INTELLIGENT DESIGN AND THE PUBLIC SCHOOL CURRICULUM: 

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Abstract: In theory, the First Amendment to the Constitution of the United States of America sets forth a principle widely known as “separation of church and state.” In practice, America is a dynamic patchwork of religious and political values, attitudes, and activities. In some cases, the religious and political components of our lives rest side by side without seriously challenging one another – or the principle of separation. Other cases are fraught with misunderstanding, conflict, and confusion. In recent years, questions concerning the teaching of evolution, creationism, and intelligent design have proven particularly problematic.

In the early 1980s, the Louisiana State Legislature passed a law titled the “Balanced Treatment for Creation-Science and Evolution-Science in Public School Instruction Act” (a.k.a. “The Creationism Act”). The law did not require either creationism or evolution to be taught in public schools, but under the banners of academic freedom and balanced treatment, it did require that the teaching of either be “balanced” by the teaching of its alternative. In a split decision, the Supreme Court ruled against the Creationism Act, but upheld the concept of “teaching a variety of scientific theories about the origins of humankind” (Edwards v. Aguillard, June 1987).

In October 2004, the School Board of Dover, Pennsylvania decided to test the social and judicial waters concerning the teaching of Intelligent Design. This presentation considers the actions of the school board, the controversy that erupted within the community, and the ensuing legal battle (Kitzmiller v. Dover, December 2005).

Edwards v. Aguillard
(482 U.S. 578, 583 (June 1987))

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evolution to be taught in public schools, but under the banners of academic freedom and balanced treatment, it did require that the teaching of either be “balanced” by the teaching of its alternative.

The constitutionality of the Creationism Act was challenged in Federal Court by parents, religious leaders, and teachers: including a biology teacher (Don Edwards) whose name will forever be associated with the case. The District Court granted a summary injunction, ruling that the Act violated the Establishment Clause of the First Amendment. Specifically:

The court held that there can be no valid secular reason for prohibiting the teaching of evolution, a theory historically opposed by some religious denominations. The court further concluded that “the teaching of ‘creation-science’ and ‘creationism,’ as contemplated by the statute, involves teaching ‘tailored to the principles’ of a particular religious sect or group of sects.” The District Court therefore held that the Creationism Act violated the Establishment Clause either because it prohibited the teaching of evolution or because it required the teaching of creation science with the purpose of advancing a particular religious doctrine.

The Fifth Circuit Court of Appeals affirmed the District Court ruling in 1985. On December 10, 1986, the case was argued before the United States Supreme Court. Summarizing the Appellate decision, the Supreme Court noted:

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5 765 F.2d 1251 (CA5 1985).
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The court observed that the statute’s avowed purpose of protecting academic freedom was inconsistent with requiring, upon risk of sanction, the teaching of creation science whenever evolution is taught. The court found that the Louisiana Legislature’s actual intent was “to discredit evolution by counterbalancing its teaching at every turn with the teaching of creationism, a religious belief.”

In a split decision issued June 19, 1987, the Supreme Court upheld the rulings of both lower courts. They based much of their analysis on the so-called “Lemon Test.”

The Establishment Clause forbids the enactment of any law “respecting an establishment of religion.” The Court has applied a three-pronged test to determine whether legislation comports with the Establishment Clause. First, the legislature must have adopted the law with a secular purpose. Second, the statute’s principal or primary effect must be one that neither advances nor inhibits religion. Third, the statute must not result in an excessive entanglement of government with religion. State action violates the Establishment Clause if it fails to satisfy any of these prongs.

Concerning the first prong of the test (purpose), the Court challenged the stated purposes of the legislation (academic freedom and balanced education):

While the Court is normally deferential to a State’s articulation of a secular purpose, it is required that the statement of such purpose be sincere, and not a sham. …

It is clear from the legislative history that the purpose of the legislative sponsor, Senator Bill Keith, was to narrow the science curriculum. During the legislative hearings, Senator Keith stated: “My preference would be that neither [creationism nor evolution] be taught.” Such a ban on teaching does not promote – indeed, it undermines – the provision of a comprehensive scientific education.

