

**Tactics, Strategies & Battles—Oh My!:
Perseverance of the Perpetual Problem
Pertaining to Preaching to Public School
Pupils & Why it Persists**

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ABSTRACT

This Comment examines why a seemingly well-settled scientific issue, evolution through natural selection, continues to be the subject of so much legal controversy in public education. By exploiting misconceptions regarding the scientific method, religious special interest groups are able to persuade lawmakers to sneak religion into public school science classrooms across the country. This Comment considers the most recent incarnations of creationism and concludes by analyzing the impact the ongoing legal controversy has had on the American public's understanding of science.

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I. INTRODUCTION

Science is well defined.¹ Religion is premised on faith.² Precedent dating back to the 1920s firmly establishes both the scope and the bounds of the Establishment Clause.³ Ostensibly, whether religion may be taught in public school science classrooms is obvious.⁴ Yet recent legislation suggests the religious war on Darwin's Theory of Evolution is not only far from over but also successfully narrowing the gap between science and religion, thus, thrusting religious beliefs, more specifically Christian beliefs, into the classroom.⁵

In a complete reversal over the past century, the majority of America, including our legal system, has abandoned strict, fundamentalist ideals for more figurative interpretations of religious views, which have contributed to the growing acceptance of science.⁶ Beginning in 1925, the *Scopes* "monkey trial" revealed America's religious devotion as the ultimate explanation for the unexplained, yet that *Scopes* even reached trial signaled the inevitable.⁷ Merely five decades later, antievolution laws would be banned from public education and society would begin questioning the role of preaching "divine creation" in the classroom.⁸ Divine creation evolved into "creationism," which evolved into "creation science," which evolved into "intelligent design"—all of which have since been banned as alternatives to evolution in public schools, because all inherently entangle the government with religion.⁹ Nevertheless, two states have

¹ See, e.g., ALBERT EINSTEIN, SCIENCE, PHILOSOPHY AND RELIGION, A SYMPOSIUM (1941) reprinted in IDEAS AND OPINIONS 41, 44–45 (Carl Seelig ed., 1954).

² See *id.*

³ See generally *Edwards v. Aguillard*, 482 U.S. 578 (1978) (holding "balanced legislation" as unconstitutional); *Epperson v. Arkansas*, 393 U.S. 97 (1968) (holding that antievolution laws are unconstitutional); *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707 (M.D. Pa. 2005) (finding that teaching "Intelligent Design" as an alternative to evolution is unconstitutional); *Scopes v. State*, 289 S.W. 363 (Tenn. 1927) (holding that a law banning the teaching of evolution in public classrooms was constitutional).

⁴ See *Scopes*, 289 S.W. at 367.

⁵ See discussion *infra* Part II.D.

⁶ See *supra* cases accompanying note 3.

⁷ See *Kitzmiller*, 400 F. Supp. 2d at 710.

⁸ See *Epperson*, 393 U.S. at 108 (banning antievolution laws).

⁹ See RONALD L. NUMBERS, DARWINISM COMES TO AMERICA 40, 50 (1998) (explaining that some creationist may be described as "evolutionist," yet this is a

successfully enacted (arguably) religiously motivated legislation and many more have bills moving through the legislative process.¹⁰

Why has this conflict continually reached the court system? Considering Judge Stone’s scrupulous opinion in *Kitzmiller v. Dover*, is there a better solution?¹¹ After examining the various strategies, multiple battles, and recent successes of the religious war on evolution, this Comment will take an objective look into the mind of the American public, thereby setting the stage for a discussion of the influences behind such tenacious forces.¹² Not to suggest that religion has no place in the classroom—clearly, a well-rounded education thrives from examining multiple perspectives—but simply because sculptors create imitations of mountains does not mean that art is geology.

II. RELIGION IN THE CLASSROOM: CONFLICTS & STRATEGIES

Over 150 years ago, Charles Darwin wrote *Origin of Species by Means of Natural Selection*, marking the beginning of America’s longest war—the religious war on evolution.¹³ Prior to Darwin’s theory, science and religion were inextricably mixed, but soon after, religion and science would split into polar opposites.¹⁴ Initially, the

broad, distorted generalization). “Gap” and “progressive” creationist accept evolution and the scientifically accepted age of the earth, but reject evolution through natural selection and, instead, posit that everything was ultimately guided by divine intervention. *See id.* Advocates of Intelligent Design and theistic evolution accept the theory of evolution, the age of the earth, and even that humans evolved from a common ancestor, but still maintain that supernatural causation is ultimately responsible for everything. *See id.* Accordingly, current attempts of explaining the origins of humans or the universe through supernatural causation are not science, as the proposed proof cannot be observed, tested, or verified. *See* Dick Fischer, *Young-Earth Creationism: A Literal Mistake*, 55 PERSPECTIVES ON SCIENCE AND CHRISTIAN FAITH 222, 222–23 (2003) (young earth creationist adhere to a strict textual interpretation of the Biblical version of creation, completely reject the theory of evolution, and believe that the earth is roughly 10,000 years old).

¹⁰ *See* LA. REV. STAT. ANN. § 17:285.1 (2008); S.B. 893, 107th Gen. Assemb., 1st Reg. Sess. (Tenn. 2011) (enacted).

¹¹ *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 707 (M.D. Pa. 2005).

¹² *See* discussion *infra* Part II.C–D.

¹³ Derek H. Davis, *Kansas Schools Challenge Darwinism: The History and Future of the Creationism-Evolution Controversy in American Public Education*, 41 J. CHURCH & ST. 661, 666–67 (1999).

