83-130 (1987); 1 FRANCIS PIEPER, CHRISTIAN DOGMATICS 427-63 (1950); LUDWIG OTT, FUNDAMENTALS OF CATHOLIC DOGMA 28-49 (1955); 1 CHARLES HODGE, SYSTEMATIC THEOLOGY 366-441 (1973).

¹³³ Whitehead and Conlan mention the similarity of belief in a Creator between scientific creationism and religious creationism but also adds that "both are in derivation religious as is the theory of evolution." John W. Whitehead & John Conlan, *The Establishment of the Religion of Secular Humanism and Its First Amendment Implications*, 10 TEX. TECH L. REV. 1, 47 (1978).

¹³⁴ See, e.g., H.R. 1224, 56th Leg. Sess. § 6 (S.D. 1981) ("This Act does not require or permit instruction in any religious doctrine or materials.").

¹³⁵ Whitehead & Conlan, *supra* note 133, at 47 n.228.

the universe and life. Evolutionists have argued that the teaching of evolution is necessary for proper education in practically all fields of the natural and social sciences.¹³⁶ One of the responses of the courts and evolutionists has been that if one starts teaching creation, then one would be required to teach any number of other alternatives to evolution, making the teaching of science unworkable in the schools.¹³⁷ Though certainly there are a variety of ways in which evolution and creation may be explained,¹³⁸ in reality, only two general theories may be proposed with a number of sub-theories. As physicist Robert Jastrow, an evolutionist, has stated:

Either life was created on the earth by the will of a being outside the group of scientific understanding; or it evolved on our planet spontaneously, through chemical reactions occurring in nonliving matter lying on the surface of the planet. The first theory is a statement of faith in the power of a Supreme Being not subject to the

¹³⁶ This claim was made early by evolutionists. In the *Scopes trial* the testimony of Charles Hubbard Judd, Director of the School of Education, University of Chicago was that, "It will be impossible, in my judgment, in the state university, as well as in the normal schools, to teach adequately psychology or the science of education without making constant reference to all the facts of mental development which are included in the general doctrine of evolution." THE WORLD'S MOST FAMOUS COURT TRIAL, *supra* note 10, at 232. He continued: "In my judgment it will be quite impossible to carry on the work in most of the departments in the higher institutions of the state of Tennessee without teaching the doctrine of evolution as the fundamental basis for the understanding of all human institutions." *Id.* Similar statements were made by Dr. Fay-Cooper Cole regarding anthropology and prehistory of man, *id.* at 238, and by Wilbur A. Nelson, state geologist of Tennessee, about geology. *Id.* at 241. This perspective remains today as is evident today in the arguments of Jeanne Anderson:

[S]tudents not taught evolution will suffer. Without a proper introduction to the fundamental understanding on which the biological sciences are based, students planning to go into medicine, medical research, biological research, and a variety of other related fields, will start out several steps behind their peers in private schools or in other countries. It goes without saying that if our children suffer educationally, our nation suffers economically and culturally.

Jeanne Anderson, *The Revolution Against Evolution, or "Well, Darwin, We're Not in Kansas Anymore?"*, 29 J.L. & EDUC. 398, 404 (2000).

¹³⁷ The protest has been made once again in the recent Kansas case, in which the state school board sought to balance evolution and creation in science classes in the public schools. See Derek H. Davis, *Kansas Versus Darwin: Examining the History and Future of the Creationism-Evolution Controversy in American Public Schools*, 9 KAN. J. L. & PUB. POL'Y 205 (1999); Robert Vaught, *The Debate over Evolution: A Constitutional Analysis of the Kansas State Board of Education*, 48 U. KAN. L. REV. 1013 (2000). For a thorough creationist discussion arguing for the teaching evolution and creation equally in the public schools, see 2 BIRD, *supra* note 53, at 367-432.

¹³⁸ Both creationism and evolution are merely broad rubrics under which a variety of sub-paradigms reside. Creationists may be recent-age creationists, progressive creationists, day-age creationists, gap creationists, or intelligent design creationists. See Scott, *supra* note 101. Evolutionists include Darwinists, neo-Darwinists, punctuated equilibrium evolutionists. See *id.*

laws of science. The second theory is also an act of faith. The act of faith consists in assuming that the scientific view is correct, without having concrete evidence to support that belief.¹³⁹

In addition, George Wald, Harvard biologist, has properly stated: “[T]here are only two possibilities: either life arose by spontaneous generation . . . or it arose by supernatural creation . . . there is no third position.”¹⁴⁰

b. Characteristics of the Options

Within broad strokes, these two competing philosophies of origins are direct opposites.¹⁴¹ This mutual exclusivity may be graphed as follows:

<u>Evolution</u>	<u>Creation</u>
Humanism	Theism
Naturalism	Supernaturalism
Nature	God
Impersonal Force	Personal being
Chance	Design
Mediterranean cosmologies	Hebrew Scriptures
Man as animal	Man as image of God
Relative truth	Absolute Truth
Amoral or non-moral	Moral law of Creator ¹⁴²

4. Reasons for a Two-Model Approach

Those who champion the balanced treatment of creation and evolution within the public schools set forth a number of reasons why they believe such balance is needed. First, they argue the religion of secular humanism¹⁴³ is being promoted in public schools through the

¹³⁹ Whitehead & Conlan, *supra* note 133, at 49 n.238.

¹⁴⁰ WALD, *supra* note 118, at 187.

¹⁴¹ What is presented here is a view of creationism that reflects a Judeo-Christian perspective of creation. The mutual exclusivity is maintained even with origins as seen in intelligent design arguments, *see infra* section II.E., though these arguments do not necessarily postulate the identity of the designer, nor reference the Bible and other arguments seen in the graph in the text above.

¹⁴² The author has used this chart for a number of years and is unsure whether it is borrowed or an original formulation that he developed.

¹⁴³ The meaning of religion has taken on a much broader meaning in this century than how it was used in the eighteenth and nineteenth centuries. See House, *supra* note 65, at 254-56. The influence of liberal theologians, such as Paul Tillich and John A.T. Robinson in *United States v. Seeger*, 380 U.S. 163 (1965), set a new direction in defining religion. There the Court decided that belief in an “ultimate concern” equated to belief in a God. *Id.* at 166. Cf. discussion *infra* note 146. The court in *Torcaso v. Watkins*, 367 U.S. 488, 495 n.11 (1961), extended this non-theistic definition to atheistic religions: “Among religions in this country which do not teach what would generally be considered a belief in the existence of God are Buddhism, Taoism, Ethical Culture, Secular Humanism and

teaching of evolution.¹⁴⁴ If evolution is a tenet of secular humanism, it is clearly arguable that teaching it would be an establishment¹⁴⁵ of religion¹⁴⁶ in violation of the First Amendment.¹⁴⁷

others." But the Court in *Torcaso* also said that non-theistic religions, such as secular humanism, could not be preferred over theism. *Id.* at 495. Consequently the exclusive propagation of secular humanism in the educational disciplines of the public school system would be an unconstitutional contravention of the Establishment Clause. One writer has said, "[I]f it is indeed the case that the public schools are a fountainhead of a secular kind of religion, then the argument, it seems should call for the abolition of the public schools as being in themselves in violation of the first amendment." Paul A. Freund, *Public Aid to Parochial Schools*, 82 HARV. L. REV. 1680, 1685 (1969).

¹⁴⁴ Whitehead and Conlan argue that since evolution is a major tenet of secular humanism, and if it is the only view allowed to be taught in the public schools, then it logically follows that the public schools promote only one form of religion, that of secular humanism. Whitehead & Conlan, *supra* note 133, at 15-24.

¹⁴⁵ The Supreme Court has developed three tests to determine whether there is an establishment of religion: 1) Is there a secular purpose for the governmental action? 2) Does the action have the primary effect to either advance or inhibit religion? 3) Is there excessive entanglement with religion? *Lemon*, 403 U.S. at 612-13. For a discussion of these tests as to their current viability, as well as others recently developed by the Court, see House, *supra* note 65, at 270-88.

¹⁴⁶ The original meaning of the First Amendment is much different than the way it is being interpreted and applied in most courts today. The meaning of religion in the First Amendment was understood in the Founding period of the country to be one's view of his relation to his Creator and to the obligations that these relations impose. *Davis v. Beason*, 133 U.S. 333, 342-43 (1890) ("The term 'religion' has reference to one's views of his relations to his Creator, and to the obligations they impose for reverence of his being and character, and of obedience to his will."). This understanding of the Court accords well with the understanding of James Madison and others framers of the U.S. Constitution. For discussion of how religion was understood in the eighteenth century, see House, *supra* note 65, at 254-55. That the original intention of "establishment" did not preclude these views is evident from early Supreme Court decisions.

The general view of the courts of this land [until *Everson v. Board of Education*, 330 U.S. 1 (1947)] was that the first part of the amendment was forbidding Congress, the only law making body of the federal government, from establishing a national religion or preferring one religious group or religious tenets over other groups or doctrines. This seems to have been the understanding of those that actually wrote and adopted this amendment based on the debates and revisions that occurred in the summer and early fall of 1787.

Id. at 248. Note the words of Chief Justice John Marshall: "The American population is entirely Christian, & with us, Christianity & Religion are identified. It would be strange, indeed, if with such a people, our institutions did not presuppose Christianity, & did not often refer to it, & exhibit relations with it." Letter from John Marshall to Jasper Adams (May 9, 1883), quoted in RELIGION AND POLITICS IN THE EARLY REPUBLIC: JASPER ADAMS AND THE CHURCH-STATE DEBATE 113-14 (Daniel Driesbach ed., 1996). According to Justice Joseph Story, Christianity ought to receive encouragement by the state:

Probably at the time of the adoption of the Constitution, and of the amendment to it now under consideration [First Amendment], the general if not the universal sentiment in America was, that Christianity ought to receive encouragement from the State so far as was not incompatible with the private rights of conscience and the freedom of religious worship. An

Second, it is averred that when the state becomes hostile to religion¹⁴⁸ by means of promoting an alternate and antagonistic system to

attempt to level all religions, and to make it a matter of state policy to hold all in utter indifference, would have created universal disapprobation, if not universal indignation.

2 JOSEPH STORY, COMMENTARIES ON THE CONSTITUTION OF THE UNITED STATES 594 (2d ed. 1851), quoted in ROBERT CORD, SEPARATION OF CHURCH AND STATE: HISTORICAL FACT AND CURRENT FICTION 13 (1982).

The First Amendment simply sought to keep any particular branch of Christianity from becoming dominant over other branches of Christianity (as they had experienced in England with the Church of England). See Robert Cord, *Church-State Separation: Restoring the "No Preference" Doctrine of the First Amendment*, in RESTORING THE CONSTITUTION 301-02 (H. Wayne House ed., 1987). "The real object of the First Amendment was not to countenance, much less to advance, Mahometanism, or Judaism, or infidelity, by prostrating Christianity; but to exclude all rivalry among Christian sects, and to prevent any national ecclesiastical establishment which should give to a hierarchy the exclusive patronage of the national government." STORY, *supra*, at 593, quoted in CORD, *supra*, at 13. The issue in no way concerns the disenfranchisement of Christianity or the question of recognition of the Supreme Being (such statements occur in both the Declaration of Independence and the Constitution). See House, *supra* note 65, at 232-41. Congress, then, was not to impose any Christian denomination on the states, but this did not prohibit any particular state from having its own established religion. See the discussion on established churches at the time of the writing of the U.S. Constitution in JOHN EIDSMOE, THE CHRISTIAN LEGAL ADVISOR 117-27 (1984).

¹⁴⁷ The sole teaching of evolution in public schools or exclusive presentation of evolution in state facilities or institutions is violative of the First Amendment to the United States Constitution. John W. Whitehead, Testimony of John W. Whitehead 8 (1979) (privately published paper) (on file with author). This is because evolution is a tenet of religious belief. Whitehead & Conlan, *supra* note 133, at 49 n.234 ("A significant school of Secular Humanists regard their convictions as a religion and, in conjunction, emphasize the need to adhere to the general theory of evolution as a tenet of their religion."); As such, evolution should not be preferred over theism. The Court has said that non-theistic belief cannot be preferred over theistic belief in the school. See School Dist. of Abington Township v. Schempp, 374 U.S. 203, 225 (1963) ("[T]he State may not establish a 'religion of secularism' in the sense of affirmatively opposing or showing hostility to religion, thus 'preferring those who believe in no religion over those who do believe.'"). Preferring evolution over theism is in contravention of the Establishment Clause of the First Amendment, which states that "Congress shall make no law respecting an establishment of religion." U.S. CONST. amend. I.

¹⁴⁸ When the state becomes hostile to religion by means of promoting an alternate and antagonistic system contrary to that religion then the state has violated the free exercise of that religion. In *Schempp*, Justice Clark says, "[T]he State may not establish a 'religion of secularism' in the sense of affirmatively opposing or showing hostility to religion, thus 'preferring those who believe in no religion over those who do believe.'" *Schempp*, 374 U.S. at 225. Stanley Ingber properly understands this problem:

[T]he Establishment Clause not only prevents efforts to encourage religion, it also prevents attempts to discredit religion. Public school teachers can neither revere nor denigrate religious doctrine in the classroom. This latter argument is of no solace to those who believe that all secular teaching inconsistent with religious tenets is antireligious. If such were true, however, public education itself would have to be abandoned.

the religious views of others,¹⁴⁹ i.e., parents and children in the public schools, there is a violation of *free exercise of religion*.¹⁵⁰ It is necessary for the state to remain neutral between competing systems of religious ideology;¹⁵¹ this may be accomplished by teaching no particular view, or by non-preferential treatment of all views.¹⁵²

Stanley Ingber, *Religion or Ideology: A Needed Clarification of the Religion Clauses*, 41 STAN. L. REV. 233, 314 (1989) (insisting that in the public realm once policy is democratically determined, all must be bound in spite of individual conscience). Elsewhere I have attempted to distinguish between "irreligious" secularism, which is opposed or hostile to religion, and "nonreligious" secularism, for which the existence or nonexistence of religion is irrelevant. See *id.* at 310-15; see also Stanley Ingber, *Judging Without Judgment: Constitutional Irrelevancies and the Demise of Dialogue*, 46 RUTGERS L. REV. 1473, 1600 n.420 (1994).

¹⁴⁹ See Whitehead & Conlan, *supra* note 133, at 15-24.

¹⁵⁰ The portion of the clause relating to freedom of religion reads, "Congress shall make no law . . . prohibiting the free exercise thereof" (that is, of religion in the preceding clause). U.S. CONST. amend. I. The Supreme Court has said that the State would be prohibiting the free exercise of religion if it sought to ban the performance of (or abstention from) physical acts related to worship such as assembling with others for a worship service, participating in sacramental use of bread and wine, proselytizing, and abstaining from certain foods or certain modes of transportation, when they are only engaged in for religious reasons, or only because of the religious belief that they display. Laws that specifically discriminate against the religious for their religion are a violation of free exercise. See *Employment Division v. Smith*, 494 U.S. 872, 877-78 (1990).

¹⁵¹ The state must remain neutral in religious questions. See *Schempp*, 374 U.S. at 222. That is, it must not prefer one religious position above another. *Torcaso v. Watkins*, 367 U.S. 488, 495 (1961).

¹⁵² If government promotes one religious view, then it must promote all views and it is not to infringe on either position. See CORD, *supra* note 146, at 138 n.45. It is impossible for the state to truly be neutral, for some system must be the basis of thought and morals. But if the state is going to present ideas fairly, the different views must be included and fairly presented. Harold Clark sets forth this position:

If evolution could be proved, of course it should be taught. If creation could be proved, certainly it should be taught. But since neither can be proved, and there are millions of people who believe in evolution and millions in creation, both should be taught, and the pupils allowed to take their choice as to which [to them] seems the most reasonable. But it is manifestly unfair to teach only one side of the question.

HAROLD CLARK, THE BATTLE OVER GENESIS (1977), quoted in BERGMAN, *supra* note 104, at 34. Some have argued that to teach creation, is to teach a religious idea, and so indoctrination of religion will occur. Bergman rightly indicates that in reality, not only religion but no ideology should be enforced upon students:

The main objection to teaching about religion in the schools is that there will be attempts by teachers to indoctrinate students. This, though, can occur in most any field. In political science or sociology courses teachers can and do use their influence to indoctrinate students in the teachers' own economic or social theories. It is not unknown for teachers to teach theories of racial superiority in their classes. In a school in which the writer taught in the late Sixties, several teachers in a so-called drug education program actually openly encouraged the students to use some types of illegal drugs. The position of these teachers was that smoking marijuana is harmless to

Third, advocates of balanced treatment maintain that teaching creation as science is just as valid as the teaching of evolution.¹⁵³ This is so, it is stated, because the general theory of evolution and the theory of creation are equally religious and equally scientific.¹⁵⁴ Both, it is argued, rely on empirical data and philosophical postulates¹⁵⁵

your health, and no one should prevent someone else from smoking it. This was the teachers' opinion, and they were supported by their principal in the name of academic freedom.

Our concern should be not with indoctrinating students regarding *religious* ideas, but with indoctrinating them regarding *any* ideas. Teachers should be concerned with honestly and fairly presenting material in *all* subjects, and not indoctrinating students in *any* subject.

BERGMAN, *supra* note 104, at 27.

¹⁵³ See MORRIS & PARKER, *supra* note 53, at 8-9.

¹⁵⁴ According to creation-science, the general theory of evolution and the theory of creation are equally religious and equally scientific. If one says evolution is scientific, then on the same basis one must say creation is scientific. If one wants to say creation is religious, then on the same basis one must say evolution is religious. For a defense of these ideas, see 2 BIRD, *supra* note 53, at 314-37.

¹⁵⁵ They both rely on philosophical (faith) postulates, as seen by statement by Matthews:

In accepting evolution as a fact, how many biologists have paused to reflect that science is built upon theories that been proved by experiment to be correct, or remember that the theory of animal evolution has never been thus proved? . . . The fact of evolution is the backbone of biology, and biology is thus in the peculiar position of being a science founded on an unproved theory—is it then a science or a faith? Belief in the theory of evolution is thus exactly parallel to belief in special creation—both are concepts which believers know to be true but neither, up to the present, has been capable of proof.