To examine the possibility that the Creationism Act concealed a religious agenda, they began by citing legal precedent:

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7 The majority opinion, authored by Justice Brennan, was joined by Justices Marshall, Blackmun, Powell, and Stevens. Justice O’Connor joined in all but Part I of the opinion. Justice White concurred with the judgment, but not the opinion of the court. Justice Scalia authored a dissenting opinion, in which he was joined by Justice Rehnquist.
8 Ibid. citing Lemon v. Kurtzman, 403 U.S. 602, 612-613 (1971) [footnotes omitted]. The Lemon Test has become a source of substantial disagreement and considerable tension between justices on the Supreme Court. In a separate paper published earlier this year, I argue that the test has become a judicial liability (failing to provide guidance and, perhaps, even adding to the murkiness of the waters it was intended to clarify): Douglas W. Shrader, “Thou Shalt Not: Supreme Court Rulings Concerning Public Displays of Religious Symbols.” Proceedings of the Fourth Annual Hawaii International Conference on Arts and Humanities. Honolulu, HI: 2006: pp. 5564-5608.
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As in *Stone* and *Abington*, we need not be blind in this case to the legislature’s preeminent religious purpose in enacting this statute. There is a historic and contemporaneous link between the teachings of certain religious denominations and the teaching of evolution. It was this link that concerned the Court in *Epperson v. Arkansas*, 393 U.S. 97 (1968), which also involved a facial challenge to a statute regulating the teaching of evolution. In that case, the Court reviewed an Arkansas statute that made it unlawful for an instructor to teach evolution or to use a textbook that referred to this scientific theory. Although the Arkansas anti-evolution law did not explicitly state its predominate religious purpose, the Court could not ignore that “[t]he statute was a product of the upsurge of ‘fundamentalist’ religious fervor” that has long viewed this particular scientific theory as contradicting the literal interpretation of the Bible. After reviewing the history of anti-evolution statutes, the Court determined that “there can be no doubt that the motivation for the [Arkansas] law was the same [as other anti-evolution statutes]: to suppress the teaching of a theory which, it was thought, “denied” the divine creation of man.”

Turning to the specifics of the Louisiana legislation, the court concluded:

These same historic and contemporaneous antagonisms between the teachings of certain religious denominations and the teaching of evolution are present in this case. The preeminent purpose of the Louisiana Legislature was clearly to advance the religious viewpoint that a supernatural being created humankind. The term “creation science” was defined as embracing this particular religious doctrine by those responsible for the passage of the Creationism Act. Senator Keith’s leading expert on creation science, Edward Boudreaux, testified at the legislative hearings that the theory of creation science included belief in the existence of a supernatural creator. Senator Keith also cited testimony from other experts to support the creation-science view that “a creator [was] responsible for the universe and everything in it.” The legislative history therefore reveals that the term “creation science,” as contemplated by the legislature that adopted this Act, embodies the religious belief that a supernatural creator was responsible for the creation of humankind.

Because they could not rule out the *prima facie* possibility that a scientific theory might, in principle, support belief in the existence of a supernatural creator, the Court examined the legislative record to determine the “true intents” of the Act’s sponsor:

Furthermore, it is not happenstance that the legislature required the teaching of a theory that coincided with this religious view. The legislative history documents that the Act’s primary purpose was to change the science curriculum of public schools in order to provide persuasive advantage to a particular religious doctrine that rejects the factual basis of evolution in its entirety. The sponsor of the Creationism Act, Senator Keith, explained during the legislative hearings that his disdain for the theory of evolution

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10 Ibid. Omitting footnotes and citations.
11 Ibid. Omitting footnotes and citations.
resulted from the support that evolution supplied to views contrary to his own religious beliefs.12

It was a high-stakes, high-profile case. An Amicus Curiae brief filed by seventy-two Nobel Laureates, seventeen State Academies of Science, and seven other scientific organizations provided abundant support:

The Louisiana Balanced Treatment for Creation-Science and Evolution-Science Act (the “Act”) violates the Establishment Clause, as incorporated in the Fourteenth Amendment. The Act’s illegitimate bias toward the outlook of a particular religious sect is reflected in two separate provisions. One calls for the presentation of the religious tenets of “creation-science” in public-school science classes. The other singles out the domain of evolutionary science for special pejorative treatment.