¹⁴ *Id.* at 664.

scientific community attempted to harmonize science and religion through broad interpretations and flexible standards; however, the theory of evolution quickly “shattered” the backbone of the Judeo-Christian tradition—supernatural causation—by denying that humans were “a creation of God”; and so, the war began.¹⁵

By the end of the nineteenth-century the scientific community had largely accepted Darwin’s theory and the two explanations for mankind’s origins had become mutually exclusive.¹⁶ In response to evolution’s rapid acceptance as a “sophisticated” science, fundamentalists began lobbying state legislators, persuading them to enact antievolution laws.¹⁷ Creation proponents introduced antievolutionary bills in thirty-seven states during the first three decades of the nineteenth-century.¹⁸ “[T]he proponents of creationism declared war on [evolution],” the public schools were the battlefield, and the Tennessee legislature struck first, leading the charge by successfully passing the Butler Act in 1925.¹⁹

A. Evolution Outlawed, Until Epperson’s Big Bang

Backed by the ACLU, John Scopes, an elementary school teacher, did the unthinkable—he taught Darwin’s Theory of Evolution to his science class.²⁰ Following a seventy-year suppression of the theory of evolution, the Butler Act banned teaching anything “that denie[d] the story of the divine creation of man, as taught in the Bible, and . . . instead [taught] that man had descended from a lower order of animals.”²¹ Although there was little doubt as to the Court’s decision,

¹⁵ *Id.* at 664–65. For example, scientists avoided literal interpretations and suggested that the “seven days” was actually a much longer period and that divine creation was still the underlying explanation. *See id.* *See also* Constance A. Clark, *Evolution for John Does: Pictures, the Public, and the Scopes Trial Debate*, J. OF AM. HISTORY 1278 (Mar. 2001).

¹⁶ Davis, *supra* note 13, at 665 (explaining that academic pressure and the rise of biblical criticism helped propel the “tidal wave” of evidence supporting evolution).

¹⁷ *Id.* at 666.

¹⁸ *Id.*

¹⁹ David Masci, *The Social and Legal Dimensions of the Evolution Debate in the U.S.*, THE PEW FORUM ON RELIGION AND PUBLIC LIFE, (Dec. 2, 2012), <http://www.pewforum.org/Science-and-Bioethics/The-Social-and-Legal-Dimensions-of-the-Evolution-Debate-in-the-US.aspx>.

²⁰ *Scopes v. State*, 289 S.W. 363, 363 (Tenn. 1927).

²¹ *Id.* at 364.

in considering whether the antievolution law was constitutional, it found: (1) that the purpose of the Act, banning evolution, was well-served and supported;²² (2) that the Establishment Clause merely banned state churches;²³ and (3) that, because Scopes was employed by the State, it was his job to obey the State's laws. Based upon these three findings, the Court held that the antievolution law was constitutional.²⁴ Darwin's Theory of Evolution was effectively banned from public education and religion continued to dictate school curriculum, but in 1968, oh how the tables would turn.²⁵

An Arkansas public school's new textbook, "Modern Biology," placed Susan Epperson, a young Arkansas teacher, in quite the conundrum—abstain from teaching evolution or break the law—so Epperson brought action to have the law declared void.²⁶ Recognizing the importance of ensuring constitutional protection in the classroom, the Court found that "the State may not . . . 'aid or oppose' any religion."²⁷ Furthermore, because the State merely has the right to educate students, not the right to ban science, the Court laid out the first considerations used to determine whether a particular law is neutral: examine the "the *purpose* and the *primary effect*" of the particular act.²⁸ The law's preference for the biblical account of creation was the decisive factor in the Court's decision.²⁹ Therefore, the Court held that laws prohibiting public schools from teaching evolution were unconstitutional; and school districts across America

²² *Id.*

²³ *Id.* at 366–67 ("At the time of the adoption of our Constitution . . . England and Scotland maintained state churches . . . and it was intended by this clause of the Constitution to prevent any such undertaking in Tennessee.").

²⁴ *Id.* at 364–67 (comparing Scopes's obligations to the state to obligations in a master-servant relationship).

²⁵ See *Epperson v. Arkansas*, 393 U.S. 97 (1968) (banning antievolution laws).

²⁶ *Id.* at 101–03 (noting that only two states currently maintained antievolution laws and not a single person in Arkansas's history had actually been convicted of breaking the law).

²⁷ *Id.* at 107 (quoting *Abington Sch. Dist. v. Schempp*, 374 U.S. 203, 225 (1963)).

²⁸ *Id.* (quoting *Abington Sch. Dist. v. Schempp*, 374 U.S. 203, 222 (1963)).

²⁹ *Id.* at 108–09 (acknowledging that Arkansas's law contained "less explicit language," yet was nonetheless motivated by a desire to ban teaching anything other than the "divine creation of man").

began teaching Darwin's Theory of Evolution as part of their science curriculum.³⁰

B. The Creation Spiral: If You Can't Beat 'Em, Join 'Em, or, at Least Imitate 'Em

In *Daniel v. Waters*, the Tennessee legislature was again at the frontlines of the battle; the Tennessee legislation required "an equal amount of emphasis" between evolutionary theories explaining the origins of mankind and the Genesis account found in the Bible.³¹ But the Tennessee legislature's attempt was doomed from the start; before even applying the *Lemon* test,³² the Court found that the law's preference for the biblical account of creation was "unconstitutional on its face."³³

Seven years after *Daniel* legalized teaching evolution, in *McLean v. Arkansas*, a district court found the "Balanced Treatment for Creation-Science and Evolution-Science Act" unconstitutional.³⁴ The Court described creation science as being falsely predicated on the idea that evolution "presuppose[s] the absence of a creator."³⁵ Then,

³⁰ *Id.* at 109 ("The law's effort was confined to an attempt to blot out a particular theory because of its supposed conflict with the Biblical account . . .").

³¹ See *Daniel v. Waters*, 515 F.2d 485, 487 (6th Cir. 1975). In addition, the Tennessee law referred to evolution as an "opinion," banned referring to evolution as a fact, and directed students to the Bible as a reference text. *Id.*

³² See *Lemon v. Kurtzman*, 403 U.S. 602, 612–13 (1971). Building on the standards originally laid out in *Epperson*, in *Lemon* the Court explained that "[t]he Constitution decrees that religion must be a private matter," thereby establishing the boundaries of the Establishment Clause. *Id.* at 625. In *Lemon*, the Court established the test that continues to guide courts' analyses: "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.'" *Id.* at 612–13 (internal citation omitted) (quoting *Walz v. Tax Comm'n*, 397 U.S. 664, 674 (1970)). *Lemon* explained, "[i]n order to determine whether the government entanglement with religion is excessive, we must examine the character and purposes of the institution that are benefited, the nature of the aid that the state provides, and the resulting relationship between the government and the religious authority." *Id.* at 615.