L. Harrison Matthews, *Introduction to CHARLES R. DARWIN, THE ORIGIN OF SPECIES*, at x (J. M. Dent & Sons, 1971) (1859). Further substantiation is seen in the comment by Australian scientist, Paul Davies:

Today most scientists would not deem their work to have any theological component whatsoever. But even the stoutest atheist among them unwittingly retains the view that nature is rationally ordered and intelligible. It wouldn't be possible to be a scientist without accepting the rational intelligibility of the universe as an act of faith. And Faith is the right word. Science cannot prove that nature has to be this way. Yet many scientists assume that nature confirm to a design or scheme of some sort, even if they are coy about admitting it. . . . The essence of scientific belief is that nature is neither arbitrary nor absurd, that there are valid reasons for the way things are.

Paul Davies, *At the Crossroads*, FORBES ASAP, Oct. 4, 1999, at 231-32, quoted in Thomas F. Heinze, *Answers to My Evolutionist Friends* (Nov. 18, 1999), at http://www.creationism.org/heinze/b1_bang.htm; See also ROBERT T. CLARK & JAMES D. BALES, WHY SCIENTISTS ACCEPT EVOLUTION 95-105 (1966) (addressing the faith basis of evolution).

Fourth, when teaching origins, both models must be taught for there to be neutrality.¹⁵⁶ There are only two possible models: either the universe and subsequent life come into existence from a Creator or everything came into existence in and of itself.¹⁵⁷

Fifth, the teaching of creation aides scientific diversity and provides a methodology that increases student educational development.¹⁵⁸ Since many scientists have become creationists and teach at various universities throughout the United States,¹⁵⁹ presentation of the theory avoids discrimination of a theory held by a minority within the scientific community.¹⁶⁰

E. The Intelligent Design Movement

1. Introduction to Intelligent Design

A new movement has now arisen to challenge naturalistic evolution. Intelligent design, like creationism, opposes a mere chance universe, as reflected in the philosophy of Bertrand Russell:

That man is the product of causes which had no provision of the end they were achieving, that his origins, his growth, his hopes and fears, his loves and beliefs are but the outcome of accidental collocations of atoms . . . and that the whole temple of man's achievement must inevitably be buried beneath the debris of a universe in ruins—all these things . . . are yet so nearly certain that no philosophy which rejects them can hope to stand.¹⁶¹

On the other hand, intelligent design distinguishes itself from the older "scientific creationism" or creation science (e.g. Henry Morris,

¹⁵⁶ See Bird, *supra* note 73, at 554-55, for the argument that the presentation of both creation-science and evolution would neutralize a science course and avoid establishment of religion problems.

¹⁵⁷ See *supra* note 139 and accompanying text (statement by physicist Robert Jastrow).

¹⁵⁸ Richard Bliss, in his doctoral dissertation, compared student groups who used a two model approach with those who used only one model:

Students seem to be more highly motivated and to learn more effectively when studying science from a two-model approach. They seem to have a better grasp of the data surrounding origins and they seem to be open-minded and willing to change their views when new data arrive. . . . The experimental group [using the two-model approach] seemed to develop more critical thinking habits than those who studied origins from an evolutionary model only.

Richard Bliss, *A Comparison of Students Studying the Origins of Life from a Two-Model Approach Versus Those Studying from a Single-Model Approach*, 60 ICR IMPACT SERIES, June 1978, at 1-4, quoted in BERGMAN, *supra* note 104, at 36.

¹⁵⁹ See SCIENTIFIC CREATIONISM, *supra* note 123, at 3-4.

¹⁶⁰ See Whitehead, *supra* note 147, at 6-8.

¹⁶¹ Donald F. Calbreath, *The Challenge of Creationism: Another Point of View*, 12 AM. LABORATORY 8 (1980).

Duane Gish). Unlike creation science, intelligent design does not require that the great majority of scientists be in error about a number of postulates, which are rejected by creationism. For example, an old universe and earth is not opposed. The primary "givens" of the physical sciences are left untouched, such as relativity and radioactive dating, leaving the perspectives of physicists, chemists, and astronomers largely undisturbed. In the life sciences, common ancestry is not challenged out of hand, except with a few modifications. Even the power of natural selection to bring about diversity is accepted in general, so that conclusions drawn by biologists, biochemists, microbiologists, and other scientists are considered correct. Intelligent design, then, leaves most of the theory of evolution intact.¹⁶²

The writings of the proponents of intelligent design are growing¹⁶³ so that the movement has gained the notice, and sometimes the animosity,¹⁶⁴ of the larger scientific community.

But intelligent design does challenge some conclusions drawn by a few scientists, like Richard Dawkins, who explain the origin and complexity of life as a result of blind chance: "Biology is the study of complicated things that gives the appearance of having been designed for a purpose."¹⁶⁵ Intelligent design contradicts this perspective and builds on the perspective advocated by such pre-Darwinian theorists as William Paley, who believed that the universe and life gave proper inference of a designer.¹⁶⁶ Dawkins's view runs counter to these intuitions and scientific inferences.

2. How are Intelligent Design and Darwinism Different?

The primary postulates of Darwinism remain unmoved in intelligent design theory. Certainly, Darwin was not the first to advocate

¹⁶² Stu Pullen, *Evolution vs. Intelligent Design* (Jan. 1, 2001), at <http://www.theory-of-evolution.org/Introduction/evolution-vs-design.htm>.

¹⁶³ Recent books include: THAXTON, BRADLEY & OLSEN, *supra* note 53; DENTON, *supra* note 53; HUBERT P. YOCKEY, INFORMATION THEORY AND MOLECULAR BIOLOGY (1992); BEHE, *supra* note 53; DEAN L. OVERMAN, A CASE AGAINST ACCIDENT AND SELF ORGANIZATION (1997); SPETNER, *supra* note 53; WILLIAM DEMBSKI, THE DESIGN INFERENCE (1998). See also STU PULLEN, DARWIN'S MISTAKE (2001), at <http://www.theory-of-evolution.org>.

¹⁶⁴ See the response of the science faculty at Baylor University to intelligent design scholar William Dembski in Fred Heeren, *The Lynching of Bill Dembski*, AM. SPECTATOR, Nov. 2000, at 44, available at <http://www.spectator.org/archives/0011TAS/heeren0011.htm>; and Lauren Kern, *In God's Country*, HOUSTONPRESS.COM, Dec. 14, 2000, at <http://www.houstonpress.com/issues/2000-12-14/feature2.html>.

¹⁶⁵ RICHARD DAWKINS, THE BLIND WATCHMAKER 1 (1996) (arguing that evolution is blind in its selection, so if it looks like it is designed that is only because it works).

¹⁶⁶ WILLIAM PALEY, NATURAL THEOLOGY: OR, EVIDENCE OF THE EXISTENCE AND ATTRIBUTES OF THE DEITY COLLECTED FROM THE APPEARANCES OF NATURE 5-7 (1839).

that life evolved, but he was the first to offer a viable scientific explanation for how and why evolution might occur. He used the concept of the survival of the fittest, natural selection, to explain evolution. His five tenets of evolution are still accepted by most scientists:

1. Variation exists within members of the same species. A species is a group of interbreeding animals or plants.
2. Variation can be inherited. That is parents pass on their traits to their offspring.
3. Resources like food, water and shelter are limited. Animals and plants compete for these limited resources.
4. Natural selection is a direct consequence of the first three tenets. Darwin proposed that since natural resources are limited, individuals with favorable traits are more likely to survive and reproduce. Because these individual[s] pass on favorable traits to their descendants, nature selects life with favorable characteristics and preserves it. Darwin called this process natural selection or survival of the fittest.
5. Under the guidance of natural selection simple life evolved into complex life. Since large evolutionary changes are too slow to be observed directly in scientific experiments, Darwin could not test this tenet. So, instead he extrapolated. He documented the small changes that can occur from one generation to the next, and proposed that through numerous, successive, slight modifications, guided by natural selection, the descendants of simple animals evolved into complex animals.¹⁶⁷

Darwin's first four tenets are verified by scientific experiments, but the fifth is only speculation and extrapolation. Evolution creates diversity, but not complexity.

The tenets of intelligent design theory are as follows:

1. The information needed for life is contained in a molecule known as DNA. This information can be analyzed with a field of science called information theory.
2. The complexity of life is a measure of the information in its DNA. Information and complexity are synonyms.
3. Natural selection does not create information. It only modifies existing information. Thus, new information must be created by genetic drift—random changes to DNA.
4. The odds associated with [the occurrence of] events in the past (like the origin and evolution of life) can be accurately determined using information and probability theory.
5. If the odds associated with [the occurrence of] the origin and evolution of life are too small, then design is implicated, and it may be inferred.¹⁶⁸

¹⁶⁷ PULLEN, *supra* note 162, ch. 1, § 1.0, at http://www.theory-of-evolution.org/Main/chap1/sec1/Darwin_hypothesis_1.htm.

¹⁶⁸ Stu Pullen, *The Tenets of Intelligent Design* (Jan. 1, 2001), at <http://www.theory-of-evolution.org/Introduction/design.htm>.

3. Explanation of Intelligent Design

A good entrance into some of the issues surrounding intelligent design, evolution, and scientific creationism is provided by the following classic statement of the Paley-style¹⁶⁹ design argument by David Hume:

Look round the world: Contemplate the whole and every part of it: You will find it to be nothing but one great machine, subdivided into an infinite number of lesser machines, which again admit of subdivisions to a degree beyond what human senses and faculties can trace and explain. All these various machines, and even their most minute parts, are adjusted to each other with an accuracy which ravishes into admiration all men who have ever contemplated them. The curious adapting of means to ends, throughout all nature, resembles exactly, though it much exceeds, the productions of human contrivance; of human design, thought, wisdom, and intelligence. Since therefore the effects resemble each other, we are led to infer, by all the rules of analogy, that the causes also resemble, and that the Author of Nature is somewhat similar to the mind of man, though possessed of much larger faculties, proportioned to the grandeur of the work which he has executed.¹⁷⁰

Hume's Dialogues, a masterpiece in the philosophy of religion, go on to subject the design argument to rigorous, sustained criticism. The force of Hume's philosophical criticism of the Paley-style design argument is admitted by theists as well as non-theists. For example, Alvin Plantinga, a leading contemporary theistic philosopher, says "Hume's criticism seems correct. The conclusion to be drawn, I think, is that the teleological argument . . . is unsuccessful."¹⁷¹

The design argument received a major blow from Darwinian evolution. Given Darwin's theory of natural selection and descent with modification, a Designer—or any other means of supernatural intervention—no longer seemed to be necessary to explain the intricacies of biological systems such as the human eye. Paley's Divine Watchmaker gave way to the "blind watchmaker" of naturalistic evolution. As Richard Dawkins put it: "All appearances to the contrary, the only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way Natural selection . . . [if] it can be said to play the role of watchmaker in nature, it is the *blind* watchmaker."¹⁷²

¹⁶⁹ It is thus named because it bears a close resemblance to the design argument that was formulated by the nineteenth-century theologian William Paley. See PALEY, *supra* note 166.

¹⁷⁰ DAVID HUME, DIALOGUES CONCERNING NATURAL RELIGION AND THE POSTHUMOUS ESSAYS 15 (Richard H. Popkin ed., 1980).

¹⁷¹ ALVIN PLANTINGA, GOD, FREEDOM, AND EVIL 84 (1974).

¹⁷² DAWKINS, *supra* note 165, at 5.

However, “intelligent design” is breathing new life into the design argument. What is intelligent design? According to William Dembski, a leading advocate of the movement, intelligent design is “a new program for scientific research.”¹⁷³ More specifically, intelligent design is a scientific theory for “detecting and measuring information, explaining its origin and tracing its flow.”¹⁷⁴ To do this, intelligent design draws upon a reliable method for making a “design inference,” i.e. inferring the presence of design.¹⁷⁵ Dembski defines design as a “set-theoretic complement of the disjunction law-or-chance.”¹⁷⁶ That is, design can safely be inferred, once law and chance have both been eliminated, in that order. Dembski argues that the distinguishing earmark of design is that it is an event which is characterized by both specification and small probability.¹⁷⁷ Dembski’s “standard operating procedure”—in essence, is a decision-guiding flowchart—which summarizes the logic of the design inference. It has been dubbed “the explanatory filter.”¹⁷⁸ Dembski comments about the explanatory filter that it “faithfully represents the ordinary practice of humans in sorting through events whose mode of explanation is alternately law or chance or design.”¹⁷⁹

A key virtue of Dembski’s explanatory filter is that it is not an ad hoc criterion invented merely for supporting the case for intelligent design in the creation-evolution debate. The explanatory filter summarizes the logic of detecting intelligent causes that are operative in such diverse, “nonreligious” fields as intellectual property protection,¹⁸⁰ forensic science and detection,¹⁸¹ data falsification in science,¹⁸² cryptography,¹⁸³ as well as in specialized programs like SETI (Search for

¹⁷³ MERE CREATION, *supra* note 88, at 16.

¹⁷⁴ *Id.* at 17.

¹⁷⁵ For an overview of the logic of the design, see DEMBSKI, *supra* note 162, at 47-55. Dembski summarizes the design inference by means of the following argument: (Premise 1) E has occurred; (Premise 2) E is specified; (Premise 3) If E is due to chance, then E has small probability; (Premise 4) Specified events of small probability do not occur by chance; (Premise 5) E is not due to a regularity; (Premise 6) E is due either a regularity, chance, or design; (Conclusion) E is due to design. *Id.* at 48.

¹⁷⁶ *Id.* at 36.

¹⁷⁷ *Id.* at 217-18. Dembski gives an exposition of what “specification” is in DEMBSKI, *supra* note 163, at 133-74, as well as defending the law of small probability in pages 175-223 of that same book. It should also be noted that although Dembski uses a different terminology, his “specified small probability” is basically the same concept as Michael Behe’s “irreducible complexity.” Cf. BEHE, *supra* note 53, at 38.

¹⁷⁸ See MERE CREATION, *supra* 88, at 99; DEMBSKI, *supra* note 162, at 37.

¹⁷⁹ MERE CREATION, *supra* note 88, at 104.

¹⁸⁰ DEMBSKI, *supra* note 163, at 20-22.

¹⁸¹ *Id.* at 22-24.

¹⁸² *Id.* at 24-26.

¹⁸³ *Id.* at 26-30.

Extraterrestrial Intelligence).¹⁸⁴ All of the above fields crucially rely upon the explanatory filter (and the logic of the design inference which it summarizes) to do their job. As Dembski says, "Entire human industries would be dead in the water without the explanatory filter."¹⁸⁵ Dembski and other intelligent design theorists simply argue that when various features of biological systems (e.g. Behe's examples of irreducible complexity in various cellular structures;¹⁸⁶ the information content latent in DNA¹⁸⁷) are examined in light of the explanatory filter, a justified "design inference" will result. The explanatory filter makes precise the vague intuitions which were behind Paley's argument from analogy. Thus, the disagreement between intelligent design theorists and their naturalistic critics is mostly over the *application* of the design-detecting method summarized in the explanatory filter, and not over the legitimacy of the method itself.

How does intelligent design differ from the older, scientific creationism? Briefly, we can list several points on which intelligent design differs from scientific creationism. First, accepting intelligent design only entails an acceptance of "creationism" which is conceived broadly enough to include either a belief in an "old" earth (i.e., which accepts the current scientific estimate of around 4.6 billion years) or even *theistic evolution* (i.e. an intelligent agent guiding the process of evolution). It does not commit one to an acceptance of a "young" earth.¹⁸⁸

Second, and following upon the first difference, scientific creationism (whether young or old earth) usually consists of Fundamentalist and/or Evangelical Christians, whereas, intelligent

¹⁸⁴ *Id.* at 30-32.

¹⁸⁵ MERE CREATION, *supra* note 88, at 104.

¹⁸⁶ Behe's favorite examples of irreducible complexity are the cilium and the bacterial flagellum. BEHE, *supra* note 53, at 59-72.

¹⁸⁷ For more on this, see Stephen C. Meyer, *The Explanatory Power of Design*, in MERE CREATION, *supra* note 88, at 113-42; Walter L. Bradley & Charles B. Thaxton, *Information and the Origin of Life*, in THE CREATION HYPOTHESIS 173-209 (J.P. Moreland ed., 1994); NANCY R. PEARCEY & CHARLES B. THAXTON, THE SOUL OF SCIENCE 221-48 (1994).

¹⁸⁸ This is surely one reason why many traditional "old earth" (or "progressive") creationists like Hugh Ross and Robert Newman have now joined the intelligent design movement, but most traditional "young earth" creationists like Henry Morris and Duane Gish have not joined. Also, intelligent design theorists (along with old earth creationists) accept the Big Bang theory, the reigning model in contemporary cosmology, while young earth creationists reject it. For example, both William Lane Craig and Hugh Ross appeal to the Big Bang theory to support theism. See WILLIAM LANE CRAIG & QUENTIN SMITH, THEISM, ATHEISM AND BIG BANG COSMOLOGY (1993); ROSS, BEYOND THE COSMOS, *supra* note 53; ROSS, THE CREATOR AND THE COSMOS, *supra* note 53; ROSS, THE FINGERPRINT OF GOD, *supra* note 53. Conversely, Henry Morris believes that the Big Bang theory has no observational basis and that it contradicts both the first and second laws of thermodynamics. SCIENTIFIC CREATIONISM, *supra* note 123, at 26.

design is more theologically diverse. For example, various contributors to the seminal volume, *Mere Creation*, represent diverse theological beliefs, e.g., John Mark Reynolds (Eastern Orthodox), Jonathan Wells (The Unification Church), David Berlinski (Judaism), and Michael Behe (Roman Catholic).

Third, intelligent design offers a bona fide research program in science;¹⁸⁹ scientific creationism focuses mainly on critiquing evolution, not on offering a positive research program of its own. Hence, intelligent design should be recognized as a distinct movement in contemporary science,¹⁹⁰ and it should not be casually lumped together with the older scientific creationism under the general rubric of "creationism."¹⁹¹

III. THE EVOLUTION-CREATION CONTROVERSY IN THE COURTS

The issue of whether alternate paradigms of origins may be offered within the public schools has continued to be a cultural and educational controversy since the initial *Scopes* trial of 1925.¹⁹² In the first half of the twentieth century, repeated efforts were made by citizens to introduce legislation blocking the introduction of the teaching of evolution in public classroom.¹⁹³ During much of the latter half of the twentieth century, equally strong efforts were made to prohibit the teaching of scientific evidence for a creationist paradigm of origins.¹⁹⁴ The latter group has contested creationism primarily through the court system. In this article I have chosen to limit discussion to only a few of the court cases which have challenged the creation model of origins.¹⁹⁵

¹⁸⁹ For a suggestive look at some potentially fruitful areas of intelligent design research in molecular biology, see MERE CREATION, *supra* note 88, at 184-93.

