

## Playing the Proof Game: Intelligent Design and the Law

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*Intelligent design advocates argue that excluding intelligent design from educational and scientific environments discriminates in favor of methodological naturalism and against other approaches for understanding natural phenomena. These arguments are flawed both legally and philosophically. In order to succeed ID advocates need to demonstrate that ID is science and that public school classes and scientific institutions are public fora for speech. Legal scholarship has generally ignored the most relevant arguments from philosophy of science and the relationship of those arguments to constitutional concepts. This article demonstrates that even when ID is given the benefit of the best scientific, philosophical, and legal arguments it is unequipped to take advantage. This is because, in part, ID is a response to several important cases decided under the Establishment Clause, and the form the ID movement has taken reflects a plan to avoid the legal defeats that creationism and “creation science” faced. Intelligent design is essentially a marketing plan to claim credibility in public discourse and to avoid conflict with inconvenient court decisions. At least as to the latter goal ID advocates are likely to fail.*

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– “Design theory promises to reverse the stifling dominance of the materialist worldview, and to replace it with a science consonant with Christian and theistic convictions.”<sup>1</sup>

– “Concepts concerning God or a supreme being of some sort are manifestly religious. . . . These concepts do not shed that religiosity merely because they are presented as a philosophy or as a science.”<sup>2</sup>

#### I. INTRODUCTION

Every day in public schools, universities, houses of worship and coffee shops a battle rages over where humanity came from or, more specifically, how humans came to be human. Much of the debate is focused on whether a supposedly new concept of human origins—Intelligent Design—should be taught in public schools. Yet few people know much about this “new” concept, how it came to the fore, and what it means for law, science, faith and the future of America.

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1. Internal memorandum from the Discovery Inst. (1998) (since released to the general public) [hereinafter *Wedge Document*]. The full text of the *Wedge Document* is also available on the Internet at <http://www.antievolution.org/features/wedge.html>, and is discussed in detail in BARBARA FOREST & PAUL R. GROSS, CREATIONISM'S TROJAN HORSE: THE WEDGE OF INTELLIGENT DESIGN (Oxford Univ. Press 2004).

2. *Edwards v. Aguillard*, 482 U.S. 578, 599 (1987) (Powell, J., concurring) (citing *Malnak v. Yogi*, 440 F. Supp. 1284, 1322 (D. N.J. 1977)).

Intelligent design advocates have a vested interest in this confusion. Intelligent Design (ID) is partially a response to several important cases decided by the United States Supreme Court.<sup>3</sup> Confusion regarding the history and nature of ID has the potential—so far unrealized—to serve its advocates well in future legal battles. ID is, in part, a savvy marketing response to repeated legal defeats for creationism and “creation science” in public schools. ID is more about marketing creation in a manner that will enable it to be taught in public schools and accepted in public discourse than it is about real scientific disagreement.<sup>4</sup> This is why ID advocates rarely acknowledge that the “intelligent designer” is God.

Many people of faith believe that God must have had some role in the complexity we observe in the universe. This belief is, however, inherently theistic and therefore problematic when introduced as science in public schools. Nevertheless, numerous people of faith believe in what can loosely be called Theistic Evolution—quite simply, the notion that although the scientific proof for evolution is overwhelming, this does not preclude a belief that God created life.<sup>5</sup> Evolution might simply be the mechanism that God used to create life.<sup>6</sup>

From the perspective of Theistic Evolution there is no reason to teach the theistic aspects of any concept of human origins in science classrooms. This is because Theistic Evolutionists accept modern science and do not see it as inconsistent with faith—faith is faith and not science. Conversely, Intelligent Designers seek to explain the existence of the designer through what they argue is science, an argument that is at

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3. See *Edwards*, 482 U.S. 578 (law requiring “balanced treatment” of evolution and “creation science” violates the Establishment Clause); *Epperson v. Ark.*, 373 U.S. 97 (1968) (law prohibiting the teaching of evolution in public schools violates the Establishment Clause).

4. See generally FOREST & GROSS, *supra* note 1 (discussing strategy of ID advocates to gain public acceptance by using scientific jargon to mask religious base); ROBERT PENNOCK, *TOWER OF BABEL: THE EVIDENCE AGAINST THE NEW CREATIONISM* (MIT Press 1999) [hereinafter PENNOCK] (discussing strategy of ID’s use of scientific jargon and also discussing the evolution of ID from earlier forms of creationism). See also Kent Greenawalt, *Establishing Religious Ideas: Evolution, Creationism, and Intelligent Design*, 17 NOTRE DAME J.L. ETHICS & PUB. POL’Y 321 (2003) (thoughtful discussion about ID’s use in public schools and the broader scientific and philosophical questions raised in that context).