³³ *Daniel*, 515 F.2d at 489.

³⁴ *McLean v. Ark. Bd. Of Educ.*, 529 F. Supp. 1255, 1274 (E.D. Ark 1982).

³⁵ *Id.* at 1266 (criticizing the idea that life "was either the work of a creator or it was not" as "an extension of Fundamentalists' view that one must either accept the literal interpretation of Genesis or else believe in the godless system of evolution.").

upon examining the scientific merits of creation science, the Court held that creationism was not science.³⁶ The Court applied the *Lemon* test and found that the Act was passed “with the specific purpose . . . of advancing religion,” lacked educational value, and entangled the State with religion by requiring the State to govern the balancing.³⁷

Mimicking earlier attempts to merge the Bible with scientific explanations and implement a “balanced” curriculum, Louisiana enacted the “Creation Act” in 1982. The Creation Act required that if evolution was taught, “creation science” must also be taught; the constitutionality of the Creation Act was challenged in *Edwards v. Aguillard*.³⁸ Highlighting the importance of forbidding “sham” purposes, the Supreme Court investigated the legislature’s stated purposes—“academic freedom” and “teaching all of the evidence”—and determined that the Act was motivated by a desire to narrow the science curriculum and, therefore, that the stated purpose was in fact a “sham.”³⁹ The Court stated: “The preeminent purpose of the Louisiana Legislature was clearly to advance the religious viewpoint that a supernatural being created humankind.”⁴⁰ Consequently, the Court’s decision ended “creation science,” effectively banning teaching creationism as an alternative to evolution in public schools.⁴¹

C. Ignorance is Bliss; Critically Analyze . . . a Few, Specific Subjects

Eighty years after *Scopes v. State*, creationism resurfaced once again, boasting a sophisticated new name, exuding an air of academia,

³⁶ *Id.* at 1267–72.

³⁷ *Id.* at 1264, 1272.

³⁸ See *Edwards v. Aguillard*, 482 U.S. 578, 580–81 (1987). The Act defined “creation science” as the scientific evidence for creation and inferences from that evidence. *Id.* at 581.

³⁹ *Id.* at 586–89 (stating “the purpose [should] be sincere”). The Court found that by attempting to prohibit evolution, the legislature was actually restricting “academic freedom” and causing the opposite effect of “discrediting ‘evolution by counterbalancing its teaching at every turn with the teaching of creationism.’” *Id.* at 589 (quoting *Aguillard v. Edwards*, 765 F.2d 1251, 1257 (5th Cir. 1985)).

⁴⁰ *Id.* at 591.

⁴¹ *Id.* at 591–93 (finding that creation science “embodies the religious belief that a supernatural creator was responsible for the creation of humankind” and that the legislature’s attempt to “advance a particular religious belief” violated the First Amendment).

and supposedly shedding its religious past—Intelligent Design (ID).⁴² The School Board in Dover, Pennsylvania successfully passed a policy requiring a disclaimer be read to students in ninth grade biology classes, informing students that they were “required” to learn Darwin’s Theory, that “[t]he Theory is not a fact,” and that “Intelligent Design” was an acceptable alternative theory.⁴³ Additionally, students were offered a supplemental text, “*Of Pandas and People*” and, after directing them to their parents for any further inquiries, the disclaimer reminded students that they should “keep an open mind”; the parents of eleven students enrolled in the Dover school district challenged the new policy in federal court.⁴⁴

In considering ID’s status as a scientific theory,⁴⁵ the District Court was critical of the Intelligent Design Movement’s (Movement) justifications for ID as a scientific theory.⁴⁶ First, a thirteenth-century religious argument by Thomas Aquinas was identified as articulating identical reasoning to the “purposeful arrangement of parts” argument presented in support of ID.⁴⁷ Second, the “father” of ID, Phillip Johnson, stated “evolution contradicts . . . every word in the Bible” and “theistic realism” is the cornerstone of ID.⁴⁸ Third, several expert witnesses, testified in support of the Movement that ID’s fundamental goal was to broaden science and implement theistic understanding into education.⁴⁹ But, as with its predecessors, the determining factor guiding the court’s decision was ID’s ultimate reliance on supernatural causation.⁵⁰ Accordingly, the changes to the School Board’s

⁴² *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 708–09 (M.D. Pa. 2005).

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *See infra* note 107.

⁴⁶ *See Kitzmiller*, 400 F. Supp. 2d at 716–22 (discussing how the Movement came about in reaction to cases that found the teaching of creation science unconstitutional).

⁴⁷ *Id.* at 718 (noting one difference between Intelligent Design and its predecessors was that ID’s “official position” did not recognize a God). The “purposeful arraignment of parts” argument is exactly as it sounds: “[w]herever complex design exists, there must have been a designer; nature is complex; therefore nature must have an intelligent designer.” *Id.*

⁴⁸ *Id.* at 719.

⁴⁹ *Id.* at 720–21.

⁵⁰ *Id.* at 721; *see Epperson v. Arkansas*, 393 U.S. 97, 109 (1968); *Edwards v. Aguillard*, 482 U.S. 578, 592 (1987).

supplemental textbook, *Of Pandas and People*, immediately after the court's decision in *Edwards*, led the court to find that ID was nothing more than "creationism re-labeled."⁵¹

The court applied both the Endorsement test and the *Lemon* test, explaining that the Endorsement test essentially was a "lens through which to view" *Lemon*'s second-prong—the "effect" inquiry.⁵² The Endorsement test consists of "determining what message a challenged governmental policy or enactment conveys to a reasonable, objective observer," which includes both a student and a citizen.⁵³ Recognizing the importance of protecting constitutional rights in the classroom, the court went on to consider whether an objective observer would perceive the policy as promoting or discriminating against religion.⁵⁴ Imputed with the relevant historical and cultural background knowledge, attributed with intellectual sophistication, and cognizant of the legal implications of the School Board's ID policy, this hypothetical observer is presumed to be more astute than an average citizen.⁵⁵ After defining the scope of an objective observer, the court applied the Endorsement test to the School Board's policy and

⁵¹ *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 721–22 (M.D. Pa. 2005).