¹⁹⁰ Sometimes intelligent design (as well as scientific creationism) is not considered to be science based upon "demarcationist arguments," i.e. arguments which try to show that there is a clear line of demarcation between science and non-science, and that intelligent design and/or scientific creationism belongs in the latter category. For a refutation of such demarcationist arguments, see J.P. MORELAND, CHRISTIANITY AND THE NATURE OF SCIENCE 21-42, 221-34 (1989); and Stephen C. Meyer, *The Methodological Equivalence of Design and Descent*, in THE CREATION HYPOTHESIS, *supra* note 187, at 67-102.

¹⁹¹ No doubt, some evolutionists are aware of the this vital distinction but ignore it because of the propaganda benefit that comes from labeling all anti-evolutionists as "creationists."

¹⁹² See *supra* note 10.

¹⁹³ See the discussion of the *Scopes* trial, *supra* notes 11-44; the Tennessee anti-evolution bill of 1973, *supra* note 60; and the discussion of *Epperson v. Arkansas*, 393 U.S. 97 (1968), *infra* section III.B.

¹⁹⁴ See *infra* note 195 for various cases prohibiting the teaching of creation.

¹⁹⁵ There are several other cases concerning the creation/evolution controversy that deserve mention here. First is *Smith v. Mississippi*, 242 So. 2d 692 (Miss. 1970). This is a case similar to *Epperson* and is mentioned by the *Epperson* court in its opinion. See *Epperson*, 393 U.S. at 109. The *Smith* court held that §§ 6798 and 6799 of the Mississippi

A. Scopes v. State¹⁹⁶ (1927)

On March 13, 1925 the sixty-fourth general assembly of the state of Tennessee passed the Butler Act,¹⁹⁷ also known as the anti-evolution

code prohibiting teaching that mankind descended or ascended from lower form of animal were in violation of freedom of religion mandate of First Amendment. *Smith*, 242 So. 2d at 698.

Wright v. Houston Independent School District, 366 F. Supp. 1208 (S.D. Tex. 1972), regards a complaint from students who desired to enjoin the school district and State Board of Education from teaching evolution as part of the academic curriculum and from adopting textbooks which teach exclusively evolution. Plaintiffs argued that this state action established a religion of secularism and violated neutrality. The court held that the students failed to state a cause of action upon which relief could be granted since there was no state action denying them equal protection or free exercise of religion and since they were free to exempt themselves from the classroom during the instruction in evolution. *Id.* at 1212-13.

Moore v. Gaston County Board of Education, 357 F. Supp. 1037 (W.D. N.C. 1973) dealt with an unpaid student teacher discharged for having revealed, upon questioning by students, his approval of Darwinism, indicating personal agnosticism, and questioning the literal interpretation of the Bible. His summary dismissal because his views were different from his students' parents violated the Establishment Clause of the First Amendment. *Id.* at 1043. The court reasoned that to allow the teacher to respond in a manner which comports with those who "complain the loudest" establishes the religion of those complainants. *Id.* This reasoning seems to affirm the undemocratic perspective of the courts and disenfranchisement of religious believers involved in self-governing. See Hal Culbertson, *Religion in the Political Process: A Critique of Lemon's Purpose Test*, 1990 U. ILL. L. REV. 915, 936 n.201 (1990); see *infra* note 228 and accompanying text.

Steele v. Waters, 527 S.W.2d 72 (Tenn. 1975), is another case involving textbooks, similar to *Daniel v. Waters*, 515 F.2d 485 (6th Cir. 1975). See *supra* notes 62-70 and accompanying text. *Daniel* was decided by the Sixth Circuit a few months before the state Supreme Court decided its case, and served as a precedent. Agreeing with the Sixth Circuit, this court found the state statute to be in violation of the Federal and State Constitutions. *Steele*, 527 S.W.2d at 74.

In *Segraves v. California*, 1981 CA Super. Ct. 278978U, the California Superior Court held that the California State Board of Education Science Framework, as written and as qualified by its antidogmatism policy, provided sufficient accommodation to the perspectives of Segraves, in contrast to his argument that class discussion of evolution deprived him and his children of freedom of religion. Molleen Matsumura, *Background: Eight Significant Court Decisions Regarding Evolution/Creation Issues* (Feb. 15, 2000), at http://ncseweb.org/resources/articles/5445_eight_significant_court_decisi_2_15_2001.asp. The policy declared that class discussions of origins would center on "how," and not "ultimate cause," and any speculative statements concerning origins should be presented conditionally, not dogmatically. *Id.*

Rodney LeVake v. Independent School District 656, CX-99-793 (D. Minn. 2000) (mem.), is a recent decision in which District Court Judge Bernard E. Borene dismissed the case. LeVake, a high school biology teacher, argued that his free speech right to teach "evidence both for and against the theory" of evolution in the classroom. Matsumura, *supra*. The school district, after having examined his teaching content, concluded that it did not match the curriculum, which required the teaching of evolution. *Id.* After examining the case law concerning the requirement of teachers to teach the curriculum of the school district employing the teacher, the judge held that LeVake did not have a free speech right to override the curriculum, nor was the school district guilty of religious discrimination. *Id.*

¹⁹⁶ 289 S.W. 363 (Tenn. 1927).

statute, which forbade the teaching of evolution in tax-supported schools that human beings evolved from lower forms of life.¹⁹⁸ This is the law under which John T. Scopes was indicted and convicted.

Though there was considerable fanfare at the *Scopes* trial, defense attorney Clarence Darrow actually asked the jury to find John Scopes guilty in order that the issue might be won at a higher court on appeal.¹⁹⁹

Scopes was found guilty and fined one-hundred dollars by the judge.²⁰⁰ At the state supreme court, the trial court was overturned,²⁰¹ not on the merit of the Butler law but on the grounds that the jury, not the judge should have ascertained the appropriate fine.²⁰² The court considered the Butler Act not to be in violation of either the state or Federal constitutions.²⁰³ The court took a narrow reading of the Fourteenth Amendment of the U.S. Constitution and the parallel section of the Tennessee constitution:

The statute before us is not an exercise of the police power of the state undertaking to regulate the conduct and contracts of individuals in their dealings with each other. On the other hand, it is an act of the state as a corporation, a proprietor, an employer. It is a declaration of a master as to the character of work the master's servant shall, or rather shall not, perform. In dealing with its own employees engaged

¹⁹⁷ See *supra* note 16. The act stated:

AN ACT prohibiting the teaching of the Evolution Theory in all the Universities, Normals and all other public schools of Tennessee, which are supported in whole or in part by the public school funds of the State, and to provide penalties for the violations thereof.

Section 1. *Be it enacted by the General Assembly of the State of Tennessee*, That it shall be unlawful for any teacher in any of the Universities, Normals and all other public schools of the State which are supported in whole or in part by the public school funds of the State, to teach any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals.

Section 2. *Be it further enacted*, That any teacher found guilty of the violation of this Act, Shall be guilty of a misdemeanor and upon conviction, shall be fined not less than One Hundred \$ (100.00) Dollars nor more than Five Hundred (\$ 500.00) Dollars for each offense.

Section 3. *Be it further enacted*, That this Act take effect from and after its passage, the public welfare requiring it.

H.B. 185, 64th Gen. Assem. (Tenn. 1925) (repealed 1967), available at <http://www.law.umkc.edu/faculty/projects/trials/scopes/tennstat.htm>. "In the five years following the Scopes Trial, state legislatures considered twenty anti-evolution bills and passed two into law." Cornelius, *supra* note 57, at 90; see also *supra* note 16.

¹⁹⁸ Cornelius, *supra* note 57, at 5.

¹⁹⁹ See *supra* note 44.

²⁰⁰ *Scopes*, 289 S.W. at 363 n.1

²⁰¹ *Id.* at 367.

²⁰² *Id.*

²⁰³ *Id.* at 364.

upon its own work, the state is not hampered by the limitations of section 8 of article 1 of the Tennessee Constitution, nor of the Fourteenth Amendment to the Constitution of the United States.²⁰⁴

The Tennessee Supreme Court chose not to concern itself with a violation of the Federal Constitution's First Amendment because the United States Supreme Court at that time had not incorporated the Establishment Clause of the First Amendment against the states. Consequently, there was no basis in Tennessee law to consider the legislative prohibition of evolution, on religious grounds, to be violation of the law. After the decision, little more was said about the *Scopes* decision, though it was not the last attempt by citizens to forbid evolution in the schools of Tennessee.²⁰⁵

B. Epperson v. Arkansas²⁰⁶ (1967)

The next major attempt to prevent the teaching of evolution was in the state of Arkansas. The state legislature passed a statute making it unlawful for a teacher in any state-supported school or university "to teach the theory or doctrine that mankind ascended or descended from a lower order of animals" or "to adopt or use in any such institution a textbook that teaches" this theory. The Arkansas statute contained some similarities, but also deliberate differences in language compared to the Butler Act.²⁰⁷ The statute provided for a minimal fine for the violation of

²⁰⁴ *Id.* at 364-65. Both of these constitutions essentially require that the state government shall not deprive any citizen of life, liberty, or property without "due process of law." U.S. CONST. amend. XIV, § 1.

²⁰⁵ See Francis *supra* note 24; *see also* discussion of the Tennessee Anti-evolution Act of 1973, *supra* note 60 and accompanying text.

²⁰⁶ 393 U.S. 97 (1968), *rev'd* State v. Epperson, 416 S.W. 2d 322 (Ark. 1967).

²⁰⁷ *See supra* note 197. The statute stated:

Doctrine of ascent or descent of man from lower order of animals prohibited.—It shall be unlawful for any teacher or other instructor in any University, College, Normal, Public School, or other institution of the State, which is supported in whole or in part from public funds derived by State and local taxation to teach the theory or doctrine that mankind ascended or descended from a lower order of animals and also it shall be unlawful for any teacher, textbook commission, or other authority exercising the power to select textbooks for above mentioned educational institutions to adopt or use in any such institution a textbook that teaches the doctrine or theory that mankind descended or ascended from a lower order of animals. . . Any teacher or other instructor or textbook commissioner who is found guilty of violation of this act by teaching the theory or doctrine mentioned in section 1 hereof, or by using, or adopting any such textbooks in any such educational institution shall be guilty of a misdemeanor and upon conviction shall be fined not exceeding five hundred dollars; and upon conviction shall vacate the position thus held in any educational institutions of the character above mentioned or any commission of which he may be a member.

the law, but required that the one who violated the law would be removed from the position that he occupied with the state.

In 1965, the Little Rock, Arkansas school system hired a young woman by the name of Susan Epperson, who had graduated from the University of Illinois with a master's degree in zoology, to teach tenth grade biology. At the beginning of the academic year, she was expected to use a textbook which was in violation of the statutory guidelines of the statue in question. Using the text would subject her to a fine and dismissal, so she instituted an action in the Chancery Court of the state, asking for a declaration that the Arkansas statute is void and to enjoin the state from dismissing her for violation of the statute.²⁰⁸

The Chancery Court invalidated the statute on the grounds that it infringed upon the First Amendment right of Free Speech.²⁰⁹ On appeal, the state supreme court reversed.²¹⁰ Using reasoning similar to the Tennessee Supreme Court in *Scopes*,²¹¹ the court held that "statutes pertaining to teaching of theory of evolution is constitutional exercise of state's powers to specify curriculum in public schools."²¹²

The United States Supreme Court reversed the Arkansas Supreme Court upon First and Fourteenth Amendment grounds.²¹³ Moreover, it chose not to deal with the matter of Free Exercise of Religion.²¹⁴ Setting

Initiated Act No. 1, ARK. CODE ANN. §§ 80-1627-28 (1929), quoted in *Epperson*, 393 U.S. at 99 n.3.

²⁰⁸ *Epperson*, 393 U.S. at 100. The opinion of the Chancery Court is not officially reported. See *id.* at 101 n.4.

²⁰⁹ Michael R. O'Neill, *Government's Denigration of Religion: Is God the Victim of Discrimination in Our Public Schools?*, 21 PEPP. L. REV. 477, 521 (1994).

²¹⁰ *Epperson*, 393 U.S. at 109.

²¹¹ See *Scopes*, 289 S.W. at 364-65; *supra* section III.A.

²¹² *State v. Epperson*, 416 S.W.2d 322, 322 (Ark. 1967), *rev'd* *Epperson v. Arkansas*, 393 U.S. 97 (1968).

²¹³ *Epperson*, 393 U.S. at 109. The Supreme Court noted that since no prosecutions had occurred in either Arkansas or Mississippi, the other state having such a law, see MISS. CODE ANN. §§ 6798, 6799 (1942), that the statute was more of a curiosity than "a vital fact of life in these states." *Epperson*, 393 U.S. at 102. The Court spoke of similar laws that had existed in other states:

The Tennessee law was repealed in 1967. Oklahoma enacted an anti-evolution law, but it was repealed in 1926. The Florida and Texas Legislatures, in the period between 1921 and 1929, adopted resolutions against teaching the doctrine of evolution. In all, during that period, bills to this effect were introduced in 20 States.

Id. (citing ACLU, THE GAG ON TEACHING 8 (2d ed. 1937)).

²¹⁴ Green elaborates on this:

The Court, however, chose to decide the case on the ground that the statute was an unconstitutional establishment of religion, and not on the ground that the First Amendment gives schools and teachers the right to teach evolution and students the right to learn about evolution. The most important sentence in *Epperson* is one that recognized the State's

aside an acknowledged vagueness in the statute,²¹⁵ the Court's decision rested on concerns for establishment of religion, rehearsing its Establishment Clause jurisprudence up to that time:²¹⁶

the law must be stricken because of its conflict with the constitutional prohibition of state laws respecting an establishment of religion or prohibiting the free exercise thereof. The overriding fact is that Arkansas' law selects from the body of knowledge a particular segment which it proscribes for the sole reason that it is deemed to conflict with a particular religious doctrine; that is, with a particular interpretation of the Book of Genesis by a particular religious group.²¹⁷

"undoubted right to prescribe the curriculum for its public schools," but asserted that this "does not carry with it the right to prohibit . . . the teaching of a scientific theory or doctrine where that prohibition is based upon reasons that violate the First Amendment [Establishment Clause]." Thus, it was clearly the religious purpose and not the ban on teaching evolution (i.e., science) that was perceived as violating the First Amendment.

Harold P. Green, *Constitutional Implications of Federal Restrictions on Scientific Research and Communication*, 60 UMKC L. REV. 619, 621 (1992).

²¹⁵ The Court stated:

At the outset, it is urged upon us that the challenged statute is vague and uncertain and therefore within the condemnation of the Due Process Clause of the Fourteenth Amendment. The contention that the Act is vague and uncertain is supported by language in the brief opinion of Arkansas' Supreme Court.

Epperson, 303 U.S. at 102.

The Court then admitted the vagueness but disavowed the reason for its decision: "In any event, we do not rest our decision upon the asserted vagueness of the statute . . . the law must be stricken because of its conflict with the constitutional prohibition of state laws respecting an establishment of religion or prohibiting the free exercise thereof." *Id.* at 103.

²¹⁶ *Id.* at 103-07.

²¹⁷ *Id.* at 103. The Court identified this religious group later in the opinion: "It is clear that fundamentalist sectarian conviction was and is the law's reason for existence." *Id.* 107-08. Repeatedly, as here, the courts mention "fundamentalists" as seeking to enforce their view of religion on the body politic. The *Epperson* opinion characteristically averred, "It is clear that fundamentalist sectarian conviction was and is the law's reason for existence." *Id.* The Court then quoted an advertisement used by some sectarian group as proof. *Id.* at 108 n.16. Would the Court be as concerned in limiting the imposition of Secularists as it is Fundamentalists to avoid advancing, in the words of Justice Clark, a "religion of secularism"? *Sch. Dist. of Abington Township v. Schempp*, 374 U.S. 203, 225 (1963). Serious doubt attaches to the answer. Mary Harter Mitchell echoes this concern and the difficulty of conservative religious persons to get a hearing on their issues in the courts:

Presumably, then, a state also may not constitutionally prohibit parts of a public school's curriculum if the purpose of the removal is to appease Secularists or to avoid conflict with their beliefs. Although many critics of public schools seem convinced that educators and lawmakers are predominantly Secularists and that there is a conspiracy by Secularists to gain control of public education and oust traditional religions, such

In making this determination of the religious nature of the statute, the Court offered no proof other than indicating that the law was similar to the Tennessee law.²¹⁸ This is hardly a reassuring analysis from the Court. It never defined what it meant by "religion"²¹⁹ and never said what would make the law "secular."²²⁰ Moreover, in evaluating the Establishment Clause violation,²²¹ the Court seemed to question the sincerity of the Arkansas legislature's purpose in passing the law, suggesting that the legislators sought to slip in the Biblical account, as did Tennessee, but learning from that situation, disguised their intentions:

Its antecedent, Tennessee's "monkey law," candidly stated its purpose: to make it unlawful "to teach any theory that denies the story of Divine creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals." Perhaps the sensational publicity attendant upon the Scopes trial induced Arkansas to adopt less explicit language. It eliminated Tennessee's reference to the "story of the Divine Creation of man" as taught in the Bible, but there is no doubt that the motivation for the law was the same: to suppress the teaching of a theory which, it was thought, "denied" the divine creation of man.²²²

accusations have proven difficult to support and to link with specific aspects of a curriculum.

Mary Harter Mitchell, *Secularism in Public Education: The Constitutional Issues*, 67 B.U. L. REV. 603, 677 (1987).

²¹⁸ Ned Fuller, *The Alienation of Americans from Their Public Schools*, 1994 B.Y.U. EDUC. & L.J. 87, 96.

²¹⁹ For a discussion of the problem of defining religion, see House, *supra* note 65, at 252-55.

²²⁰ Regarding the use of the *Lemon* test in Establishment Clause analysis, Fuller says, "Two primary problems exist with the Court's application of the *Lemon* test: 1) the Court assumes that a 'secular' purpose is nonreligious without defining secularism, and 2) the Court assumes that an advancement, inhibition or entanglement with religion necessarily establishes religion." Fuller, *supra* note 218, at 96.

²²¹ This case is before the full development of what is known as the *Lemon* test. *Lemon v. Kurtzman*, 403 U.S. 602 (1971), declared a three-prong test to govern establishment clause jurisprudence. For a law to pass constitutional muster: 1) it must have a secular purpose; 2) its primary effect must be secular; and 3) it must not involve entanglement of government and religion. *Id.* at 612-13. Before *Lemon*, the Court had introduced the first two prongs of purpose and effect. See *Engel v. Vitale*, 370 U.S. 421 (1962). Recent days have seen the demise of the *Lemon* test in many instances. See House, *supra* note 65, at 270-88.