The Act mandates “balanced treatment” of evolution and “creation-science,” but contains no definition of “creation-science” beyond a tautological reference to “scientific evidences of creation.” Orthodox “creation-science” has traditionally embraced religious tenets, most notably: divine creation “from nothing,” distinct

12 Ibid. Omitting footnotes and citations.
“kinds” of plants and animals, a worldwide flood, and a relatively recent inception of the universe. …

In sum, all relevant guides to the Act’s meaning confirm that it calls for the religious tenets of orthodox creation-science to be taught in the public schools.¹³

The ruling may have sent a chill through the halls of organizations hoping to incorporate creation science into the public school curriculum, but it did little to satisfy concerns or clarify confusions for citizens of Louisiana. Moreover, it seems to have had a fairly negligible impact on the way evolution is actually taught in that state. Twelve years later, in his Ph.D. thesis at Louisiana State University, Don Aguillard reported that:

1. 41% of LA public school biology teachers indicated either that creationism has a scientific foundation (24%) or they were not sure (17%).
2. There is a statistically significant correlation between instructional time devoted to evolution and beliefs regarding the validity of creationism.
3. More that 75% of LA public school biology teachers judged their academic training in evolution as inadequate.
4. Most biology teachers report spending fewer than 5 hours (of about 180) dealing with evolution throughout the school year.¹⁴

Suddenly, in this light, the seemingly incoherent and contradictory responses of Americans to the survey questions considered in the first part of this paper no longer seem quite so surprising. Moreover, if biology teachers spend fewer than five hours per year on a controversial topic about which they feel uncertain and ill-equipped to teach, the public’s widespread disagreement and dissatisfaction

concerning the quality of instruction about the origins and evolution of life seem quite reasonable.

In short, the Supreme Court ruling did nothing to alleviate the social conditions or rectify the pedagogic problems that gave rise to the conflict in the first place. As such, everyone knew that it would just be a matter of time before the issue resurfaced in somewhat different clothes. The Court acknowledged, at least at an individual level, the possibility of a compromise or synthesis between creationism and evolution:

> While the belief in the instantaneous creation of humankind by a supernatural creator may require the rejection of every aspect of the theory of evolution, an individual instead may choose to accept some or all of this scientific theory as compatible with his or her spiritual outlook.  

Furthermore, if proponents of creation science were looking for an open door, the following passage in the majority opinion must have seemed like a godsend:

> We do not imply that a legislature could never require that scientific critiques of prevailing scientific theories be taught. Indeed, the Court acknowledged in Stone that its decision forbidding the posting of the Ten Commandments did not mean that no use could ever be made of the Ten Commandments, or that the Ten Commandments played an exclusively religious role in the history of Western Civilization. In a similar way, teaching 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.

In Dover, Pennsylvania, the School Board decided to test that open door.

### Kitzmiller v. Dover
**(PA: 12/20/2005 - Case No. 04cv2688)**

On October 18, 2004, the Dover Area School Board of Directors passed the following resolution (by a vote of 6-3):

> Students will be made aware of gaps/problems in Darwin’s theory and of other theories of evolution including, but not limited to, intelligent design.

Note: Origins of Life is not taught.

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On November 19th, the District issued a press release announcing that teachers would henceforth be required to read the following statement to students in the ninth grade biology class at Dover High School (effective January 2005):

The Pennsylvania Academic Standards require students to learn about Darwin’s Theory of Evolution and eventually to take a standardized test of which evolution is a part.

Because Darwin’s Theory is a theory, it continues to be tested as new evidence is discovered. The Theory is not a fact. Gaps in the Theory exist for which there is no evidence. A theory is defined as a well-tested explanation that unifies a broad range of observations.

Intelligent Design is an explanation of the origin of life that differs from Darwin’s view. The reference book, Of Pandas and People, is available for students who might be interested in gaining an understanding of what Intelligent Design actually involves.