"By comparing the pre and post *Edwards* drafts of *Pandas*, three astonishing points emerge: (1) the definition for creation science in early drafts is identical to the definition of ID; (2) cognates of the word creation (creationism and creationist), which appeared approximately 150 times were deliberately and systematically replaced with the phrase ID; and (3) the changes occurred shortly after the Supreme Court held that creation science is religious and cannot be taught in public school science classes in *Edwards*."

Id.

⁵² *Id.* at 714.

⁵³ *Id.* at 714–16 (recognizing "that when government transgresses the limits of neutrality and acts in ways that show religious favoritism or sponsorship, it violates the Establishment Clause."). The Endorsement test "emanates from the prohibition against government endorsement of religion and it preclude[s] government from conveying or attempting to convey a message that religion or a particular religious belief is *favored* or *preferred*." *Id.* at 714 (alteration in original) (citations omitted) (internal quotation marks omitted).

⁵⁴ *Id.* at 723–24 (reasoning that because students are both young and impressionable in addition to being compelled to attend school, assuring compliance with the Establishment Clause is vital in public schools).

⁵⁵ *See id.*

determined that the policy constituted “an endorsement of a religious view.”⁵⁶

First, by listing evolution, and only evolution, as a “*required*” subject, the disclaimer sent the wrong message and highlighted evolution as a problematic theory.⁵⁷ Then, by singling out evolution and labeling it as “just a theory,” the disclaimer misrepresented scientific evidence and played on common misconceptions, thereby discrediting evolution and laying the groundwork for presenting ID in a favorable light, resulting in “stupid” students.⁵⁸ After diminishing the credibility of evolution, the disclaimer introduced ID as a contrasting, alternative “explanation,” then directed students to *Of Pandas and People* for further explanation, as if it were “scientific” evidence verifying ID as a valid theory.⁵⁹ Finally, students were encouraged to “keep an open mind” and directed to their families for any further questions regarding ID, which, as noted by the court, undermines the fundamental goal behind all education—critical thinking.⁶⁰

The Court found that the plain text of the disclaimer conveyed a message of religious endorsement to students; however, the Court went on to explain that two other considerations sealed the fate of the disclaimer.⁶¹ First, the classroom presentation portrayed ID as “carry[ing] special weight” and restricting any further discussion of ID

⁵⁶ See *id.* at 731.

⁵⁷ See *id.* at 724–25. The only subject mentioned was biology, and the only aspect of biology discussed was evolution. *Id.* “The first paragraph . . . disavows evolutionary theory . . . by telling students that they have to learn about evolutionary theory because it is required . . .” *Id.*

⁵⁸ See *id.* at 725. The Court recognized the School Board’s attempt to fool the public by playing on the “colloquial” understanding of the word “theory” and suggesting “that evolution was only a highly questionable opinion or hunch.” *Id.* (internal quotation marks omitted). After misrepresenting the definition of a scientific theory, the disclaimer told students that there are “gaps” in Darwin’s theory but did not offer any alternative explanations for such “gaps.” *Id.* As noted by the expert witness, “confusing students about science generally and evolution in particular . . . makes students ‘stupid.’” *Id.*

⁵⁹ See *id.* The Court saw the policy as an attempt to deceive the public through wordplay by labeling evolution as a “theory” but labeling ID as an “explanation.” See *id.* The Court compared this strategy to the “contrived dualism” tactics employed by creationists. *Id.*

⁶⁰ *Id.* at 726 (“It ‘reminds students that they can rightly maintain beliefs taught by their parents,’ thereby stifling critical thinking . . .” (quoting Freiler v. Tangipahoa Bd. of Educ., 185 F.3d 337, 346 (5th Cir. 1999))).

⁶¹ *Id.*

gave it an air of being an exciting, forbidden “secret science” that was off limits in schools.⁶² Second, by allowing students to “opt-out” of the presentation, a hint of “novelty” was added to the disclaimer’s overall effect, effectively ostracizing the students choosing to “opt-out.”⁶³ Accordingly, the court found that requiring students to choose between God and science would lead an objective observer, whether student or citizen, to perceive the School Board’s policy as conveying a “strong official endorsement of religion.”⁶⁴

The Kitzmiller Court also examined ID’s status as a scientific theory. The cornerstone of science is the scientific method and, because ID ignores the scientific method, “ID is not science.”⁶⁵ According to Judge Jones, ID fails as science for three reasons: (1) by relying on supernatural causation, ID contradicts the underlying principles of science; (2) ID’s primary argument, “irreducible complexity,” is identical to creation science’s primary argument of “contrived dualism,” which courts have consistently rejected as science; and (3) the scientific community refuted, and continues to refute, ID’s discrediting evidence attacking evolution.⁶⁶

Simply put, “science is limited to empirical, observable and ultimately testable data.”⁶⁷ As ID is premised on untestable “supernatural causation,” virtually every credible scientific association agrees that ID is not science.⁶⁸ Once again, the ID Movement’s own proponents and expert witnesses were the strongest factor weighing

⁶² *Id.* at 727. “In addition, the objective student would understand that the administrators are reading the statement because the biology teachers refused to do so on the ground that they are legally and ethically barred from misrepresenting a religious belief as science . . . provid[ing] the students with an additional reason to conclude that the District is advocating a religious view in biology class.” *Id.*

⁶³ *Id.* at 727–28. Exposing students to such a dilemma sent a “clear message to students . . . that [non-adherents] are outsiders, not full-members of the political community.” *Id.* (citing *Santa Fe Indep. School Dist. v. Doe*, 560 U.S. 290, 309–10 (2000)).

⁶⁴ *Id.* at 729.

⁶⁵ *Id.* at 735.

⁶⁶ *Id.* “A teacher’s reading of a disclaimer that not only disavows endorsement of educational materials but also juxtaposes that disavowal with an urging to contemplate alternative religious concepts implies School Board approval of religious principles.” *Freiler v. Tangipahoa Bd. of Educ.*, 185 F.3d 337, 346 (5th Cir. 1999).