²²² *Epperson*, 303 U.S. at 108-09. The Court's statements are confusing in light of its own acknowledgement that a court cannot inquire into a legislature's motives: "It is not for the court to invalidate a statute because of the court's belief that the 'motives' behind its passage were improper; it is simply too difficult to determine what those motives were." *Id.* at 113. The Court also in *Edwards v. Aguillard*, 482 U.S. 578 (1987), doubted the honesty of the legislature in their stated purpose. See *infra* section III.D. Geisler provides discussion of the relevant facts regarding legislative intent:

The invalidation of the statute based on a lack of secular purpose is puzzling in the instant case. First, the idea of legislative intent, purpose, or motive are terms difficult to define by the Court,²²³ and in fact the Court has failed to do so.²²⁴ Revealingly, John Hart Ely has observed, "The Court should stop pretending it does not remember principles for deciding on what occasions and in what ways the motivation of legislators or other government officials is relevant to constitutional issues."²²⁵

In contrast to this unfounded action on the part of the Court is the case of *Treen v. Karen B.*²²⁶ This case concerned a Louisiana statute which provided for daily prayer in the public schools. The court, in striking down the statute, indicated that the personal testimony of the individual proponents of a statute, which is given in court after enactment of a statute, is "far less persuasive than the intent embodied in the statute, since [the personal testimony] reflects only the partial perspective of those legislators, and not the collective intention of the entire body."²²⁷

Secondly, the courts have inconsistently applied a purpose standard, probably due to the inadequacy of defining purpose. For example:

A recent Eighth Circuit case suggests a more hybrid test. The court of appeals held that a public school rule that prohibited school sponsored dances and dancing on school premises did not violate the establishment clause. The evidence of religious purpose was abundant. Several local churches had doctrinal stances against dancing, and these groups organized to vigorously support the rule when students challenged it. Nevertheless, the court upheld the rule.²²⁸

It is a well-established known principle of statutory construction that courts will refuse to consider testimony by members of a legislative body to prove legislative intent. A corollary principle also uniformly rejects any reference to the motive of a member of a legislature in enacting a law, except as these motives are expressed in the statute itself.

NORMAN L. GEISLER, THE CREATOR IN THE COURTROOM, "SCOPES II": THE 1981 ARKANSAS CREATION-EVOLUTION TRIAL 49 (1982) (citations omitted).

²²³ Daniel Yves Hall, *Stripping Away First Amendment Protection*, 57 MO. L. REV. 629, 653 n.225 (1992); see also Morell E. Mullins, *Creation Science and McLean v. Arkansas Board of Education: The Hazards of Judicial Inquiry into Legislative Purpose and Motive*, 5 U. ARK. LITTLE ROCK L.J. 345 (1982).

²²⁴ Hall, *supra* note 226, at 653 n.223.

²²⁵ John Hart Ely, *Legislative and Administrative Motive in Constitutional Law*, 79 YALE L.J. 1205, 1211-12 (1970).

²²⁶ 455 U.S. 913 (1982) (mem.).

²²⁷ *Karen B. v. Treen*, 653 F.2d 897, 901 (5th Cir. 1981), aff'd, 455 U.S. 913 (1982) (mem.).

²²⁸ Culbertson, *supra* note 195, at 936 n.201 (citations omitted).

Thirdly, if the courts truly employed such a standard consistently, religious citizens would be disenfranchised from the body politic, as Hal Culbertson illustrates:

Motivation analysis could be used to invalidate a wide variety of laws under the establishment clause. Although religion is largely ignored by political scientists, studies indicate that religion frequently plays a major role in the political process. Religious persons frequently vote as a block on referenda. *Epperson* suggests that these referenda therefore might violate the establishment clause. Furthermore, religious groups have played a key role in conservative and liberal legislation, such as prohibition, civil rights, and welfare legislation. The Court's analysis in *McGowan* and *Edwards* suggests that the activity of these religious groups may have invalidated the resulting legislation.²²⁹

This failure to accept legislative intent is uncharacteristic of the Court.²³⁰ The Supreme Court has more regularly inquired into legislative motivation or intent in order to determine the matter of validity under the Establishment Clause. Only a few cases have relied exclusively on the purpose test to invalidate a law, nonetheless one may discern the Court's attitude toward religious participation in the political process through its increasingly frequent use of this test.²³¹ However, the secular purpose test is severely flawed.

The Court was concerned that the legislation in question caused the state of Arkansas to fail to maintain religious neutrality in its administration of the law and thus contravened the Constitution: “[Government] may not be hostile to any religion or to the advocacy of no-religion; and it may not aid, foster, or promote one religion or religious theory against another The First Amendment mandates governmental neutrality between religion and religion, and between religion and nonreligion.”²³² The Court felt that requiring teaching and learning “which is tailored to the principles or prohibitions of any religious sect or dogma” would violate this neutrality.²³³

Interestingly, the Court apparently would have considered the state’s act neutral if it had excised all discussion of the origin of man:

²²⁹ *Id.* at 936-37.

²³⁰ For discussion of legislative purpose or intent, see LAURENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW § 12-6 (2d ed. 1988); and for a discussion of secular purpose, see *id.* § 1-7, at 12 n.7.

²³¹ Culbertson, *supra* note 195, at 916. Some commentators have expressed the view that *Epperson* could also have been decided on secular effects grounds, *see id.* at 935, but others, such as Jesse Choper, think differently, believing that *Epperson* was wrongly decided because the effects of the statute were valid. Jesse Choper, *The Religion Clauses of the First Amendment: Reconciling the Conflict*, 41 U. PITL. L. REV. 673, 687 (1980).

²³² *Epperson*, 393 U.S. at 104.

²³³ *Id.* at 106.

Arkansas' law cannot be defended as an act of religious neutrality. Arkansas did not seek to excise from the curricula of its schools and universities all discussion of the origin of man. The law's effort was confined to an attempt to blot out a particular theory because of its supposed conflict with the Biblical account, literally read.²³⁴

C. McLean v. Arkansas Board of Education²³⁵ (1982)

In 1982, a federal district court judge²³⁶ ruled that a statute²³⁷ mandating "balanced treatment" of evolution and creation violated the Establishment Clause of the United States Constitution, made applicable to the states by the Fourteenth Amendment.²³⁸ The plaintiffs challenged this law on three grounds. First, they argued that Act 590 constituted an establishment of religion under the First Amendment to

²³⁴ *Id.* at 109.

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

²³⁶ Circumstances regarding the district judge are unique to other cases regarding disputes over creation and evolution in the public schools. Judge Overton's previous legal practice had been in insurance claims, and had little experience in First Amendment matters. Geisler evaluates the judge as being biased against creationism, though not necessarily bigoted against creationism. He offers several proofs of his assessment:

- 1) The judge was a theologically liberal Methodist who did not believe in creationism as defined by Act 590.
- 2) The judge is the son of an evolutionary biology teacher who attended every session of the trial.
- 3) The judge's theologically liberal Methodist Bishop was the first witness against teaching creationism. [Geisler quotes a letter in the Arkansas Democrat decrying this bias and suggesting that if the judge were a fundamentalist Christian, the ACLU would scream partiality].
- 4) The judge manifested bias against creationism by several outbursts of personal opinion during the trial. [Once, the judge chided a high school science teacher. The record reads the judge as saying "it's not Sunday School. You're trying to teach about science."].
- 5) The judge denied a motion by the defense which would have eliminated irrelevant religious opinions being included in the record (and thus reported by the press).
- 6) Before the trial the judge said he would rule from the bench (as though his mind was made up), but later reversed course when he was criticized by witnesses and citizens as being biased.
- 7) Despite nearly a week of testimony from numerous Ph.D.'s in science (some of whom were evolutionists) insisting that creation is as scientific as evolution and is not based on the Bible, the judge still referred to *scientific* creationism as "the *biblical* view of creation."
- 8) The judge's decision reveals an absolutistic naturalistic bias.

GEISLER, *supra* note 222, at 24-25.

²³⁷ Act 590 required that "public schools within this State shall give balanced treatment to creation-science and to evolution-science." ARK. CODE ANN. § 80-1663 (1981 Supp.); see also Clifford P. Hooker, *Creation Science Has No Legitimate Educational Purpose*: *McLean v. the Arkansas Board of Education*, 1 EDUC. L. REP. 1069 (1982).

²³⁸ *McLean*, 529 F. Supp. at 1257.

the U.S. Constitution. Second, the plaintiffs contended that the Act violated academic freedom guaranteed by the Free Speech Clause of the First Amendment. Last, they said that the Act was impermissibly vague and consequently violated of the Due Process Clause of the Fourteenth Amendment.²³⁹

The court proclaimed that the attempt to have creation taught in the schools has been the effort of religious fundamentalists, due to their belief in the inerrancy of Scripture and literal interpretation.²⁴⁰ Judge William Overton evaluated the case solely by the legal standard set forth in *Lemon*. He said, "First, the statute must have a secular legislative purpose; second, its principal or primary effect must be one that neither advances nor inhibits religion. . . ; finally, the statute must not foster 'an excessive government entanglement with religion.'"²⁴¹ The judge held that the statute violated the First Amendment prohibition against establishment of religion because where the statute was simply and purely an effort to introduce the Biblical version of creation into the public school curriculum and thus its specific purpose was to advance religion, the fact that creation science was inspired by the Book of Genesis and that statutory definition of creation science was consistent with a literal interpretation of Genesis, left no doubt that primary effect of the statute was the advancement of particular religious beliefs. Thus, continuing involvement of state officials in questions and issues revolving around creation science created an excessive and prohibited entanglement with religion.²⁴²

The judge in *McLean*, unlike *Scopes*, was very proactive in the case, demonstrating bias at trial for the plaintiff. In the opinion, and in the trial,²⁴³ the judge went to considerable effort to demonstrate that "creation-science" was not, in fact, science. In so doing he made several prejudicial comments.²⁴⁴ One of the plaintiffs was the Arkansas Bishops of the United Methodist Church²⁴⁵ and the judge's own bishop testified

²³⁹ *Id.*; see also Hooker, *supra* note 237, at 1070.

²⁴⁰ *McLean*, 529 F. Supp. at 1258-59. The judge sets forth (incorrectly) the fundamentals as stated by Geisler. Compare *id.* at 1259 with GEISLER, *supra* note 222, at 27 (correcting of the testimony and clarification of the judge's statements on the fundamentals). Also Geisler offers a number of corrections here to factual and logical errors made by the judge in his opinion. GEISLER, *supra* note 222, at 26-32.

²⁴¹ *McLean*, 529 F. Supp. at 1258.

²⁴² *Id.* at 1266.

²⁴³ See the various attempts during the trial to impose a particular view, including on the witnesses, in GEISLER, *supra* note 222, at 24-25.

²⁴⁴ See GEISLER, *supra* note 222, at 25.

²⁴⁵ 529 F. Supp. at 1257.

for the plaintiffs,²⁴⁶ a fact that would cause many judges to disqualify themselves.

The media treated the *McLean* case similar to what was seen at *Scopes*.²⁴⁷ The trial was highly publicized but mischaracterized.²⁴⁸ The

²⁴⁶ *The Arkansas Creation Trial*, DALLAS TODAY 7 (c. 1982) (radio broadcast transcript) (on file with author).

²⁴⁷ Geisler, a defense expert in the trial, gives a personal account:

I would say that the media almost totally distorted what really went on there and here's how they did it. First, they quoted irrelevant things rather than essential things. Second, they used headlines which tended to color everything else that was said. Even if some things were accurately said in the story, the headlines colored it. Third, some particular newspapers created their own stories. They reported things that didn't occur at all. Fourth, they really took things out of the context in which they were presented. Basically they wrote their own stories using a few facts here and there that they got from the trial.

The Arkansas Creation Trial, *supra* note 246, at 5. For a more thorough account by Geisler, see GEISLER, *supra* 222. For an example of how the media dealt with the testimony of Geisler, one should compare the account of Geisler's forced testimony on UFOs by the plaintiff attorney. In the midst of the testimony, in which Geisler was asked his views on UFOs, irrelevant to the case at hand, Geisler mentioned that many scientists believed in UFOs:

Q: And is it your professional opinion that UFOs exist?

A: My professional opinion that the Bible is true and the Bible teaches such phenomena exist in the world, and I would identify the UFO as one of those phenomena, and I would draw your attention to the fact that credible scientists such as Carl Sagan believes [sic] in extraterrestrial intelligence with not nearly as much evidence and that people believe in parapsychology on the same kind of basis, and I would identify on the basis of a "Science Digest" article, 1981 which says that scientists have observed UFOs, that many scientists themselves have confirmed it, and Dr. Heinich of Northwest University and University in Chicago area has, and on the basis of that evidence and the Biblical model, I think that confirms what I understand by Satanic deception.

Partial Transcript of Proceedings Before the Hon. William R. Overton, Transcript of Testimony of Norman L. Geisler, *McLean* vs. Bd. of Educ., No. LR-C-81-322 (E.D. Ark, Dec. 11, 1981). Rather than giving "Science Digest" as the source for Geisler's thinking, the New York Times reported it as "Reader's Digest." Geisler's testimony received derision. Evolutionist Robert Pinnock says, without checking the accuracy of his source, regarding Geisler's testimony,

UFOs, he declared under oath, are "Satanic manifestations for the purposes of deception" and "represent the Devil's major, in fact, final, attack on the earth." At that time, however, he offered more direct proof of their existence than the complexity of DNA. When asked by the prosecuting attorney how he knew that UFOs existed, he said their existence was confirmed by an article he had read in *The Reader's Digest*.

PENNOCK, *supra* note 20, at 252.

²⁴⁸ Geisler gives several of the misconceptions about Act 590:

1. It mandates teaching the biblical account of creation (it actually forbids that).
2. It is opposed to teaching evolution (it actually mandates teaching evolution alongside of creation).

state of Arkansas was at a considerable disadvantage since the ACLU had twenty-two lawyers working full-time on the case, while the state had only six.²⁴⁹

Though *McLean* is only a federal district decision, it has had considerable impact because it was the first time that a federal court had ruled that any mention of creation was ipso facto "religious teaching" in violation of the First Amendment, with the decision essentially resting on a legal definition for science that enshrined naturalism as a necessary component of science.²⁵⁰ Judge Overton concluded that a sudden creation of the universe²⁵¹ out of nothing²⁵² was "inescapable religiosity"²⁵³ and such

3. It refers to God or religious concepts (there is no reference to God and it forbids teaching religion).

4. It forces teachers who are opposed to creation to teach it anyway (actually, the teacher doesn't have to teach anything about origins and/or they can have someone else teach the lectures they do not want to teach).

5. It is a "Fundamentalist" Act. (Actually, the "Fundamentalists" of the 1920's were categorically opposed to teaching evolution and for teaching only the Genesis account of creation. This Act is contrary to both of these stands of the 1920's "Fundamentalists.").

GEISLER, *supra* note 222, at 19.

²⁴⁹ *The Arkansas Creation Trial*, *supra* note 246, at 2.

²⁵⁰ David K. DeWolf writes:

Although this case was in some ways superseded by the subsequent ruling of the United States Supreme Court in *Edwards v. Aguillard* . . . the *McLean* case, and the philosophy of science that underwrites it, pose an implied challenge to the scientific status of all theories of origins (including design theory) that invoke singular, intelligent causes as opposed to strictly material causes.

DAVID K. DEWOLF, STEPHEN C. MEYER, & MARK E. DEFORREST, INTELLIGENT DESIGN IN PUBLIC SCHOOL SCIENCE CURRICULA: A LEGAL GUIDEBOOK 10 (1999) [hereinafter DEWOLF ET AL].

²⁵¹ Evolutionist theologian Father Dr. William G. Most argues against such an understanding:

My professional opinion is that creation-science is not religious. It appears to me to be scientific.

....

The concept of creation is not inherently religious and is non-religious when defined as abrupt appearance in complex form. The concept of a creator is also not inherently religious, although it can be stated in religious terms; and it is not religious in its relation to creation-science. Creation-science is no more supportive of religious concepts of a creator or other religious doctrines than evolution is in its theistic evolutionist formulations.

Affidavit of William G. Most at 2, *Edwards v. Aguillard*, 482 U.S. 510 (1987), quoted in 2 BIRD, *supra* note 53, at 447.

²⁵² Responding to the assertion of Judge Overton that creation from nothing requires a supernatural deity, comes the comment of cosmologist and atheist Frank Tipler:

The sections of the opinion on cosmology make amusing reading for cosmologists. The 1981 Arkansas equal time law defined "creation-science"

a creation required a supernatural deity as found in Western religions.²⁵⁴ He was unconvinced by Norman Geisler's argument that acknowledgement of the existence of God is not religious unless the teaching seeks a commitment.²⁵⁵ The judge then provided what he considered to be the essential characteristics of science: "1) It is guided by natural law; 2) It has to be explanatory by reference to natural law; 3) It is testable against the empirical world; 4) Its conclusions are tentative, i.e., are not necessarily the final word; and 5) It is falsifiable. (Ruse and other science witnesses).²⁵⁶

Judge Overton's perspective that belief in a creator and sudden creation out of nothing necessarily entails religion falls far short of reasonable evidence. First, the legal definition of religion requires ultimate commitment,²⁵⁷ rather than merely intellectual acceptance of a deity.²⁵⁸ Second, if a religious source for scientific theories were rendered untenable, then many of the great scientific discoveries would be as much in violation of the First Amendment as creation science.²⁵⁹ Third, the definition given by the judge fails to agree with the understanding of science in contemporary philosophy of science literature:

The *McLean* definition does not resemble, or come close to resembling, any definition of science existing in the philosophy of science literature, and has not been endorsed subsequently by any philosopher of science, except by certain courtroom witnesses from the *McLean*

as "science" that involved, among other things, "Sudden creation of the universe, energy, and life from nothing." The judge thought such an idea inherently unscientific

....

The problem with this is that . . . the standard big bang theory has the Universe coming into existence out of nothing, and cosmologists use the phrase "creation of the universe" to describe this phenomenon. Thus if we accepted Judge Overton's idea that creation out of nothing is inherently religious, and his ruling that inherently religious ideas cannot be taught in public educational institutions, it would be illegal to teach the big bang theory at state universities. . . .