With respect to any theory, students are encouraged to keep an open mind. The school leaves the discussion of the Origins of Life to individual students and their families. As a Standards-driven district, class instruction focuses upon preparing students to achieve proficiency on Standards-based assessments.18

Less than one month later, on December 14th, Tammy Kitzmiller et al. filed suit, challenging the resolution as well as the press release (collectively known as “the ID Policy”) as a violation of the First Amendment Establishment Clause. The District Court Judge before whom the case was tried, John E. Jones III, had been appointed by President George W. Bush in 2002.19 If proponents of intelligent design believed their chances of winning were enhanced by having a conservative judge, they were soon disappointed. Regardless of what his personal sentiments may have been, Judge Jones had little choice but to apply judicial precedent as established by the Supreme Court: the “Lemon Test,” the “Endorsement Test,” Edwards v. Aguillard (1987), and McCreary County et al. v. American Civil Liberties Union of KY (545 U.S. (2005)).20

Judge Jones explained that the endorsement test “recognizes that when government transgresses the limits of neutrality and acts in ways that show religious favoritism or sponsorship, it violates the Establishment Clause.”21 He then cited, with approval, an

18 Ibid.


opinion issued by Supreme Court Justice O’Connor that the endorsement test is “a gloss on *Lemon* that encompassed both the purpose and effect prongs.”

The central issue in this case is whether [the government] has endorsed [religion] by its [actions].

To answer that question, we must examine both what [the government] intended to communicate ... and what message [its conduct] actually conveyed. The purpose and effect prongs of the Lemon test represent these two aspects of the meaning of the [government’s] action.22

Reversing the order of these two components, Judge Jones addressed first the question of message (effect). How had residents of the school district interpreted the actions of the board’s ID Policy? Despite “strenuous objection” from the defendants, he admitted into evidence numerous letters to the editor and editorials from the *York Daily Record* and the *York Dispatch*. He explained:

The letters and editorials are not offered for the truth of what is contained therein, but they are probative of the perception of the community at large. They reveal that the entire community has consistently and unwaveringly understood the controversy to concern whether a religious view should be taught as science in the Dover public school system.

...hundreds of individuals in this small community felt it necessary to publish their views on the issues presented in this case for the community to see. Moreover, a review of the letters and editorials at issue reveals that in letter after letter and editorial after editorial, community members postulated that ID is an inherently religious concept, that the writers viewed the decision of whether to incorporate it into the high school biology curriculum as one which implicated a religious concept, and therefore that the curri-

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culum change has the effect of placing the government’s imprimatur on the Board’s preferred religious viewpoint.\textsuperscript{23}

Following an extended discussion of whether intelligent design is a scientific theory,\textsuperscript{24} Judge Jones returned to the intended purpose of Dover’s ID Policy (per the Lemon Test as well as the first component of the Establishment Test, above). Based in part on a chronology that included statements by board members concerning the importance of teaching creationism (not simply intelligent design) and a desire to bring “prayer and faith back into the schools,”\textsuperscript{25} he concluded:

The disclaimer’s plain language, the legislative history, and the historical context in which the ID Policy arose, all inevitably lead to the conclusion that Defendants consciously chose to change Dover’s biology curriculum to advance religion. We have been presented with a wealth of evidence which reveals that the District’s purpose was to advance creationism, an inherently religious view, both by introducing it directly under the label ID and by disparaging the scientific theory of evolution, so that creationism would gain credence by default as the only apparent alternative to evolution…\textsuperscript{26}

In retrospect, the Dover Area School Board of Directors may wish that they had left well enough alone: that they had not been quite so eager to test the judicial waters concerning such a divisive and controversial subject. Judge Jones’ admonition in \textit{Kitzmiller v. Dover} is scathing, but not without warrant:

…this case came to us as the result of the activism of an ill-informed faction on a school board, aided by a national public interest law firm eager to find a constitutional test case on ID…. The breathtaking inanity of the Board’s decision is evident when considered against the factual backdrop which has now been fully revealed…. The students, parents, and teachers of the Dover Area School District deserved better than to be dragged into this legal maelstrom, with its resulting utter waste of monetary and personal resources.\textsuperscript{27}