⁶⁷ *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 735 (M.D. Pa. 2005).

⁶⁸ *See id.* at 736–37.

against ID; revealing ID's inherently religious nature, expert witnesses conceded that ID's goal was to "replace [current] science" with "theistic and Christian science" and even admitted that ID was a "fringe science."⁶⁹

"Irreducible complexity," ID's fundamental argument, posits that ID is true because evolution cannot yet explain certain processes, which advocates of ID claim can be explained by a higher, omniscient designer.⁷⁰ The court, however, focusing on the absence of positive arguments supporting ID, deemed "irreducible complexity" to be logically flawed and stated that ID's primary evidence was nothing more than a series of *negative* attacks on evolution.⁷¹ Since relying on supernatural causation is a "science stopper," the *Kitzmiller* court held that the School Board's disclaimer promoted religion in violation of the Endorsement test.⁷²

In fact, due to the distortion and misrepresentation of scientific evidence, ID was deemed as antiscience; the court noted that there was not a single legitimate study supporting ID.⁷³ Accordingly, the School Board's policy was held to be in violation of the Establishment Clause.⁷⁴ ID was dealt the same fate as "antievolution laws," "creationism," "balanced-legislation," "academic-freedom bills," and "creation science"—banned from being taught as an alternative to evolution in public education.⁷⁵

⁶⁹ *See id.* at 736–39.

⁷⁰ *Id.* at 738.

⁷¹ *Id.* at 738. ("Just because scientists cannot explain today how biological systems evolved does not mean that they cannot and will not be able to explain them tomorrow... and absence of evidence is not evidence of absence."). Additionally, these negative arguments were based on dated experiments and several of ID's irreducibly complex processes have, in fact, been proven reducible. *Id.* at 740–43.

⁷² *Id.* at 736.

⁷³ *Id.* at 743.

⁷⁴ *Id.* at 765.

⁷⁵ *Id.* at 746–47 ("ID is an interesting theological argument, but... it is not science."). Although violating the endorsement test was enough to deem the disclaimer unconstitutional, the Court went on to examine the disclaimer under the *Lemon* test. *Id.* at 746. Repeated expressions of interest regarding implementing creationism into the curriculum, multiple discussions with the Discovery Institute, and delaying the purchase of new biology textbooks all suggested religious undertones concerning the new disclaimer. *Id.* at 748–51. And attempts to prevent the purchase of new textbooks, forcing *Pandas* on the teachers, and ignoring a "prudent warning" of the of the disclaimer's inherently

D. Wave of the Future: Critiques, Controversies, and Weaknesses

After enduring a gauntlet of defeat, 2008 marked a huge victory for the creationist movement, as the Louisiana legislature passed the “Louisiana Science Education Act.”⁷⁶ Aimed at “promot[ing] critical thinking,” discussing “scientific theories,” and “objectively review[ing] scientific theories,” the Louisiana Act permitted teachers to use, at their own discretion, “supplemental textbooks and other instructional materials.”⁷⁷ And sporting a new First Amendment disclaimer, the Act preemptively denied any possibility of promoting or discriminating against any religious belief, signifying a return of religiously motivated laws.⁷⁸

Four years later, unsurprisingly in Tennessee, a new “monkey law” was successfully passed.⁷⁹ Almost identical to Louisiana’s Act, Tennessee’s law was aimed at “develop[ing] critical thinking skills” and listed specific subjects, including evolution, as causing “debate and disputation,” which resulted in “unsure” teachers.⁸⁰ Arguing they were “[r]espond[ing] appropriately to differences of opinions *required* to be taught,”⁸¹ Tennessee lawmakers barred the state’s administrators from “prohibit[ing]” teachers from helping students “critique and review . . . the scientific strengths and weaknesses of existing scientific

religious nature all brought ID’s religious motives to light. *Id.* at 750–57. But after changing the curriculum and isolating portions of the community by informing the public of the disclaimer, the definitive factor divulging the true purpose behind the disclaimer, was the complete absence of evidence indicating any other motivation behind the policy. *Id.* 758–63. Thus, the Court found the policy’s true purpose was to “promote religion in the public school classroom,” and, therefore, in violation of the *Lemon* test. *Id.* 763–64.

⁷⁶ LA. REV. STAT. ANN. § 17:285.1 (2011).

⁷⁷ *Id.* More specifically, the Act encourages discussion of “evolution, the origins of life, global warming, and human cloning.” *Id.*

⁷⁸ *Id.* “This Section shall not be construed to promote any religious doctrine, promote discrimination for or against a particular set of religious beliefs, or promote discrimination for or against religion or nonreligion.” *Id.*

⁷⁹ S.B. 893, 107th Gen. Assemb., 1st Reg. Sess. (Tenn. 2011) (enacted).

⁸⁰ *Id.*

⁸¹ *Id.*

theories.”⁸² Similar to Louisiana’s Act, the Tennessee law also ended with a preemptive First Amendment disclaimer.⁸³

While Louisiana and Tennessee are the only states that have successfully passed such laws thus far, they will likely not be the last.⁸⁴ In 2011, legislators in both Kentucky⁸⁵ and Florida⁸⁶ sponsored similar bills. The “Kentucky Science Education and Intellectual Freedom Act” encouraged discussing the “advantages and disadvantages” of “theories” and permitted additional “textbooks and instructional materials” to help explain such controversies.⁸⁷ The Florida Act championed the importance of “critical analysis . . . of the theory . . . of evolution,” and allowed outside “books and materials” to help critique evolution.⁸⁸ Both laws included preemptive First Amendment disclaimers similar to the disclaimers in Louisiana and Tennessee laws.⁸⁹

New Mexico’s 2011 Act stated that public schools “shall not prohibit” teaching the “strength and weaknesses” of “controversial scientific topics,” including evolution.⁹⁰ The bill even broadly defined “scientific information” as including “religious tenets.”⁹¹ Similarly, in 2011 and 2012 the Oklahoma legislature proposed bills with the aim of “develop[ing] critical thinking skills”; the bills were concerned that teaching “some scientific concepts . . . can cause controversy,” resulting in “unsure teachers.”⁹² And, on par with all its predecessors, the law granted teachers permission to teach the “scientific strengths

⁸² *Id.*

⁸³ *Id.* “This section only protects the teaching of scientific information, and shall not be construed to promote any religious or non-religious doctrine, promote discrimination for or against a particular set of religious beliefs or non-beliefs, or promote discrimination for or against religion or non-religion.” *Id.*

⁸⁴ *See, e.g.*, S.B. 1854 (Fla. 2012); H.B. 195 (Tex. 2011); H.B. 195, 96th Gen. Assemb., 1st Reg. Sess. (Mo. 2011); H.B. 195 (Ky. 2011); S.B. 554, 51st Leg., 1st Sess. (Okla. 2011); H.B. 302, 50th Leg., 1st Sess. (N.M. 2011).