Frank J. Tipler, *How to Construct a Falsifiable Theory in Which the Universe Came into Being Several Thousand Years Ago*, 2 PHIL. OF SCI. ASS'N 873, 893-94 (1984), quoted in 2 BIRD, *supra* note 53, at 464 (citation omitted).

²⁵⁴ *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255, 1265 (E.D. Ark. 1982).

²⁵⁵ *Id.*

²⁵⁶ *Id.* at 1266. For a thorough treatment of this position, see GEISLER, *supra* note 225, at 114-18.

²⁵⁷ *McLean*, 529 F. Supp. at 1267.

²⁵⁸ *Seeger v. United States*, 380 U.S. 163, 176, 187 (1964).

²⁵⁹ If mention of a deity were a necessary infringement on the First Amendment Establishment Clause, then a great number of the documents of this republic and acts of government would be in violation of the clause. See 2 BIRD, *supra* note 53, at 435-41.

²⁶⁰ See GEISLER, *supra* note 222, at 116-17.

trial. The witness on whose testimony the judge's opinion was based, [Michael] Ruse, later revised his points and offered a six-point list of "major characteristics."²⁶⁰

Philosopher of science, Larry Laudan says regarding the definition of science in *McLean*:

Once the dust has settled, however, the trial in general and Judge William R. Overton's ruling in particular may come back to haunt us; for, although the verdict itself is probably to be commended, it was reached for all the wrong reasons and by a chain of argument which is hopelessly suspect. Indeed, the ruling rests on a host of misrepresentations of what science is and how it works.

The heart of Judge Overton's Opinion is a formulation of "the essential characteristics of science." These characteristics serve as touchstones for contrasting evolutionary theory with Creationism; they lead Judge Overton ultimately to the claim, specious in its own right, that since Creationism is not "science," it must be religion.

....

The victory in the Arkansas case was hollow, for it was achieved only at the expense of perpetuating and canonizing a false stereotype of what science is and how it works. If it goes unchallenged by the scientific community, it will raise grave doubts about that community's intellectual integrity. No one familiar with the issues can really believe that anything important was settled through anachronistic efforts to revive a variety of discredited criteria for distinguishing between the scientific and the nonscientific.²⁶¹

²⁶⁰ 2 BIRD, *supra* note 52, at 21. Bird subsequent to the above comment, provides considerable evidence that Overton's definition is fallacious. *Id.* at 20-78. Philosopher of science Philip Quinn says of Ruse's definition in *McLean*:

If the expert's views are not representative of a settled consensus of opinion in the relevant community of scholars, then policy based on those views will lack credibility within that community, and the members of that community are likely to regard such lack of credibility as discrediting the policy in question. This was the major problem in *McLean v. Arkansas*. Ruse's views do not represent a settled consensus of opinion among philosophers of science. Worse still, some of them are clearly false and some are based on obviously fallacious arguments. . . .

Philip Quinn, *The Philosopher of Science as Expert Witness*, in SCIENCE AND REALITY: RECENT WORK IN THE PHILOSOPHY OF SCIENCE 32, 51 (J. Cushing, et. Al. eds., 1984), quoted in 2 BIRD, *supra* note 53, at 23. See the additional arguments regarding modern scientific perspectives on demarcation of what is science and what is not in DEWOLF ET AL., *supra* note 250, at 11-15.

²⁶¹ Larry Laudan, *Commentary: Science at the Bar— Causes for Concern*, SCI., TECH. & HUM. VALUES, Fall 1982, at 16, 19.

Laudan believes the five criteria proffered by Judge Overton are specious.²⁶² Philip Quinn agrees with Laudan regarding the criteria of science advanced by Judge Overton:

Unfortunately, it is all too clear that it is unsound. The problem is that [the *McLean* definition] is demonstrably false. None of the characteristics it alleges to be necessary conditions for an individual statement to have scientific status is, in fact, a necessary condition of scientific status of an individual statement.²⁶³

It appears that the seemingly final conclusion of the court in *McLean* has established a view of science and religion which is built on the sand and will necessarily need to be reviewed again.

D. Edwards v. Aguillard²⁶⁴ (1987)

Edwards v. Aguillard is the primary case in which the United States Supreme Court has spoken directly to the issue of the teaching of a view of creation alongside evolution.²⁶⁵ The case originated in the

²⁶² *Id.* ("[*McLean*] offered five 'essential characteristics of science.' I have shown that there are respectable examples of science which violate each of Overton's desiderata, and moreover that there are many activities we do not regard as science which satisfy many of them.").

²⁶³ Quinn, *supra* note 260, at 42, quoted in 2 BIRD, *supra* note 53, at 23.

²⁶⁴ 482 U.S. 578 (1987).

²⁶⁵ DEWOLF ET AL., *supra* note 250, at 20. See the following for commentaries on *Edwards*: Frances Moran Bouillion, *Louisiana Constitution, Article VIII: Education*, 46 LA. L. REV. 1137 (1986); John Devlin, *Louisiana Constitutional Law*, 49 LA. L. REV. 395 (1988); John DiGiulio & David A. Hamilton, *Aguillard v. Treen: Creation Statute Violates Louisiana Constitution*, 8 EDUC. L. REP. 223 (1983); N.S. Fletcher, *Edwards v. Aguillard: Constitutional Law—The Evolution of Secular Purpose in Establishment Clause Jurisprudence*, 62 TUL. L. REV. 261 (1987); Laurie Barcelona Halpern, *Edwards v. Aguillard: The Supreme Court Evaluates the Sincerity of the Louisiana Legislature*, 34 LOY. L. REV. 406 (1988); Kira Anne Larson, Note, *Constitutional law—The Louisiana Balanced Treatment Act, Which Forbids Teaching the Theory of Evolution in Public Elementary and Secondary Schools Unless It is Accompanied by Instruction in the Theory of Creation Science, Violates the Establishment Clause of the First Amendment to the United States Constitution—Edwards v. Aguillard*, 107 S.Ct. 5273 (1987), 37 DRAKE L. REV. 753 (1987-88); Van Foreman McClellan, Comment, *Edwards v. Aguillard: The Creationist-Evolutionist Battle Continues*, 13 OKLA. CITY U. L. REV. 631 (1988); Juliana S. Moore, *The Edwards Decision: The End of Creationism in Our Public Schools?*, 21 AKRON L. REV. 255 (1987); Kenneth Paul Nuger, *The U.S. Supreme Court Applies the Lemon Test to Louisiana's Balanced Treatment Act*, 46 EDUC. L. REP. 1 (1988); Sherri Schaeffer, Note, *Edwards v. Aguillard: Creation Science and Evolution—The Fall of Balanced Treatment Acts in the Public Schools*, 25 SAN DIEGO L. REV. 829 (1988); *Teaching Creationism—Louisiana's Balanced Treatment Act*, 101 HARV. L. REV. 189 (1987); Sharon Williams, Note, *Establishment Clause: Edwards v. Aguillard. The United States Supreme Court Denies Equal Time for Scientific Creationism in the Public Schools—'Scopes-in-Reverse'?*, 56 UMKC L. REV. 603 (1988).

legislature of Louisiana. The legislature passed a creation statute²⁶⁶ similar to the one in Arkansas and a number of other states.²⁶⁷ However, since the case has been dealt with thoroughly elsewhere,²⁶⁸ for our purposes it suffices to point out that even though the Louisiana statute was found to have an unconstitutional religious purpose, in actuality, the ruling of the Court in *Edwards* is a less restrictive one than the *McLean* decision. Substantial optimism exists among those in the creation science movement that *Edwards* will be overturned,²⁶⁹ due to the aging of the justices, the dissent of the Fifth Circuit, and the strong support for a balanced approach among lawyers.²⁷⁰

Is the optimism justified by the reasoning of the majority opinion of the Supreme Court? This author believes it is. Though I do not believe the Court was required to find a constitutional violation on the facts presented in the case, it is my opinion that under different facts, the Supreme Court should hold differently.

The majority in *Edwards* found the statute in violation of the Establishment Clause, but under *Lemon's* first prong of a primary secular purpose,²⁷¹ it did not hold that creation is inherently religious. It

²⁶⁶ For a thorough interaction with, and record of, the statute see the majority opinion in *Aguillard v. Treen*, 440 So. 2d 704 (La. 1983).

²⁶⁷ See *supra* notes 77-82.

²⁶⁸ See David K. DeWolf, *Academic Freedom After Edwards*, 13 REGENT U. L. REV. 447 (2001); *supra* note 265.

²⁶⁹ Almost as soon as the decision was announced, the Creation Science Legal Defense Fund sent a letter to its constituents saying:

The U.S. Supreme Court today held that Louisiana's "Act for Balanced Treatment of Creation-Science and Evolution" is unconstitutional because it had an unconstitutional *legislative purpose*. "The Act violates the Establishment Clause of the First Amendment because it seeks to employ the symbolic and financial support of government to achieve a religious purpose."

However, the Court ruling was narrow and did *not* say that teaching creation-science is *necessarily* unconstitutional if adopted for a secular purpose. In fact, the Court said the exact opposite:

"[T]eaching a variety of scientific theories about the origins of humankind to schoolchildren might be validly done with the clear secular intent of enhancing the effectiveness of science instruction."

Letter from Creation Science Legal Defense Fund to Constituents (June 19, 1987) (on file with author) (citations omitted) [hereinafter CSLDF Letter]. The letter continues with an assessment by Wendell Bird, who argued the case before the Supreme Court: "[W]e are disappointed that the Supreme Court majority struck down the Louisiana law for an allegedly non-secular purpose, but delighted that it did *not* say that balanced treatment for creation-science and evolution necessarily advances religion with an impermissible purpose." *Id.*

²⁷⁰ American Bar Association National Poll (Jan. 1, 1987), cited in CSLDF Letter, *supra* note 269. See the in-depth discussion of the *Edwards* case and the rationale for the Court's ruling as not disallowing teaching of creation-science in the public schools in 2 BIRD, *supra* note 53, at 433-61.

²⁷¹ See *supra* note 145 for the three prongs of the *Lemon* test.

expressly stated that teachers may present other scientific theories besides evolution: "[T]eaching a variety of scientific theories about the origins of humankind to schoolchildren might be validly done with the clear secular intent of enhancing the effectiveness of science instruction."²⁷² Even the ACLU's Nadine Strossen acknowledges that creation could be presented as a valid scientific alternative to evolution: "Absent the statute, nothing would have prevented any school teacher who so chose from discussing any scientific shortcomings in evolutionary theory or any scientific evidence supporting a different theory of origins, including a creation theory."²⁷³

E. Some Federal Circuit Court Cases

Since *Edwards*²⁷⁴ there have been several cases that have arisen in the federal appellate system. An examination of these cases reveals that the state of the law in this matter is deeply entrenched against allowance of any form of creationism within the school system and it disallows the notion that evolution promotes religious ideology.

1. *Mozert v. Hawkins County Board of Education*²⁷⁵ (1987)

In *Mozert*, approximately ten years after *Daniel v. Waters*,²⁷⁶ students and their parents brought an action seeking injunctive relief

²⁷² *Edwards*, 482 U.S. at 594.

²⁷³ Nadine Strossen, "Secular Humanism" and "Scientific Creationism": Proposed Standards for Reviewing Curricular Decisions Affecting Students' Religious Freedom, 47 OHIO ST. L.J. 333, 403-04 (1986).

²⁷⁴ See *supra* section III.D.

²⁷⁵ 827 F.2d 1058 (6th Cir. 1987). For a discussion of the *Mozert* case, see Hugh J. Breyer, *Cinderella, The Horse God and The Wizard of Oz: Mozert v. Hawkins County Public Schools*, 20 J. L. & EDUC. 63 (1991); James C. Harkins IV, Note, *Of Textbooks and Tenets: Mozert v. Hawkins County Board of Education and the Free Exercise of Religion*, 37 AM. U. L. REV. 985 (1988); Keith Kemper, Note, *Freedom of Religion vs. Public School Reading Curriculum*, 12 U. PUGET SOUND L. REV. 405 (1989); Craig A. Mason, Note, "Secular Humanism" and the Definition of Religion: Extending a Modified "Ultimate Concern" Test to *Mozert v. Hawkins County Public Schools* and *Smith v. Board of School Commissioners*, 63 WASH. L. REV. 445 (1988); Martha M. Michael, Comment, *Free Exercise of Religion Within the Public School? Mozert v. Hawkins County Board of Education*, 3 NOTRE DAME J.L. ETHICS & PUB. POL'Y 496 (1988); Richard S. Myers, *Curriculum in the Public Schools: The Need for an Emphasis on Parental Control*, 24 VAL. U. L. REV. 431 (1990); Roald Mykkeltvedt, *Tension Between the Religion Clauses of the First Amendment: Mozert v. Hawkins County Public Schools*, 56 TENN. L. REV. 693 (1989); Keith Waldman, *Appealing to a Higher Law: Conservative Christian Legal Action Groups Bring Suit to Challenge Public School Curricula and Reading Materials*, 18 RUTGERS L.J. 437 (1987).

²⁷⁶ 515 F.2d 485 (6th Cir. 1975) (invalidating a Tennessee balanced treatment education statute on the grounds that it violated the Establishment Clause of the First Amendment). See Francis, *supra* note 24, for analysis of the various Tennessee creation-evolution cases.

and money damages for an alleged violation of their First Amendment right to free exercise of religion.²⁷⁷ The claim was based on the exposure of the children to objectionable ideas found in the course textbooks, among them²⁷⁸ the theory of evolution. At first the children had been allowed to read their assignments from older textbooks not containing objectionable material,²⁷⁹ but then, in November 1983, the Hawkins County School Board voted to require all students to use the newer textbooks. The plaintiffs promptly filed suit alleging that the school board was "forcing the student-plaintiffs to read school books which teach or inculcate values in violation of their religious beliefs and convictions" which was "a clear violation of their rights to the free exercise of religion protected by the First and Fourteenth Amendments to the United States Constitution."²⁸⁰ Even though the textbooks did contain a disclaimer that evolution was a theory, not a proven scientific fact,²⁸¹ the plaintiffs believed that the widespread use of evolution belied that statement.²⁸²

The district court held that the plaintiffs' First Amendment rights had been violated because the school board "has effectively required that the student plaintiffs either read the offensive texts or give up their free public education."²⁸³ Upon appeal by the school board, the Sixth Circuit held that requiring the students to read the texts did not burden their rights of Free Exercise and noted that the only way to avoid the conflict would be to eliminate all references to the objectionable topics.²⁸⁴ The court, citing *Epperson*, observed that "the Supreme Court has clearly held that it violates the Establishment Clause to tailor a public school's curriculum to satisfy the principles or prohibitions of any religion."²⁸⁵ Though the plaintiffs may be offended by certain readings in the textbooks, no evidence was presented that the students were "ever required to affirm his or her belief or disbelief in any idea or practice mentioned in the various stories and passages contained in the Holt series."²⁸⁶

²⁷⁷ *Mozert*, 827 F.2d at 1058.

²⁷⁸ Other concerns expressed were the subjects of mental telepathy, *id.* at 1060, secular humanism, "futuristic supernaturalism," pacifism, and false views of death. *Id.* at 1062.

²⁷⁹ *Id.* at 1060.

²⁸⁰ *Id.* at 1061.

²⁸¹ *Id.* at 1062.

²⁸² *Id.*

²⁸³ *Id.* (citation omitted).

²⁸⁴ *Id.* at 1073.

²⁸⁵ *Id.* (citation omitted) (quoting *Epperson v. Arkansas*, 393 U.S. 97, 106 (1968)).

²⁸⁶ *Id.* at 1064 (citation omitted).

Through rehearsal of case law,²⁸⁷ the court distinguished “exposure” to other ideas, even objectionable ones, from being coerced to accept ideas.²⁸⁸ The court explained the burden required by the plaintiffs:

The lesson is clear: governmental actions that merely offend or cast doubt on religious beliefs do not on that account violate free exercise. An actual burden on the profession or exercise of religion is required. In short, distinctions must be drawn between those governmental actions that require or result in exposure to attitudes and outlooks at odds with perspectives prompted by religion.²⁸⁹

Consequently, “[t]o establish a violation of that clause [Free Exercise], a litigant must show that challenged state action has a coercive effect that operates against a litigant’s practice of his or her religion.”²⁹⁰

The court made a distinction between “civil tolerance” and “religious tolerance.” Concerning this distinction, Lively noted:

The “tolerance of divergent . . . religious views” referred to by the Supreme Court is a civil tolerance, not a religious one. It does not require a person to accept any other religion as the equal of the one to which that person adheres. It merely requires a recognition that in a pluralistic society we must “live and let live.”²⁹¹

Civil tolerance requires citizens to respect the legal and civil rights of others to believe and practice as they may desire. The teaching of civil tolerance serves a compelling interest of the state in preparing students for good citizenship, teaching that other persons with different opinions and religious views should be treated with respect. Religious tolerance is the idea that citizens should respect the equal value of all other religions.²⁹² The plaintiff’s rejection of “a religious tolerance that all religions are merely different roads to God” was viewed by the court as “what is lacking in the plaintiff’s case.”²⁹³ The school district is not trying to require the students to accept all religious views, but merely to acquaint them with different views.²⁹⁴ The court continued, “What is absent from this case is the critical element of compulsion to affirm or deny a religious belief or to engage or refrain from engaging in a practice

²⁸⁷ Sch. Dist. of Abington Township v. Schempp, 374 U.S. 203, 222 (1963); Wisconsin v. Yoder, 406 U.S. 205 (1972); Hobbie v. Unemployment Appeals Comm. of Florida, 480 U.S. 136 (1987); Torcaso v. Watkins, 367 U.S. 488 (1961).

²⁸⁸ “It is clear that governmental compulsion either to do or refrain from doing an act forbidden or required by one’s religion, or to affirm or disavow a belief forbidden or required by one’s religion, is the evil prohibited by the Free Exercise Clause.” *Mozert*, 827 F.2d at 1066.

²⁸⁹ *Id.* at 1068 (citation omitted) (quoting *Grove v. Mead Sch. Dist.*, 753 F.2d 1528, 1543 (9th Cir. 1985), cert. denied, 474 U.S. 826 (1986)).

²⁹⁰ *Id.* (citation omitted) (quoting *Grove*, 753 F.2d at 1533).

²⁹¹ *Id.* at 1069.

²⁹² *Id.* at 1068-69.