The American public remains confused and divided over a set of issues that many consider a matter of fundamental importance. The introduction of intelligent design, whatever the motives, seems to have done little more than add to the confusion. In an August 2005 article in the \textit{New York Times Magazine}, William Safire described the changing linguistic landscape concerning creationism and intelligent design:

\textsuperscript{24} He concluded: “a reasonable, objective observer would, after reviewing both the voluminous record in this case, and our narrative, reach the inescapable conclusion that ID is an interesting theological argument, but that it is not science.” \textit{Ibid.} (Page 89).
\textsuperscript{25} \textit{Ibid.} (Page 94: note 21).
\textsuperscript{26} \textit{Ibid.} (Page 93).
\textsuperscript{27} \textit{Ibid.} (Pages.137-138).
As we have seen, U.S. District Court Judge Jones agreed with Krishtalka and Leshner: intelligent design is not science and thus has no place in the science curriculum of public schools. Even so, in the process of ruling against intelligent design, Judge Jones stressed a perspective that Americans who want both science and religion should find encouraging:

...many of the leading proponents of ID make a bedrock assumption which is utterly false. Their presupposition is that evolutionary theory is antithetical to a belief in the existence of a supreme being and to religion in general. Repeatedly in this trial, ... scientific experts testified that the theory of evolution represents good science, is overwhelmingly accepted by the scientific community, and that it in no way conflicts with, nor does it deny, the existence of a divine creator.29


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In the final analysis, there are no easy answers; but a couple of points do seem clear. First, we should not expect our courts to resolve complex social issues involving science and religion. Second, we need to pay serious attention to statistics such as those presented by Don Aguillard in his 1998 Ph.D. thesis. If biology teachers spend fewer than five hours per year on a critical but controversial topic about which they feel uncertain and ill-equipped to teach, we need to find ways to improve their education, supply appropriate resources, and restructure the curriculum to provide a more appropriate measure of time.

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“Judge John E. Jones III” (Biography: United States District Court for the Middle District of Pennsylvania) <http://www.pamd.uscourts.gov/bios/jones.htm>

“Judge John E. Jones III” (Biography: Wikipedia)  


Court Records and Rulings


“Amicus Curiae brief of 72 Nobel Laureates, 17 State Academies of Science and 7 other scientific organizations in support of appellees.”  

*Edwards v. Aguillard*: Fifth Circuit Court of Appeals. (765 F.2d 1251 (CA5 1985)).


*Edwards v. Aguillard*: Supreme Court. (482 U.S. 578, 583 (June 1987))  


Images and Pictures

All images and pictures are in the public domain. Specifics, by page number, follow:


p. 5: Camille Flammarion: L'Atmosphere: Météorologie Populaire (Paris, 1888), p. 163. “The Flammarion Woodcut is an enigmatic woodcut by an unknown artist. … The woodcut depicts a man peering through the Earth's atmosphere as if it were a curtain to look at the inner workings of the universe. The caption translates to ‘A medieval missionary tells that he has found the point where heaven [the sense here is ‘sky’] and Earth meet...’”

p. 6: William Blake: Newton (1795). “Blake's “Newton” is a demonstration of his opposition to the “single-vision” of scientific materialism: The great philosopher-scientist is isolated in the depths of the ocean, his eyes (only one of which is visible) fixed on the compasses with which he draws on a scroll. He seems almost at one with the rocks upon which he sits.”

p. 9: “From the Winchester Bible, showing the seven ages within the opening letter ‘I’ of the book of Genesis. This image is the final age, the Last judgement.”

p. 11: God as Architect/Builder/Geometer/Craftsman: Frontispiece of Bible Moralisee. French: Österreichische Nationalbibliothek (ca. 1250). “Science, and particularly geometry and astronomy/astrology, was linked directly to the divine for most medieval scholars. The compass in this 13th century manuscript is a symbol of God’s act of Creation. God has created the universe after geometric and harmonic principles, to seek these principles was therefore to seek and worship God.”