⁸⁵ H.B. 195 (Ky. 2011).

⁸⁶ *Id.*

⁸⁷ S.B. 1854 (Fla. 2012).

⁸⁸ *Id.*

⁸⁹ H.B. 195, 151st Leg., (Ky. 2011); S.B. 1854 (Fla. 2012).

⁹⁰ H.B. 302, 50th Leg., 1st Sess. (N.M. 2011).

⁹¹ *Id.* The act prohibited religious writings, beliefs, or doctrines. *Id.*

⁹² S.B. 554, 51st Leg., 1st Sess. (Okla. 2011).

and weaknesses” of “theories.”⁹³ Both laws included preemptive First Amendment disclaimers similar to their sister bills.⁹⁴

III. FALLACIES & EMOTION: A DANGEROUS CONCOCTION

A. The Recent Legislation: Administrators Just Don’t Understand John Q. Public

Most Americans understand and acknowledge evolution to some degree, but according to a 2005 Pew Research Center poll “substantial majorities of the public” support including creationism in public education’s science curriculum.⁹⁵ The poll found moreover that over one-third of Americans prefer to abandon teaching evolution all together in favor of creationism.⁹⁶ While diversity is vital to education, the public’s views on what should be taught in science classes suggest a degree of ignorance with regard to America’s understanding of common words.⁹⁷

Manipulating language to spark emotion has proven to be a key tactic to allow this century-old game of whack-a-mole to continue.⁹⁸ First apparent with the scientific sounding language of the 60s,⁹⁹ 70s,¹⁰⁰ and 80s,¹⁰¹ the law makers behind these fishy statutes and

⁹³ *Id.*

⁹⁴ See H.B. 302, 50th Leg., 1st Sess. (N.M. 2011); S.B. 554, 51st Leg., 1st Sess. (Okla. 2011).

⁹⁵ THE PEW RESEARCH CENTER, *Public Divided on Origins of Life: Religion A Strength and Weakness for Both Parties* 10 (Aug. 30, 2005), available at <http://www.people-press.org/2005/08/30/religion-a-strength-and-weakness-for-both-parties/> (finding 65% of people prefer creationism be taught alongside evolution, compared with only 26% of people opposing the idea).

⁹⁶ *Id.* (finding 38% of people polled felt that creationism should replace evolution in public schools).

⁹⁷ See *id.* “For example, among people who oppose teaching creationism either along with or instead of evolution, 27% personally take the creationist position on human origins. Similarly, 19% of people who think creationism should be taught instead of evolution nevertheless personally believe in evolution through natural selection.” *Id.*

⁹⁸ Stephen Jay Gould, *Evolution as Fact and Theory*, DISCOVER (May 1981), at 34–37, available at http://www.stephenjaygould.org/library/gould_fact-and-theory.html (last visited Dec. 21, 2012).

⁹⁹ See *Epperson v. Arkansas*, 393 U.S. 97, 101–03, 107–09 (1968).

¹⁰⁰ See *supra* notes 31–33 and accompanying text.

¹⁰¹ See *Edwards v. Aguillard*, 482 U.S. 578, 580–81 (1987).

policies have evolved from simply using scientific sounding language to patently misrepresenting science by taking advantage of common vernacular misconceptions.¹⁰²

The layman understands a “theory” to be an “imperfect fact,”¹⁰³ a simple suggestion or belief; the common understanding of what constitutes a theory is broad enough to include virtually any combination of ideas.¹⁰⁴ To further cultivate such popular misconceptions, antievolutionists have taken advantage of every opportunity to exploit the colloquial understanding of the term “theory” and, in effect, fool the public.¹⁰⁵ Several states, moreover, have labeled evolution as a “hypothesis” or even a “concept.”¹⁰⁶ The scientific community, however, restricts the term “theory” to testable, physical subject matter.¹⁰⁷ Misleading America’s future generations

¹⁰² See *supra* notes 34, 38, 79–85 and accompanying text.

¹⁰³ Gould, *supra* note 98, at 34–35.

¹⁰⁴ See *supra* Part II.

¹⁰⁵ See *supra* notes 56, 60, 65, 79–85 and accompanying text.

¹⁰⁶ See, e.g., S.B. 554, 51st Leg., 1st Sess. (Okla. 2011).

¹⁰⁷ First, a “thought,” a mere “notion,” or an “abstract idea”—the term “concept” lies at the birth of scientific endeavor that, after running through the scientific method, may potentially evolve into an established scientific theory. THE NATIONAL ACADEMY OF SCIENCES, SCIENCE, EVOLUTION, AND CREATIONISM 11 (2008). Next, if a concept has merit, scientist will propose various “hypothesis” that must be tested and verified. *Id.* Then, if verified, a hypothesis transforms into a scientific “theory”—an idea “so well established that no new evidence is likely to alter [it] substantially.” *Id.* “[Theory] refers to a comprehensive explanation of some aspect of nature that is supported by a vast body of evidence.” *Id.* For example, heliocentric theory, the theory that humans are made from cells, and the theory of plate tectonics are all so well supported by evidence that their basic explanations will likely never change. *Id.* And, at the farthest end of the spectrum, a well-defined “theory” may become a scientific “fact”—[a] scientific explanation that has been tested and confirmed so many times that there is no longer a compelling reason to keep testing it.” *Id.* According to the National Academy of Sciences, “evolution is a scientific fact.” *Id.* “[B]ecause the evidence supporting it is so strong, scientists no longer question whether biological evolution has occurred and is continuing to occur. Instead, they investigate the mechanisms of evolution, how rapidly evolution can take place, and related questions.” *Id.* See also *Daubert v. Merrell Dow Pharm.*, 509 U.S. 579, 593 (1993); HUGH G. GAUCH, SCIENTIFIC METHOD IN PRACTICE 83 (2003) (“in order to make any observations at all, scientists must be driven by a theoretical framework that raises specific questions and generates specific interests”).