²⁹³ *Id.*

²⁹⁴ *Id.*

forbidden or required in the exercise of a plaintiff's religion." One well-reasoned response to the court stated:

Schools have no business, much less a compelling interest in, teaching religious tolerance. To teach religious tolerance in its blatant form—to teach as truth that all faiths are equally valid—would violate the Establishment Clause because the belief that all roads to God is as much a religious belief as the belief that only one road leads to God.²⁹⁵

This commitment to, and confusion between, civil and religious toleration has led educators to believe that they have a duty to inculcate, as one National Education Association publication stated, "a respect for the . . . validity of divergent religious beliefs."²⁹⁶ This fails to achieve constitutional tolerance and may actually be counterproductive to its alleged purpose.

Schools often teach a "softened" religious tolerance—one that never actually states that all religions and beliefs are equally valid, but nevertheless implies it by exposing school children to a wide variety of religious and cultural beliefs and practices presented in a positive light. . . . The implied message of these programs is a mushy, feel-good diversity that there is good in all religions and that children should therefore respect and appreciate those who belong to faiths other than their own. Teaching children religious tolerance—whether "blatant" or "softened"—not only fails to serve a compelling interest in teaching children to be citizens, it is also arguably antithetical to true citizenship.²⁹⁷

Proper instruction of students regarding religion should not result in trivializing the differences between religions.

Thus, teaching religious tolerance—softened or blatant—contravenes rather than serves the purpose of preparing students to be citizens in a pluralistic society. In seeking to teach children to respect diversity and pluralism by focusing on the "good" aspects of various religions, schools end up trivializing differences that to many religious believers are extremely weighty. Trivializing religious differences in the name of respecting them is antithetical to a basic premise of the Religion Clauses of the Constitution—that religious differences (rather than uniformity) will characterize our society because of the paramount importance the Constitution places on religious conscience to be free from governmental coercion.²⁹⁸

²⁹⁵ Andrew A. Cheng, *The Inherent Hostility of Secular Public Education Toward Religion: Why Parental Choice Best Serves the Core Values of the Religion Clauses*, 19 U. HAW. L. REV. 697, 744 (1997).

²⁹⁶ STEPHEN BATES, BATTLEGROUND: ONE MOTHER'S CRUSADE, THE RELIGIOUS RIGHT, AND THE STRUGGLE FOR CONTROL OF OUR CLASSROOMS (emphasis added), quoted in Cheng, *supra* note 295, at 744.

²⁹⁷ Cheng, *supra* note 295, at 745.

²⁹⁸ *Id.* at 747.

2. Webster v. New Lenox School District²⁹⁹ (1990)

Ray Webster was a public school teacher who was prohibited by his school district from teaching non-evolutionary theories of creation in his classroom.³⁰⁰ The case arose when one of Webster's junior high social studies students complained that Webster violated the separation of church and state by teaching creation science.³⁰¹ His superiors asked him not to teach the subject since to do so advocated a particular religion.³⁰² Webster sued for injunctive and declaratory relief from the district court, alleging that this prohibition violated his First³⁰³ and Fourteenth³⁰⁴ Amendment rights.³⁰⁵ The school district contended that to allow Webster to teach as he desired would be an establishment of religion in contravention of the First Amendment.³⁰⁶ Webster claimed that he had a First Amendment right to determine the curriculum content of his class and that he should be allowed to teach a non-evolutionary theory of creation in his classroom.³⁰⁷

Mr. Webster contended that the school's restrictions interfered with his First Amendment rights of speech and academic freedom.³⁰⁸ He claimed the right to teach three religiously oriented subjects: the influence of religion in the founding of the United States, the religious ideas of Jefferson and Franklin, and creation science.³⁰⁹ The school

²⁹⁹ 917 F.2d 1004 (7th Cir. 1990).

³⁰⁰ The statement of the facts recited.

Mr. Webster said the discussion of religious issues in his class was only for the purpose of developing an open mind in his students. For example, Mr. Webster explained that he taught nonevolutionary theories of creation to rebut a statement in his social studies textbook indicating that the world is over four billion years old.

Id. at 1006.

³⁰¹ The student's complaint was later taken up by the ACLU and Americans United. See Judith A. Villarreal, Note, *God and Darwin in the Classroom: The Creation/Evolution Controversy*, 64 CHI.-KENT L. REV. 335, 370 (1988).

³⁰² *Webster*, 917 F.2d at 1005.

³⁰³ The First Amendment reads: "Congress shall make no law respecting an establishment of religion or prohibiting the free exercise thereof." U.S. CONST. amend. I.

³⁰⁴ The Fourteenth Amendment reads, in pertinent part:

No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

Id. amend. IV., § 1.

³⁰⁵ *Webster*, 917 F.2d at 1004.

³⁰⁶ *Id.* at 1005.

³⁰⁷ *Id.* at 1006.

³⁰⁸ Complaint at 4-5, *Webster v. New Lenox Sch. Dist.*, No. 88C2328 (N.D. Ill., filed Mar. 21, 1988), cited in Villarreal, *supra* note 301, at 370.

³⁰⁹ *Id.*

superintendent agreed that Webster could teach the first two subjects, but not creation science, since doing so would be religious advocacy.³¹⁰

On appeal, the Seventh Circuit held that a school may prohibit a teacher from teaching creation science in order to fulfill its duty to guarantee that the Establishment Clause of the First Amendment is not violated. The court agreed with the district court that the school district had not violated Webster's free speech rights when it prohibited him from teaching creation science,³¹¹ since creation science, in the view of the court, is a form of religious advocacy.³¹²

In rejecting Webster's claim, the court said that the First Amendment is not "a teacher license for uncontrolled expression at variance with established curricular content."³¹³ Since students were required by law to attend school and because junior high school students were at an immature stage of intellectual development, the school board had a greater responsibility for controlling the curriculum.³¹⁴ Consequently, an individual teacher had no right to set aside the directives of school authorities. The actions of the school board toward Webster's teaching of creation science, then, were prudent³¹⁵ and appropriate.³¹⁶

Educators are not in violation of the First Amendment, according to the Seventh Circuit, as long as their actions are "reasonably related to legitimate pedagogical concerns."³¹⁷ In this case, the pedagogical concern was that Webster's subject matter created Establishment Clause

³¹⁰ *Id.* at 371. Under current law, school districts have a duty to ensure that such advocacy is not practiced, as indicated by McConnell, "In *Lemon*, the Court held that the 'State must be certain . . . that subsidized teachers do not inculcate religion.' A similar prohibition exists in the public schools, where teachers are strictly forbidden to use their tax-supported position to encourage religion." Michael W. McConnell, *The Selective Funding Problem: Abortions and Religious Schools*, 104 HARV. L. REV. 989, 1023 (1991); see also, e.g., *Webster*, 917 F.2d at 1007-08; *Roberts v. Madigan*, 702 F. Supp. 1505, 1518-19 (D. Colo. 1989), *aff'd*, 921 F.2d 1047 (10th Cir. 1990), *cert. denied*, 505 U.S. 1218 (1992); *Steele v. Van Buren Pub. Sch. Dist.*, 845 F.2d 1492, 1495-96 (8th Cir. 1988); *Wallace v. Jaffree*, 472 U.S. 38, 56-61 (1985); *Breen v. Runkel*, 614 F. Supp. 355, 357-60 (D. Mich. 1985).

³¹¹ *Webster*, 917 F.2d. at 1004.

³¹² *Id.* at 1006.

³¹³ *Id.* at 1007.

³¹⁴ *Id.*

³¹⁵ "[T]he school board has successfully navigated the narrow channel between impairing intellectual inquiry and propagating a religious creed." *Id.* at 1008.

³¹⁶ *Id.*

³¹⁷ *Id.* The court quoted *Hazelwood School District v. Kuhlmeier*, 484 U.S. 260, 273 (1988), in support of its argument: "Educators do not offend the First Amendment . . . so long as their actions are reasonably related to legitimate pedagogical concerns." See also Martha M. McCarthy, Commentary, *Post-Hazelwood Developments: A Threat to Free Inquiry in Public Schools*, 81 EDUC. L. REP. 685, 698 (1993).

violations.³¹⁸ What is troubling about the court's analysis is that it nowhere explains how Webster's actions established religion in contravention of the First Amendment prohibition. Mr. Webster's stated purpose was to "explore alternate viewpoints," and the record does not indicate that indoctrination of any kind was occurring. The court does not proffer any criteria for distinguishing a religious viewpoint from a secular one.³¹⁹ The court fails to explain how evidence indicating that the Earth is not four billion years old establishes a religious creed, while evidence regarding the evolution of man is considered secular.³²⁰

3. *Bishop v. Aronov*³²¹ (1991)

The Eleventh Circuit presented a different view on the issues of freedom of speech and religion in *Bishop v. Aronov*. In this case, a university professor brought action against a university board of

³¹⁸ *Webster*, 917 F.2d at 1008.

³¹⁹ Fuller, *supra* note 218, at 101. Fuller compares this complete lacking of definition of terms on the part of the Seventh Circuit with the meager definition of religion given in *Moore v. Gaston County Bd. of Educ.*, 357 F. Supp 1037 (W.D. N.C. 1973):

The Court failed to adequately address what constitutes religion. The Court indicated that religion is that sphere of life which cannot be proved and therefore requires one to walk by faith. This is a frail standard by which to judge between the religious and the secular. There are times when science requires belief in what is not proven. Additionally, there are myriad instances of "proven" principles being disproved, thus one can rarely know when something is actually proven. Even accepting this as a valid distinction, plaintiff's statements made in class cannot be proven, all require faith and therefore are, according to the Court, religious dogma.

Remarkably, the Court allows the teacher to discuss personal religious views, religious views so offensive to some students that the students actually tried to walk out during the discussion. Either the Court is advocating that teachers be permitted to discuss religious principles at least when interrogated regarding those principles, or the Court is asserting that the plaintiff's views are non-religious and as in *Mozert* the school district cannot proscribe conduct simply because it is offensive.

Given the court's concern that, "[r]eligious or scientific dogma supported by the power of the state has historically brought threat to liberty and often death to the unorthodox . . ." it is safe to assume that the Court did not feel Mr. Webster's views were religious in nature. The Court can reach this conclusion because they reason from the premise that Mr. Webster's comments amounted to little more than inferences from Darwin's theory of evolution and to postpone regarding this theory is to postpone education. The Court assumes that Mr. Webster's statements are not religious without explaining why. An analysis of the Bible reading cases further illustrates the definitional dilemma arising from the Court's application of the Establishment Clause to public schools has caused.

Fuller, *supra* note 218, at 102-03.

³²⁰ *Id.*

³²¹ 926 F.2d 1066 (11th Cir. 1991).

trustees, challenging a memorandum which instructed him to refrain from interjecting religious beliefs or preferences during his class time and from conducting optional classes to discuss religious perspectives on academic topics.³²² To enable student's to recognize his Christian bias, Phillip Bishop, a professor of exercise physiology at the University of Alabama, commented in class that he was a Christian, and that his religious beliefs colored every aspect of his life.³²³ The professor responded occasionally to students' questions about stress with his religious beliefs, and at times used the term "God" in his lectures on the "creative force behind human physiology."³²⁴ Professor Bishop held optional classes open to all students, entitled "Evidences of God in Human Physiology."³²⁵ He used blind grading for all of his courses and did not require any of his students to attend the optional class.³²⁶

Unlike previous cases discussed above concerning the public junior and senior high classrooms, where the courts have been concerned with the presentation of religious ideas within the educational setting because of the impressionability of the students³²⁷ or the mandatory nature of the setting,³²⁸ in the instant case, neither is present.

The United States District Court for the Northern District of Alabama granted the professor's motion for summary judgment.³²⁹ Relying on *Widmar v. Vincent*³³⁰ and content discrimination in a public forum, the district court had determined that the "University [had] created a forum for students and their professors to engage in a free interchange of ideas."³³¹ Regarding the memorandum, the court decided that it was overbroad and vague because "[i]t reaches statements not violative of the Establishment Clause and fails to provide adequate notice of the proscribed speech."³³² Moreover, the district court held that

³²² *Id.*

³²³ *Id.* at 1068.

³²⁴ *Id.*

³²⁵ *Id.* at 1069.

³²⁶ *Id.* "The University viewed the holding of any optional class meeting to discuss religious implications of class material prior to the submission of final grades to be coercive and [...] therefore, prohibited," *id.*, in spite of the blind grading of the course, by which the professor could not know the identity of the students in order to affect the grades.

³²⁷ See generally *Hazelwood Sch. Dist. v. Kuhlmeier*, 484 U.S. 260, 271 (1988); *Bethel Sch. Dist. v. Fraser*, 478 U.S. 675, 684 (1986) (stating that rights of students in public schools are not as broad as rights of adults in other forums).

³²⁸ *Wisconsin v. Yoder*, 406 U.S. 205 (1972).

³²⁹ *Bishop v. Aronov*, 732 F. Supp. 1562, 1569 (N.D. Ala. 1990), *rev'd*, 926 F.2d 1066 (11th Cir. 1991).

³³⁰ 454 U.S. 263 (1981).

³³¹ *Bishop*, 732 F. Supp. at 1566.

³³² *Id.*

professor Bishop had a primarily secular purpose that did not violate the Establishment Clause.³³³

On appeal, the Eleventh Circuit Court of Appeals reversed the lower court, holding that the memorandum did not infringe on the professor's free speech or free exercise of religion rights, and that the memorandum did not establish religion.³³⁴ In response to the district court, the circuit court rejected the argument that the university provided an open forum of ideas.³³⁵ The court stated,

While the University may make its classrooms available for other purposes, we have no doubt that during instructional periods, the University's classrooms are "reserved for other intended purposes," viz., the teaching of a particular university course for credit. Thus, we hold that Dr. Bishop's classroom is not an open forum.³³⁶

The court then turned to whether Bishop's free speech or free exercise rights were infringed. The court decided to accept a narrow construction of the memo³³⁷ because it "responded to particular conduct by Dr. Bishop" and "can be said to be 'readily susceptible' to a narrowing construction."³³⁸ Bishop was clearly put on notice concerning what he could and could not do.³³⁹ Though the University encouraged and allowed academic freedom for its faculty,³⁴⁰ "plainly some topics understandably produce more apprehension than comfort in students."³⁴¹

The reasoning of the appellate court is faulty on several counts.³⁴² It fails to develop a meaningful understanding of academic freedom, especially within the context of the university.³⁴³ Second, it speaks of not desiring to determine the matter based on a public-forum approach and

³³³ *Id.* at 1567.

³³⁴ *Bishop*, 926 F.2d at 1078.

³³⁵ *Id.* at 1071.

³³⁶ *Id.*

³³⁷ *Id.*

³³⁸ *Id.*

³³⁹ *Id.*

³⁴⁰ *Id.*

³⁴¹ *Id.* at 1072. When dealing with the undermining of religious beliefs the courts have tended not to be as concerned with the comfort of primary and secondary school children. See *Epperson v. Arkansas*, 393 U.S. 97, 106 (1968) (holding that "the First Amendment does not permit the State to require that teaching and learning [] be tailored to the principles or prohibitions of any religious sect or dogma."); *Mozert v. Hawkins County Bd. of Educ.*, 827 F.2d 1058, 1066 (6th Cir. 1987) (stating that though reading materials contrary to one's religious beliefs may be offensive, it does not constitute compulsion as required by the Supreme Court cases to trigger violation of Free Exercise).

³⁴² See the analysis of the Eleventh Circuit's reasoning by John W. Hamilton, *Bishop v. Aronov: Religion-Tainted Viewpoints are Banned from the Marketplace of Ideas*, 49 WASH. & LEE L. REV. 1557, 1558-79 (1992).

³⁴³ *Id.* at 1562-68.

then relied heavily on *Kuhlmeier*,³⁴⁴ which used a public-forum analysis.³⁴⁵ In so doing, the court failed to distinguish between the different criteria for primary and secondary schools versus that of mature students within a university.³⁴⁶ The Eleventh Circuit in *Bishop* employed a rational basis standard of review³⁴⁷ in deciding whether the Establishment Clause would be violated, as the university claimed,³⁴⁸ if it did not control its curriculum in spite of the professor's speech rights. With such viewpoint discrimination the court should have used a strict scrutiny standard.³⁴⁹

4. *Peloza v. Capistrano School District*³⁵⁰ (1994)

John Peloza filed an action against the school district in which he taught claiming that the school district had violated his freedom of speech by requiring him to teach evolution and by prohibiting him from explaining creationism.³⁵¹ He argued, similar to the students in *Wright v. Houston Independent School District*,³⁵² that evolution is a religion, and so teaching it would be violation of the Establishment Clause of the First Amendment.³⁵³ This is so because evolution is a tenet of secular humanism,³⁵⁴ a religion,³⁵⁵ making evolution also a religion.³⁵⁶ Additionally Peloza argued that even if he were not allowed to teach creationism in the classroom, he should be allowed to discuss religion and creationism with students during private, non-instructional times, such as lunch, class breaks, and before and after school.³⁵⁷

The school replied that evolution was in the biology curriculum because it was the explanation accepted by the nation's school districts for science curricula.³⁵⁸ The school district argued that they had a

³⁴⁴ *Hazelwood Sch. Dist. v. Kuhlmeier*, 484 U.S. 260, 267 (1988).

³⁴⁵ *Hamilton*, *supra* note 342, at 1568-78.

³⁴⁶ *Id.* at 1571.

³⁴⁷ *Id.* at 1578.

³⁴⁸ *Bishop*, 926 F.2d at 1077.

³⁴⁹ *Hamilton*, *supra* note 342, at 1578.

³⁵⁰ 37 F.3d 517 (9th Cir. 1994).

³⁵¹ *Peloza v. Capistrano Unified Sch. Dist.*, 782 F. Supp. 1412, 1414 (C.D. Cal. 1992), *aff'd in part*, 37 F.3d 517 (9th Cir. 1994).

³⁵² 366 F. Supp. 1208, 1209 (Tex. 1972).

³⁵³ *Peloza*, 782 F. Supp. at 1412, 1418.

³⁵⁴ *Id.* at 1414.

³⁵⁵ See *Whitehead & Conlan*, *supra* note 133, at 29-37.

³⁵⁶ *Peloza*, 782 F. Supp. at 1414 n.1.

³⁵⁷ *Id.* at 1414, 1416.