because of a social dispute is inappropriate and cultivating scientific misconceptions will inevitably lead to “stupid students.”¹⁰⁸

Critical thinking, objectivity, and skeptical investigation are all essential elements of education, but the recent legislation may prove to be counter-productive, thus, opposing the very principles the legislators purport to support.¹⁰⁹ By advocating “critical analysis”¹¹⁰ of scientific evidence and subsequently isolating evolution along with other, particular, scientific “theories,” the recent legislation casts an unnecessary shadow of doubt over well-established scientific theories.¹¹¹ More importantly, isolating these few theories as the only subjects deserving a heightened level of scrutiny out of the entire public school curriculum undermines the very essence of “critical thinking”—thinking. The legislation insinuates that these theories are problematic and even encourages students to approach such theories with a skeptical attitude, as if such scientific principles were actually in dispute.¹¹²

After discrediting evolution as merely a “theory” and encouraging a substantial critique of such “theories,” the various acts encourage weighing the “strengths and weaknesses” of “controversial” theories including evolution. Such a claim is deceiving; according to the National Academy of Sciences, “[t]here is no scientific controversy about the basic facts of evolution.”¹¹³ Furthermore, virtually the entire scientific community accepts evolution by means of natural selection as firmly established and well proven.¹¹⁴ The supposed “controversial”

¹⁰⁸ See *supra* note 58 and accompanying text. See also *Epperson v. Arkansas*, 393 U.S. 97 (1968); *Daniel v. Waters*, 515 F.2d 485 (1975); *Edwards v. Aguillard*, 482 U.S. 578 (1978); *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707 (M.D. Pa. 2005).

¹⁰⁹ See Part II.D.

¹¹⁰ See, e.g., S.B. 893, 107th Gen. Assemb., 1st Reg. Sess. (Tenn. 2011) (enacted) (listing a purpose of the bill was to “help students develop critical thinking skills”); LA. REV. STAT. ANN. § 17:285.1 (2011) (stating a goal behind the Act was to help “promote[] critical thinking . . . and open and objective discussion of . . . theories being studied including, but not limited to, evolution, the origins of life, global, and human cloning.”).

¹¹¹ See *supra* Part II.D.

¹¹² See Part II.D.

¹¹³ THE NATIONAL ACADEMY OF SCIENCES, SCIENCE, EVOLUTION, AND CREATIONISM 52 (2008).

¹¹⁴ Ronald K. Hodgson & Shu-ping C. Hodgson, *A survey on University Students’ Understanding of the Place of Evolutionary Biology in the Creation/Evolution*

nature of evolution is not even related to the theory's scientific merit, but rather the controversy itself is propelled by emotion.¹¹⁵ In effect, the bills are actually going against their underlying goals—"teaching the controversy" and "academic freedom"—by misrepresenting the scientific status of well-established theories.¹¹⁶

Restricting the authority of state actors by granting teachers unrestricted permission to teach as they subjectively see fit, not only challenges the state's employment authority, but also presents a huge opportunity for class room indoctrination to creep in through wily teachers.¹¹⁷ As employees of the state, teachers have an obligation to teach the curriculum mandated by the state and granting unregulated authority over young minds supplants our democratic system.¹¹⁸ Also, the degree of supervision potentially required to ensure constitutional compliance will inevitably entangle the state with religion, for, then, the state must determine what is religious and what is not.¹¹⁹

The newest legislative strategy—preemptive First Amendment strikes¹²⁰—exhibits repressed apprehension concerning the acts' potential success. By contrasting "religion" with "non-religion" and "beliefs" with "non-beliefs," the language implies the opposing sides are mutually exclusive enemies, thereby inflaming this century old battle.¹²¹ Further, using the negative prefix "non" may insult "non-religion[s]" and "non-belie[vers]"¹²² by suggesting a lack or absence of beliefs, views, and perspectives. These contrasts not only spark further tension between the different fields, but also entail a hint of discrimination for these so called "non[s]" and possibly a preference for "religion"—especially the Biblical version. The fact that legislators even felt the need to include a preemptive disclaimer conveys an

Controversy, 14 THE JOURNAL OF EVOLUTION AND SCIENCE CREATION 29, 35 (1994)

¹¹⁵ See *infra* notes 130–132 and accompanying text.

¹¹⁶ See Part II.D.

¹¹⁷ See Part II.D.

¹¹⁸ See *Scopes v. State*, 289 S.W. 363, 364–67 (Tenn. 1927).

¹¹⁹ See *McLean v. Ark. Bd. Of Educ.*, 529 F. Supp. 1255, 1264, 1272 (E.D. Ark 1982)

¹²⁰ See LA. REV. STAT. ANN. § 17:285.1 (2011); S.B. 893, 107th Gen. Assemb., 1st Reg. Sess. (Tenn. 2011) (enacted); H.B. 195, 151st Leg., (Ky. 2011); S.B. 1854 (Fla. 2012).

¹²¹ *Id.*

¹²² *Id.*

aggressively defensive approach, suggesting that the legislators knew they had something to preempt and even recognized the acts' religious undertones.¹²³

While Judge Jones' opinion in *Kitzmiller v. Dover* was nothing short of impressive, perhaps banning ID from science is too restrictive.¹²⁴ Linking ID with “deeply held beliefs” unnecessarily cast a religious aura over an area of science that, as noted by the court, “should continue to be studied, debated, and discussed.”¹²⁵ Furthermore, by qualifying ID as “an alternative to evolution,” the court may be establishing an overly broad restriction in an exciting, growing area of scientific endeavor.¹²⁶ Perhaps the recent legislation teaches an invaluable lesson as to the ultimate objectives of education; while preferring or discriminating against any religion is prohibited, broad restrictions on the bounds of education may be detrimental if taken too far. As evidenced by the recent legislation, the point of no return is becoming miniscule.¹²⁷

So good on state legislators for promoting skepticism in education; teaching the controversy, however, does not mean making excuses for uncertain teachers. Rather it means ensuring teachers understand the material themselves and are confident in communicating that information to students.¹²⁸ Distorting information to confuse students and parents is not only unethical,¹²⁹ but also hazardous to the entire nation. Instead, educators should strive to truly teach the controversy and educate students on objectively analyzing and evaluating empirical evidence through properly applying the scientific method.