³⁵⁸ *Id.* at 1414.

compelling state interest in adhering to a standard curriculum,³⁵⁹ citing Webster's³⁶⁰ rule that an individual teacher does not have the right to ignore the curriculum established by school officials.³⁶¹

The district court affirmed the school district's arguments, writing that "[f]amilies 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."³⁶² The district court also mentioned that due to the impressionable age of the children, the school officials must exercise more control over the curriculum than is required in a university,³⁶³ commenting that "university students are more mature and are therefore better able to separate opinion from fact and infuse their own personal beliefs into a given framework."³⁶⁴

The Ninth Circuit Court of Appeals upheld the district court, finding that a teacher's First Amendment right to free exercise of religion is not infringed by a school district's requirement that evolution be taught in biology classes.³⁶⁵ The court rejected the plaintiff's definition of a religion of "evolutionism,"³⁶⁶ finding that the school district had simply and appropriately required a science teacher to teach a scientific theory in biology class.³⁶⁷

Peloza's contention that evolution was a religion was countered by the court's reference to *McLean*³⁶⁸ that "it is clearly established in the case law, and perhaps also in common sense, that evolution is not a religion and that teaching evolution does not violate the Establishment Clause."³⁶⁹ Consequently, Peloza's complaint was dismissed.³⁷⁰

³⁵⁹ *Peloza*, 782 F. Supp. at 1416; see *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255, 1273 (E.D. Ark. 1982).

³⁶⁰ *Webster v. New Lenox Sch. Dist.*, 917 F.2d 1004 (7th Cir. 1990).

³⁶¹ *Id.* at 1008.

³⁶² *Peloza*, 782 F. Supp. at 1418.

³⁶³ *Id.* at 1417. This line of argument was not adopted in *Bishop v. Aronov*, 926 F.2d 1066, 1073 (11th Cir. 1991).

³⁶⁴ *Peloza*, 782 F. Supp. at 1417 (quoting *McLean*, 529 F. Supp. at 1255).

³⁶⁵ *Peloza v. Capistrano Unified Sch. Dist.*, 37 F.3d 517, 523 (9th Cir. 1994).

³⁶⁶ *Id.* at 520-21.

³⁶⁷ *Id.* at 522.

³⁶⁸ See *McLean*, 529 F. Supp. at 1274; see also *Peloza*, 37 F.3d at 521.

³⁶⁹ *Peloza*, 782 F. Supp. at 1417.

³⁷⁰ See Francis, *supra* note 24, at 765.

5. *Freiler v. Tangipahoa Parish Board of Education*³⁷¹ (1999, 2000)

A noteworthy recent addition to this line of jurisprudence is *Freiler v. Tangipahoa Parish Board of Education*. The case has been discussed effectively elsewhere,³⁷² so for our purposes it suffices to point out that an intriguing aspect of *Freiler* is its mention of the teaching of intelligent design.³⁷³ Evolutionist Molleen Matsumura says, "The decision is also noteworthy for recognizing that curriculum proposals for 'intelligent design' are equivalent to proposals for teaching 'creation science'.³⁷⁴

IV. MAY THE TEACHING OF INTELLIGENT DESIGN IN THE PUBLIC SCHOOLS BE CONSTITUTIONALLY PERMISSIBLE?

A. Is Intelligent Design Science?

1. What is Science?

Much of the difficulty in the creation-evolution controversy relates to the definition of what is science and what is religion. The Oxford Dictionary defines science as "[a] branch of study which is concerned either with a connected body of demonstrated truths or with observed facts systematically classified and more or less colligated by being brought under general laws, and which includes trustworthy methods for the discovery of new truth within its own domain."³⁷⁵ The emphasis in this definition is on demonstration and observation for the purpose of further study.

2. Science as Philosophy

The above definition, however, may be inadequate since some view science as also referring to a system or world-view based upon what are considered to be facts. Under this definition science would be a philosophy. Related to this perspective of science as philosophy is the nature of common sense assumptions by science. Science, for example, assumes the existence of an external world, which might be debated philosophically since this is understood through sense organs and it is

³⁷¹ 185 F.3d 337 (5th Cir. 1999), *reh'g denied en banc*, 201 F.3d 602 (5th Cir. 2000), *cert. denied*, 530 U.S. 1251 (2000) (mem.).

³⁷² M. Drew DeMott, Note, *Freiler v. Tangipahoa Parish Board of Education: Disclaiming the Gospel of Modern Science*, 13 REGENT U. L. REV. 597 (2001).

³⁷³ See *Freiler v. Tangipahoa Parish School Bd. of Educ.*, 975 F. Supp. 819, 821 (E.D. La. 1997), *aff'd*, 185 F.3d 337 (5th Cir. 1999), *reh'g denied en banc*, 201 F.3d 602 (5th Cir. 2000), *cert. denied*, 530 U.S. 1251 (2000) (mem.).

³⁷⁴ Matsumura, *supra* note 195.

³⁷⁵ 2 THE COMPACT EDITION OF THE OXFORD ENGLISH DICTIONARY 2668 (3d ed. 1973).

not certain how accurate they are; it assumes that the external world is orderly; it assumes that the external world is knowable; it assumes the existence of truth; it assumes the laws of logic; it assumes the reliability of our cognitive and sensory faculties to serve as truth-gathers and as a source of justified beliefs in our intellectual environment; it assumes the adequacy of language to describe the world; it assumes the existence of values used in science (e.g. test theories fairly and report test results honestly); it assumes the uniformity of nature and induction; and it assumes the existence of numbers.³⁷⁶

3. When is Science not really Scientific?

Science, then, is not devoid of presuppositions and its current definition contains circular reasoning. If a "Watchmaker" is carefully excluded at the beginning, we need not be surprised if no "Watchmaker" appears at the end. The stark reality is that

[t]he scientist enters into a study with certain preconceived notions and interprets the results of the study with the same preconceived notions. True objectivity simply does not exist in the scientific world. A creationist and an evolutionist can agree on the data, the physically observable phenomena (whether it be the distribution of radioisotopes in a given geological structure or the bone formations of a living animal or fossil). They will then proceed to interpret that data according to their own presuppositions ('God created this' or 'It all happened by accident'). Both employ the same data, but reach strikingly different conclusions.³⁷⁷

Science as a method of seeking to discover truth should be distinguished from scientism, a commitment to a supposed scientific method at the expense of truth.

Scientism is the view that science is the very paradigm of truth and rationality. If something does not square with currently well-established scientific beliefs, if it is not within the domain of entities appropriate for scientific investigation, or if it is not amenable to scientific methodology, then it is not true or rational. Everything outside of science is a matter of mere belief and subjective opinion, of which rational assessment is impossible. Science, exclusively and ideally, is our model of intellectual excellence.³⁷⁸

A distinction exists between strong and weak scientism:

³⁷⁶ MORELAND, *supra* note 190, at 17. See also the presentation by Klotz on the reliability of sense impressions and logic in scientific investigations. KLOTZ, *supra* note 42, at 4-6.

³⁷⁷ Calbreath, *supra* note 161, at 10. See also the evaluation by John L. Wiester of the way in which the modern scientific establishment equates the term "evolution" with the "Blind Watchmaker." Wiester, *supra* note 86, at 3; *see generally id.* at 1-4.

³⁷⁸ MORELAND, *supra* note 190, at 14.

Note first that strong scientism [there are no truths apart from scientific truths; all truths must be tested according to scientific methodology] is self-refuting. A proposition (or sentence) is self-refuting if it refers to and falsifies itself. For example, 'There are no English sentences' and 'There are no truths' are self-refuting. Strong scientism is not itself a proposition *of* science, but a second-order proposition of philosophy *about* science to the effect that only scientific propositions are true or rational to believe. And strong scientism is itself offered as a true, rationally justified position to believe."

There are two more problems that count equally against strong and weak scientism. First, scientism (in both forms) does not adequately allow for the task of stating and defending the necessary presuppositions for science itself to be practiced (assuming scientific realism). Thus scientism shows itself to be a foe and not a friend of science.

Science cannot be practiced in thin air. In fact, science itself presupposes a number of substantive philosophical theses that must be assumed if science is even going to get off the runway. Each of these assumptions has been challenged, and the task of stating and defending these assumptions is one of the tasks of philosophy. The conclusions of science cannot be more certain than the presuppositions its rests on and uses to reach those conclusions.

....

There is a second problem that counts equally against strong and weak scientism: the existence of true and rationally justified beliefs outside of science. The simple fact is that true, rationally justified beliefs exist in a host of fields outside of science. Strong scientism does not allow for this fact, and it is therefore to be rejected as an inadequate account of our intellectual enterprise.³⁷⁹

4. Has the *McLean* Decision Disqualified Intelligent Design as Science?

Judge Overton set forth standards of what is science, which we have already seen, do not square with the current notion of the definition of science.³⁸⁰ His definition excludes whatever cannot be explained by natural laws.³⁸¹ Since intelligent design assumes a designer of creation

³⁷⁹ *Id.* at 15-17.

³⁸⁰ See *supra* notes 260-63 and accompanying text.

³⁸¹ Judge Overton refers to natural law (it is ironic that natural law came into science from theology) in two of his five requirements for science, namely "it is guided by natural law," and "it has to be explanatory by reference to natural law." *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255 (E.D. Ark. 1982). This definition not only excludes creation science but also many areas of scientific investigation. See Laudan, *supra* note 261, at 19.

exists outside of the natural order, then presumptively, intelligent design could not be science under this view.³⁸²

This simplistic notion of science excludes much of what is understood by most scientists as true science. Take for example the distinction between existence and explanation:

For centuries scientists have recognized a difference between establishing the existence of a phenomenon and explaining that phenomenon in a lawlike way. Our ultimate goal, no doubt, is to do both. But to suggest, as the *McLean* Opinion does repeatedly, that an existence claim . . . is unscientific until we have found the laws on which the alleged phenomenon depends is simply outrageous. Galileo and Newton took themselves to have established the existence of gravitational phenomena, long before anyone was able to give a causal or explanatory account of gravitation. Darwin took himself to have established the existence of natural selection almost a half-century before geneticists were able to lay out the laws of heredity on which natural selection depended. If we took the *McLean* Opinion criterion seriously, we should have to say that Newton and Darwin were unscientific; and, to take an example from our own time, it would follow that plate tectonics is unscientific because we have not yet identified the laws of physics and chemistry which account for the dynamics of crustal motion.³⁸³

The universe gives strong indications of an intelligent designer³⁸⁴ and denial of such makes a detractor appear less than straightforward.³⁸⁵ The denial of *creatio ex nihilo*,³⁸⁶ or a creator, as non-scientific solves no problems for modern science, since the big bang assumes essentially the

³⁸² Fortunately, the United States Supreme Court has not come to that conclusion yet. "The U.S. Supreme Court in *Edwards v. Aguillard* did not enter a holding that the theory of 'creation-science' is inherently religious, although the Court implied it in *dictum*." 2 BIRD, *supra* note 53, at 446; *see also id.* at 457-58 (discussing the significance of the *Epperson* and *Edwards* decisions); *supra* section III.D. It is uncertain how the Court would view a less comprehensive view of origins as intelligent design.

³⁸³ Laudan, *supra* note 261, at 17-18, *quoted in* 2 BIRD, *supra* note 53, at 25. Bird cites a number of cosmologists and other scientists who contend that often the known laws of physics do not apply. 2 BIRD, *supra* note 53, at 27-28.

³⁸⁴ See *supra* section II.E. for discussion on intelligent design; *see also* PALEY, *supra* note 166, at 5-7.

³⁸⁵ A contrasting view to design can be observed in DAWKINS, *supra* note 164, at 1: "Biology is the study of complicated things that give the appearance of having been designed for a purpose." His point is that evolution is blind in its selection, so if it looks like it is designed that is only because it works. This seems to be less than forthright.

³⁸⁶ *See infra* section IV.B.

same thing,³⁸⁷ and scientists regularly speak of creation,³⁸⁸ implying creator, in contrast to the eternity of matter, with no creator.³⁸⁹

B. Is Intelligent Design Religious?
Intelligent Design and creatio ex nihilo

The *McLean* opinion argued that creation, by definition, must be viewed as religious,³⁹⁰ but the Supreme Court has ruled that a religious view consistent with a secular view does not violate the Establishment Clause.³⁹¹ Judge Overton wrote regarding *creatio ex nihilo*:

“creation out of nothing” is a concept unique to Western religions. In traditional Western religious thought, the conception of a creator of the world is a conception of God. Indeed, creation of the world “out of nothing” is the ultimate religious statement because God is the only actor. . . .

. . .
The idea of sudden creation from nothing, or creation ex nihilo, is an inherently religious concept. (Vawter, Gilkey, Geisler, Ayala, Blount, Hicks.)

The argument advanced by defendants’ witness, Dr. Norman Geisler, that teaching the existence of God is not religious unless the teaching seeks a commitment is contrary to common understanding and contradicts settled case law. . . .³⁹²

Judge Overton’s simplistic understanding of science and religion are clearly revealed here. First, *creatio ex nihilo* did not originate in western thinking, but was Hebraic in origin with the Christian west borrowing this idea from the Near Eastern view of the Hebrews. Second, as we have seen above,³⁹³ the big bang theory of the origin of the universe generally presupposes a creation out of nothing, but is not religious. Third, the settled law, wrongly stated by Judge Overton, is that religion requires commitment and devotion, not dispassionate analysis of the

³⁸⁷ See *supra* note 252.

³⁸⁸ See 2 BIRD, *supra* note 53, at 447, for examples.

³⁸⁹ See Bird’s discussion of the steady state theory. *Id.* at 199-200. See also GEORGE MULFINGER, *Theories of the Origin of the Universe*, in WHY NOT CREATION?, *supra* note 53, at 54-58, for discussion of steady state theory, and *id.* at 39-66 for a look at a number of theories regarding the origin of the universe.

³⁹⁰ 529 F. Supp. at 1255, 1266. See GEISLER, *supra* note 222, at 114-17, for refutation that creation or a creator is necessarily religious. See also John Zingarelli, *Is “Creation” a Religious Concept?*, 8 REGENT U. L. REV. 35 (1997) (arguing that there is no established criteria that can be given to identify a concept as religious or scientific).

³⁹¹ See 2 BIRD, *supra* note 53, at 451.

³⁹² McLean v. Arkansas Bd. of Educ., 529 F. Supp. 1255, 1265-66 (E.D. Ark. 1982).

³⁹³ See *supra* note 252 and accompanying text; see also 2 BIRD, *supra* note 53, at 136, 193-94.

existence of higher being.³⁹⁴ Justice Scalia understood this well when he affirmed that the idea of a prime mover or designer in ancient Greek thought was not religious in nature.³⁹⁵ Fourth, *McLean* seems to imply that if something is not scientific, it must be religious, but such thinking has puzzling results for explaining philosophical views which are not scientific but are also not religious.³⁹⁶

C. May Intelligent Design Survive Constitutional Challenge?

1. The Problems the Creationists Face

Given the history of the debate regarding the teaching of creation and evolution in the classroom, and the gradual enthronement of evolution, the question arises whether it is possible for a form of creation to be taught, constitutionally, in the public schools of America?

History reflects a very hectic past with attempts by creationists to forbid the teaching of evolution,³⁹⁷ to forbid the inclusion of evolution in textbooks,³⁹⁸ to prohibit the denial of Biblical creation,³⁹⁹ to write disclaimers against denial of Biblical creation,⁴⁰⁰ to argue against evolution based on its religious nature,⁴⁰¹ to enjoin the requirement to teach or be taught evolution or to be able to teach or be taught creation,⁴⁰² and to require that a balanced presentation of evolution and creation be given in public schools if either is taught.⁴⁰³ All of these attempts by creationists have had limited success, if not outright failure.

With such a history, is the well too poisoned for a creation theory to receive a fair hearing the courts or society? Evolution is consistent with ancient religions⁴⁰⁴ and contemporary secular humanistic religion,⁴⁰⁵ and

³⁹⁴ See GEISLER, *supra* note 222, at 114.

³⁹⁵ Edwards v. Aguillard, 482 U.S. 578, 629-30 (1987) (Scalia, J., dissenting).

³⁹⁶ 2 BIRD, *supra* note 53, at 187.

³⁹⁷ See *supra* section III.A. for discussion of *Scopes v. State*, 289 S.W. 363 (1927).

³⁹⁸ See discussion of *Daniel v. Waters*, *supra* notes 62-70 and *supra* note 195 for a discussion of *Wright v. Houston Independent School District*, 366 F. Supp. 1208 (Tex. 1972).

³⁹⁹ See *supra* section III.B. for a discussion of *Epperson v. Arkansas*, 393 U.S. 97 (1968).

⁴⁰⁰ See *supra* section III.E.5. for discussion of *Freiler v. Tangipahoa Parish Board of Education*, 185 F.3d 337 (5th Cir. 1999), *reh'g denied en banc*, 201 F.3d 602 (5th Cir. 2000), *cert. denied*, 530 U.S. 1251 (2000) (mem.).

⁴⁰¹ See *supra* section III.E.4. for discussion of *Peloza v. Capistrano Unified School District*, 37 F.3d 517 (9th Cir. 1994).

⁴⁰² See *supra* section III.E.4. for discussion of *Webster v. New Lenox School District*, 917 F.2d 1004 (7th Cir. 1990).

⁴⁰³ See *supra* section III.C. for discussion of *McLean v. Arkansas Board of Education*, 529 F. Supp. 1255 (E.D. Ark. 1982). See *supra* section III.D. for discussion of *Edwards v. Aguillard*, 482 U.S. 578 (1987).

⁴⁰⁴ See 2 BIRD, *supra* note 53, at 275-77.

does not carry with it religious associations in the minds of the courts,⁴⁰⁶ media, and society at large;⁴⁰⁷ whereas, the teaching of creation immediately is identified with the Bible⁴⁰⁸ and even with religious fundamentalism.⁴⁰⁹ As one commentator observed, "As long as the relationship between creation science and Genesis is sufficiently well known by society generally, the teaching of creation science will continue to have a religious tinge regardless of how secular (or scientific) its presentation may be."⁴¹⁰

The difficulty of the task for proponents of creation is demonstrated by the fact that one commentator has argued that even if creation could be demonstrated to be scientific, its religious nature would preclude it from being taught.⁴¹¹ Wexler concedes that intelligent design could be considered science, but nonetheless would violate the Establishment Clause as being a religious doctrine.

Wexler's argument fails because "design theory does not fit the dictionary definition of religion, or the specific test for religion adopted by the Ninth Circuit in its recent cases concerning the establishment of religion."⁴¹² The circuit court adopted the recommendation of constitutional scholar Laurence Tribe that "anything 'arguably non-religious' should not be considered religious in applying the Establishment Clause."⁴¹³ In another case, the Ninth Circuit relies on a

⁴⁰⁶ See Whitehead & Conlan, *supra* note 133, at 47.

⁴⁰⁶ See *Peloza v. Capistrano Unified Sch. Dist.*, 37 F.3d 517, 521 (9th Cir. 1994).

⁴⁰⁷ Ingber says,

The same general society that is likely to identify creation science with the religious text of Genesis is not likely to associate the nonreligious considerations of self-actualization, moral relativism, and evolution with the affirmatively irreligious aspects of secular humanism. The failure to recognize this constitutes Judge Hand's second error in his Smith opinion. Most of our national community is unaware of even the existence of the Humanist Manifestos I and II or of the relationship between John Dewey's educational writings and an irreligious ideology. Some local communities, however, (especially fundamentalist Christian communities) know of this relationship; and it is within these communities that claims arise.

Ingber, *Religion or Ideology*, *supra* note 148 at 324-25.

⁴⁰⁸ Even with disclaimers that scientific creationism or creation science is only built on scientific evidence and without reference to religious materials or texts, the *McLean* court continued to speak of the position as Biblical creationism. See *McLean*, 529 F. Supp. at 1264.

⁴⁰⁹ *Id.* at 1258-59.

⁴¹⁰ Ingber, *Religion or Ideology*, *supra* note 148, at 324.

⁴¹¹ Jay D. Wexler, *Of Pandas, People, and the First Amendment: The Constitutionality of Teaching Intelligent Design in the Public Schools*, 49 STAN. L. REV. 439 (1997).

⁴¹² DEWOLF ET AL., *supra* note 250, at 16; see *Peloza*, 37 F.3d at 517.

⁴¹³ LAURENCE TRIBE, AMERICAN CONSTITUTIONAL LAW 827-28 (1978), quoted in DEWOLF ET AL., *supra* note 250, at 16.

three-part test to define religion that is nearer to the original sense of the “establishment” of the of a religion intended by the framers of the First Amendment:⁴¹⁴

First, a religion addresses fundamental and ultimate questions having to do with deep and imponderable matters. Second, a religion is comprehensive in nature; it consists of a belief-system as opposed to an isolated teaching. Third, a religion often can be recognized by the presence of certain formal and external signs.⁴¹⁵

Under these two rulings, as articulated by the Ninth Circuit, design theory could survive a constitutional challenge. Intelligent design does not violate the three-part test. Rather than being an attempt to penetrate “ultimate questions,” design theory seeks only to answer a question posed by Darwinian theory and contemporary biologists, namely, “[h]ow did biological organisms acquire their appearance of design?”⁴¹⁶ The answer relates only to a designer without identifying the designer. Certainly, intelligent design is consistent with theism, but such does not cause the theory to be unconstitutional. As Justice Powell writes in his concurring opinion in *Edwards v. Aguillard*, “A decision respecting the subject matter to be taught in public schools does not violate the Establishment Clause simply because the material to be taught ‘happens to coincide or harmonize with the tenets of some or all religions.’”⁴¹⁷

Second, intelligent design does not qualify under the legal definition of religion articulated by the Ninth Circuit concerning a comprehensive belief system “as opposed to an isolated teaching.”

Design theory does not offer a theory of morality or metaphysics, or an opinion on the prospects of an afterlife. It requires neither a belief in divine revelation nor a code of conduct; nor does it purport to uncover the underlying meaning of the universe or to confer inviolable knowledge on its adherents. It is simply a theory about the source of the appearance of design in living organisms. It is a clear example of an “isolated teaching,” one that has no necessary connections to any spiritual dogma or church institution. Design theory has no religious pretensions. It simply tries to apply a well-established scientific method to the analysis of biological phenomena.⁴¹⁸

Last of all, design theory does not trigger the third part of the suggested test by the Ninth Circuit regarding “formal and external

⁴¹⁴ See House, *supra* note 65, at 249-62.

⁴¹⁵ *Alvarado v. San Jose*, 94 F.3d 1223, 1229 (9th Cir. 1996), quoted in DEWOLF ET AL., *supra* note 250, at 16.

⁴¹⁶ DEWOLF ET AL., *supra* note 250, at 17.

⁴¹⁷ *Edwards v. Aguillard*, 482 U.S. 578, 605 (1987) (Powell, J., concurring) (quoting *McGowan v. Maryland*, 366 U.S. 420, 442 (1961)).

⁴¹⁸ DEWOLF ET AL., *supra* note 250, at 17.

signs." There are no sacraments, no sacred texts, observance of holidays, and no ordinations.

2. Future Directions for the Creationist Movement

For creationism to have any hope of success it will need to minimize its goals and focus its efforts. Unlike previous attempts in the first half of the twentieth century to dislodge evolution by legal fiat, or in the latter half of the last century to remove it legally by identifying it with its religious presuppositions, creationists must allow the theory to die from lack of intellectual oxygen, or collapse in confrontation with the intellectual battles of the intelligent design movement in the public square.⁴¹⁹ Scientists increasingly have difficulty in sustaining the many inconsistencies and lack of evidence for the general theory of evolution.⁴²⁰ Creationists should concentrate efforts on the more fundamental question of origins, particularly the matter of intelligent design versus random chance for the beginning of the universe.⁴²¹ Any reference to a young earth, flood geology, fixation of species, or the like, immediately sends signals of Biblical creationism, while discussion of such mathematical and scientific views of probability or information theory⁴²² removes the discussion from the traditional mode. Perception is nine-tenths of the problem.

Intelligent design theory, then, does not bring the same concerns as traditional creationism,⁴²³ and because of this may not receive some of

⁴¹⁹ See 2 BIRD, *supra* note 53, at 283-84 for the teleological dimensions to the theories of evolution and creation.

⁴²⁰ See *id.* at 444-45. See also *supra* note 53, in which several books by non-creationist scientists call into question the viability and truthfulness of evolution as a scientific theory.

⁴²¹ Since intelligent design accepts many of the general postulates of the majority of the scientific community, though sometimes with some modification, the real issue relates to whether the universe and life is existent due to intelligent design or random chance. Wiester, *supra* note 86, at 3-4.

⁴²² See arguments of intelligent design, *supra* section II.E.

⁴²³ Note the differences between the traditional arguments of creation science and those of intelligent design, *supra* section II.E. See also the presentation of differences between scientific creationism and intelligent design by DeWolf:

Furthermore, the prepositional content of design theory differs significantly from that of scientific creationism. Scientific creationism is committed to the following propositions:

- (1) There was a sudden creation of the universe, energy, and life from nothing.
- (2) Mutations and natural selection are insufficient to bring about the development of all living kinds from a single organism.
- (3) Changes of the originally created kinds of plants and animals occur only within fixed limits.
- (4) There is separate ancestry for humans and apes.

the emotional, and grassroots, support that carried along previous attempts, but it is likely, due to its method of argument, its lack of obvious allusion to fundamentalism and Christian theology, and its seemingly less grandiose proposals, that it may fare better in the courts and in the classrooms. Such a scenario, balancing design and chance rationales for the origins of the universe and life, should be proposed to school boards,⁴²⁴ taught in public school classrooms,⁴²⁵ and presented in legislation.⁴²⁶

The United States Supreme Court in *Edwards* did not hold that the teaching of creation is religious in contravention to the Establishment Clause.⁴²⁷ The Court only ruled that a law, such as the Louisiana Act,

(5) The earth's geology can be explained via catastrophism, primarily by the occurrence of a worldwide flood.

(6) The earth and living kinds had a relatively recent inception (on the order of ten thousand years).

These six tenets taken jointly define scientific creationism for legal purposes. The Court in *Edwards* ruled that taken jointly this group of propositions may not be taught in public school science classrooms. (Nevertheless, the Court left the door open to some of these tenets being discussed individually.)

Design theory, on the other hand, asserts the following:

(1) High information, content (or specified complexity) and irreducible complexity constitute strong indicators or hallmarks of past intelligent design.

(2) Biological systems have a high information content (or specified complexity) and utilize subsystems that manifest irreducible complexity.

(3) Naturalistic mechanisms or undirected causes do not suffice to explain the origin of information (specified complexity) or irreducible complexity.

(4) Therefore, intelligent design constitutes the best explanation for the origin of information and irreducible complexity in biological systems.

A comparison of these two lists demonstrates clearly that design theory and scientific creationism differ markedly in content. Clearly, then, they do not derive from the same source. Thus, the Court's ruling in *Edwards* does not apply to design theory and can provide no grounds for excluding discussion of design from the public school science curriculum.

DEWOLF ET AL, *supra* note 250, at 22-24.

⁴²⁴ Those making these proposals must strongly disassociate any reference to the Bible, evolution as religion and scientific theories that seek to prove portions of the Bible, and major religious voices in the community should not take a significant part in the activities. The emphasis must be on greater and fairer science education.

⁴²⁵ An ideal scenario would be for a popular and peer respected public school teacher (preferably high school) who has faithfully avoided any Biblical references or allusions in class, who has taught intelligent design and random chance to his students, to be prohibited from teaching these scientific theories. This would entail viewpoint discrimination in violation of the First Amendment. See DEWOLF ET AL., *supra* note 250, at 24-26, for discussion of viewpoint discrimination in reference to teaching intelligent design. Questions of freedom of religion or establishment of religion should be avoided.

⁴²⁶ The errors of the past with persons attracting attention by having church groups seek to influence legislation should be avoided and sponsors should restrict themselves to concerns of better science education and academic freedom for students.

⁴²⁷ See 2 BIRD, *supra* note 53, at 456-58.

must have a demonstrably, though not exclusively, secular purpose,⁴²⁸ and consequently a primary effect which neither advances nor inhibits religion.⁴²⁹ For legislators or teachers who are truly *not* seeking to get the “Bible back into school,” but simply want fair representation of all competing scientific theories to be presented to students, intelligent design offers a real possibility to achieve that goal.

⁴²⁸ See *id.* at 452-58.

⁴²⁹ See *id.* at 449-52.

APPENDIX 1

The dissent of seven in *Aguillard v. Edwards*⁴³⁰ wrote a severe reprimand of the majority for failure to listen to the case en banc. The dissent is important enough to this matter to be viewed in total:

GEE, Circuit Judge, with whom CLARK, Chief Judge, and REAVLEY, GARWOOD, PATRICK E. HIGGINBOTHAM, ROBERT MADDEN HILL and EDITH HOLLAN JONES, Circuit Judges, join dissenting.

Today our full court approves, by declining review en banc, a panel opinion striking down a Louisiana statute as one "respecting an establishment of religion." The panel reasons that by requiring public school teachers to present a balanced view of the current evidence regarding the origins of life and matter (if any view is taught) rather than that favoring one view only and by forbidding them to misrepresent as established fact views on the subject which today remain theories only, the statute promotes religious belief and violates the academic freedom of instructors to teach whatever they like.

The *Scopes* court upheld William Jennings Bryan's view that states could constitutionally forbid teaching the scientific evidence for the theory of evolution, rejecting that of Clarence Darrow that truth was truth and could always be taught--whether it favored religion or not. By requiring that the whole truth be taught, Louisiana aligned itself with Darrow; striking down that requirement, the panel holding aligns us with Bryan.

I disagree with this holding; and because we endorse it today, I respectfully dissent.

BACKGROUND

In 1981 the Louisiana legislature passed the legislation which is the subject of today's controversy. Sections 17:286.1 through 286.7, Louisiana Revised Statutes. Its full text appears as an appendix to the panel opinion, at 765 F.2d 1251, 1258. The general purport of this law is to provide three things:

1. That the "subject of origins" of the universe, of life, and of species need not be taught at all in the public schools of Louisiana; but,
2. That if either "creation-science" (defined as "the scientific evidences for creation and inferences from" them) or "evolution-science" (parallel definition) be taught, balanced treatment be given the other; and,
3. That, if taught, each be taught as a theory, "rather than as proven scientific fact."

I am as capable as the panel of making an extra-record guess that much, if not most, of the steam which drove this enactment was generated by religious people who were hostile to having the theory of evolution misrepresented to school children as established scientific fact and who wished the door left open to acceptance by these children

⁴³⁰ 778 F.2d 225 (5th Cir. 1985), *aff'd.* 482 U.S. 578 (1987).

of the Judeo-Christian religious doctrine of Divine Creation. If so, however, they did not seek to further their aim by requiring that religious doctrine be taught in public school. Instead, they chose a more modest tactic—one that I am persuaded does not infringe the Constitution.

That was to provide, as my summary of the statute indicates, that neither evolution nor creation be presented as finally established scientific fact and that, when evolution is taught as a theory, the scientific evidence for such competing theories as a "big bang" production of the universe or for the sudden appearance of highly developed forms of life be given equal time (and vice versa). As I noted at the outset, the record contains affidavits—some of them by highly-qualified scientists who there proclaim themselves agnostics and believers in evolution as a theory—which affirm that the above propositions are correct: that evolution is not established fact and that there is strong evidence that life and the universe came about in a different manner, one perhaps less inconsistent with religious doctrine. At the least, these affidavits make a fact issue that those propositions are true. For purposes of reviewing the summary judgment which our panel's opinion affirms, then, the propositions stated must be taken as established: there are two bona fide views.

It follows that the Louisiana statute requires no more than that neither theory about the origins of life and matter be misrepresented as fact, and that if scientific evidence supporting either view of how these things came about be presented in public schools, that supporting the other must be—so that within the reasonable limits of the curriculum, the subject of origins will be discussed in a balanced manner if it is discussed at all. I see nothing illiberal about such a requirement, nor can I imagine that Galileo or Einstein would have found fault with it. Indeed, so far as I am aware even Ms. O'Hair has never asked for more than equal time.

Let it be conceded, for purposes of argument, that many of those who worked to get this legislation passed did so with a religious motive. It well may be that many who advocated Louisiana's Sunday closing Law, recently upheld by us, did so from such a motive. There being evident a credible secular purpose for that law, however, we upheld it. *Home Depot, Inc. v. Guste*, 773 F.2d 616 (1985). There can be no doubt that the Louisiana Legislature was empowered under the state constitution to enact the law in question, one mandating a particular course of public school instruction; the Louisiana Supreme Court has squarely so held, on certification from us earlier in the course of this appeal. *Aguillard v. Treen*, 440 So.2d 704 (La.1983).

Despite this, our panel struck the statute down.

THE PANEL OPINION

The panel's reasoning is simple. *Lemon v. Kurtzman*, 403 U.S. 602, 91 S.Ct. 2105, 29 L.Ed.2d 745 (1972), sets three hurdles before any statute attacked as establishing religion. The panel holds that the Louisiana statute trips over the first, which requires that "the statute

must have a secular legislative purpose;" *Lemon, supra*, at 612, 91 S. Ct. at 2111. I cannot agree.

The panel opinion chiefly rests upon such Supreme Court authorities as *Lemon* (state aid to church schools), *Stone v. Graham*, 449 U.S. 39, 101 S. Ct. 192, 66 L.Ed.2d 199 (1980) (posting Ten Commandments in every classroom), and *Wallace v. Jaffree*, 472 U.S. 38, 105 S. Ct. 2479, 86 L.Ed.2d 29 (1985) (moment of silence for "meditation or voluntary prayer"), as well as on such holdings from our own court as *Lubbock Civil Liberties Union v. Lubbock I.S.D.*, 669 F.2d 1038 (5th Cir. 1982) (religious meetings on school property) and *Karen B. v. Treen*, 653 F.2d 897 (5th Cir. 1981) (classroom prayer). Such authorities treat [] statutes having a direct and clear religious connection, either by way of granting public assistance to religious schools or by requiring or permitting religious activities in public ones. The statute which concerns us today is quite different: it has no direct religious reference whatever and merely requires that the whole scientific truth be taught on the subject if any is.

In order to invalidate it as "establishing religion," it was therefore necessary for the panel to look beyond the statute's words and beyond legislative statements of secular purpose. To strike the statute down, the panel draws upon its visceral knowledge regarding what must have motivated the legislators. It sifts their hearts and minds, divines their motive for requiring that truth be taught, and strikes down the law that requires it. This approach effectually makes a farce of the judicial exercise of discerning legislative intent. The task is admittedly a most difficult and often impossible one, since legislatures are not known for providing clear guidance to those interpreting their works; but it is a task constitutionally required. To disregard so completely the existing manifestations of intent and impose instead one's personal, subjective ideas as to what *must* have been the true sentiment of the Louisiana legislature ignores this constitutional restraint on judicial power.

Moreover, even assuming the panel's guess about legislative sentiment is right, the infirmity of its reasoning becomes immediately evident when it is extended from prescribing what is to be taught to the teaching itself. If it is unconstitutional to *require* secular matter to be taught from a motive to advance religion it must necessarily also be unconstitutional to *teach* it from such a motive. If so, a public school teacher so indiscreet as to admit to teaching the evidence for creation science from a motive to advance religion is subject to being silenced, while one teaching exactly the same matter without such a motive cannot be interfered with. Like a clock that strikes 13, a rule that produces such a result as this cannot be sound.

I await with interest the application of this new mode of constitutional analysis to other statutes. The bigamy laws, for example, carry tell-tale indicia of having been passed with a motive to favor the Judeo-Christian religious preference for monogamy, singling it out for adoption over the equally workable Moslem view. Perhaps

our court, consulting its intuitive knowledge about what motivates legislators, will presently determine that there can be no secular purpose in such a preferment of one model of the marital relationship over another, especially when the effect of doing so is to espouse the religious doctrine of the two larger religious sects in our country over that of the minority of Moslems. But such intriguing possibilities must await another day, and I return to the case in hand.

I should have thought that requiring the truth to be taught on any subject displayed its own secular warrant, one at the heart of the scientific method itself. Put another way, I am surprised to learn that a state cannot forbid the teaching of half-truths in its public schools, whatever its motive for doing so. Today we strike down a statute balanced and fair on its face because of our perception of the reason why it got the votes to pass: one to prevent the closing of children's minds to religious doctrine by misrepresenting it as in conflict with established scientific laws. After today, it does not suffice to teach the truth; one must also teach it with the approved motive. It may be that the Constitution forbids a state to require the teaching of lies in the classrooms of its public schools; perhaps among its emanations or penumbras there can be found means to invalidate such a law, say, as one mandating that students be taught that the earth is flat or that chattel slavery never existed in this country. It comes as news to me, however, that the Constitution forbids a state to require the teaching of truth—any truth, for any purpose, and whatever the effect of teaching it may be. Because this is the holding that we endorse today,⁴³¹ I decline to join in that endorsement and respectfully dissent.

⁴³¹ *Id.* at 225-228 (Gee, J., dissenting).