¹²³ See Asma T. Uddin, *Evolution Toward Neutrality: Evolution Disclaimers, Establishment Jurisprudence Confessions, and a Proposal of Untainted Fruits of a Poisonous Tree*, 8 RUTGERS J.L. & RELIGION, 12, 22 (2007) (“because disclaimers have the effect of establishing religion and are motivated by a religious purpose, they are likely constitutionally problematic;”) Uddin also stresses that teaching evolution in schools “may constitute anti-religious bias.” *Id.*

¹²⁴ *Kitzmiller v. Dover*, Area Sch. Dist., 400 F. Supp. 2d 707 (M.D. Pa. 2005).

¹²⁵ *Id.* at 765.

¹²⁶ See *supra* note 71 and accompanying text.

¹²⁷ See Part II.D.

¹²⁸ See *supra* notes 77, 88 and accompanying text.

¹²⁹ See *Kitzmiller v. Dover*, Area Sch. Dist., 400 F. Supp. 2d 707, (M.D. Pa.2005) (citing Edwards that “Families entrust public schools with the education of their children . . .”).

B. America Divided

To understand the persistence behind the creationist movement and to explain how religion continues to challenge evolution after more than eighty years of rejection, it is vital to understand the mentality of the American public. According to the Pew Research Foundation, more than nine out of ten Americans believe in God; seventy-eight percent of whom are Christian, and half of whom are Protestant.¹³⁰ And while eight out of ten people feel science benefits society, a little over half of Americans sense an implicit conflict between religion and science.¹³¹ The public is even more skeptical about accepting evolution; less than one-third of Americans understand that humans evolved through natural processes, and over half believe evolution was ultimately guided by divine intervention.¹³² Of Americans who understand the theory of evolution through natural selection, more than half are not affiliated with a particular religion and have never attended church.¹³³

According to the Pew Research Center almost half of persons identifying as Protestant *reject* the theory of evolution and, instead, believe that life originated in its present form.¹³⁴ The public's opinion as to the credibility of evolution has undoubtedly improved over the years; however, such blind denial is in stark contrast to the scientific community's overwhelming acceptance of the theory of evolution.¹³⁵ Contrasting opinions, misleading evidence, and widespread misapprehension as to the status of science have all effectuated a "communication gap" distancing the public from the scientific community.¹³⁶

¹³⁰ THE PEW RESEARCH CENTER, *U.S. Religious Landscape Survey: Religious Beliefs and Practices: Diverse and Politically Relevant 5* (June 2008). While 92% of Americans believe in God, only 60% feel that people have a personal relationship with God, 25% believe in an impersonal God, and 7% do not know. *Id.*

¹³¹ *See Masci, supra* note 19.

¹³² *Id.* Furthermore, persons unaffiliated with a particular religion are more likely to perceive a conflict between religion and science—more specifically, 32%. *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *See* Hodgson & Hodgson, *supra* note 114 at 29. Eighty-seven per cent of scientists agree that evolution occurred over time though natural selection, while only two per cent of scientists reject Darwin's theory. Masci, *supra*, note 19.

¹³⁶ Hodgson & Hodgson, *supra* note 114 at 35.

Among persons strictly believing in creationism, over half think they are most suitable to teach their own children the theory of evolution, yet less than one-third of those who understand evolution through natural selection feel that parents should be the primary voice in teaching children evolution.¹³⁷ Comparatively, only 16% of creationists feel that scientist or science teachers should teach students evolution, whereas almost half of people understanding evolution prefer scientist and science teachers educate our youth.¹³⁸ Considering the fact that fundamentalist have successfully misled the public as to the definitions of such common terms as “concept,” “hypothesis,” and “theory” numerous times over the last century, perhaps it would be more beneficial to society if education is left up to the educated educators whose entire career is focused on educating.¹³⁹

Only half of Americans know that practically the entire scientific community accepts the theory of evolution and, astoundingly, one-third of Americans think scientist completely disagree about the credibility of evolution.¹⁴⁰ Creationist with literal interpretations of the Bible are significantly more inclined to be “very certain” as to their explanations for the origin of life, yet persons accepting evolution are less certain of their beliefs.¹⁴¹ A plurality of Americans, unsurprisingly, credits their religious views as the most influential factor guiding their beliefs, whereas most persons accepting evolution cite their education as the primary influence on their views.¹⁴² Such a vulnerable, ill-informed populace lays a promising foundation for enacting improper laws, only limited by lack of funding; however, wherever there is potential influence, funding is never far away.

IV. CONCLUSION

Where does it end? And, should it end? Fundamentalists demanding that the biblical version of creation be taught in public

¹³⁷ *Id.* at 11.

¹³⁸ *Id.*

¹³⁹ *See supra* Part II.

¹⁴⁰ THE PEW RESEARCH CENTER, *Public Divided on Origins of Life: Religion A Strength and Weakness for Both Parties* 9 (Aug. 2005), available at <http://www.pewforum.org/Politics-and-Elections/Public-Divided-on-Origins-of-Life.aspx>. By an 82%-13% margin, those who accept natural selection theory see a scientific consensus on the issue.” *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

schools have successfully kept the issue alive. From banning evolution to teaching the controversy, creationists have proven time and time again that the issue is not as simple as first perceived. The recent wave of state legislation also indicates that even advocating critical analysis in education leaves room for religious beliefs to slip into science classes. But, while misrepresenting scientific standards and casting facile doubts on scientific theories may not be appropriate for the classroom, the creationist movement makes a valid point—teach the true controversy!