5. Ironically, many biblical creationists could find ID troubling because it denies what they believe to be biblically mandated truth by failing to acknowledge openly that the designer is God and because ID seemingly rejects certain literalistic interpretations of the book of Genesis. Cf. PENNOCK, *supra* note 4, at 18-26, 226-228 (discussing similar battles between Old Earth Creationists and Young Earth Creationists).

6. In fact, for over a thousand years some Jewish and Christian theologians have acknowledged similar ideas, and the Catholic Church has recently acknowledged this position. See John Thavis, *Evolution and Creation: A Recurring Papal Theme, Often Misunderstood*, CATHOLIC NEWS SERVICE (Feb. 1, 2008).

the core of the issue.<sup>7</sup> This has significant legal ramifications because it causes ID proponents to enter into what this Article will refer to as the “proof game.”

If ID advocates simply proposed their ideas in a philosophical or theological context—ideas that are already thousands of years old in those disciplines<sup>8</sup>—there would be little dispute. After all, in a free society there is nothing wrong with believing in design. The problem arises when ID enters the “proof game” in the scientific context. The movement has a vested interest in doing this so that it can market its ideas in science classrooms,<sup>9</sup> but to do so legitimately and without violating the Constitution, ID must be science, and thus the proof game is everything to ID proponents.<sup>10</sup>

By couching ID as science and not theology ID proponents are able to argue for access to the forum of scientific debate. As will be discussed, they often treat the scientific realm as a limited public forum for debate of “scientific” theories.<sup>11</sup> They then claim that ID is being discriminated against when it is excluded from that forum.<sup>12</sup> These claims rely on free speech concepts such as viewpoint discrimination and

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7. See MICHAEL BEHE, *DARWIN'S BLACK BOX: THE BIOCHEMICAL CHALLENGE TO EVOLUTION* (Simon & Schuster 1998); WILLIAM A. DEMBSKI, *INTELLIGENT DESIGN: THE BRIDGE BETWEEN SCIENCE & THEOLOGY* (Intervarsity Press 1999).

8. See *infra* notes 150-52 and accompanying text.

9. FORREST & GROSS, *supra* note 1 (discussing the marketing strategies of the ID movement); PENNOCK, *supra* note 4, at 344-77.

10. See *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 735-46 (M.D. Pa. 2005) (proof that ID is science is central to constitutional analysis and ID proponents' were unable to prove ID is science, so ID cannot constitutionally be promoted by public schools).

11. Cf. David K. DeWolf, Stephen C. Meyer & Mark Edward DeForrest, *Teaching the Origins Controversy: Science, Or Religion, Or Speech?*, 2000 UTAH L. REV. 39, 106 (“While public schools are not public fora per se, they are publicly funded places where ideas are exchanged. Thus, if public schools or other governmental agencies bar teachers from teaching about design theory but allow teachers to teach neo-Darwinism, they will undermine free speech and foster viewpoint discrimination.”); see also *id.* at 56-57 (“Thus, those biologists who seek to insulate their preferred theories from critique by rhetorical gerrymandering—that is, by equating dominant evolutionary theories with science itself and then treating all criticism of such theories as necessarily “unscientific”—themselves act in a profoundly unscientific manner.”).

12. See Francis J. Beckwith, *Public Education, Religious Establishment, and the Challenge of Intelligent Design*, 17 NOTRE DAME J.L. ETHICS & PUB. POL'Y 461, 489-90 (2003) (“Thus, forbidding the teaching of ID (or legitimate criticisms of evolution) in public schools because it lends support to a religion, while exclusively permitting or requiring the teaching of evolution, might be construed by a court as viewpoint discrimination, a violation of state neutrality on matters of religion, and/or the institutionalizing of a metaphysical orthodoxy, for ID and evolution are not two different subjects (the first religion, the second science) but two different answers about the same subject.”); see also DeWolf et al., *supra* note 11, at 58 (“But clearly students would not be well served by presenting a false picture of agreement where in fact there is controversy.”).

content discrimination, often cast by ID proponents in broad terms like “academic freedom” and “fairness.”<sup>13</sup> These arguments are, however, question begging. If ID is a scientific theory it might have a place in scientific discourse, but if not such claims will fail. Otherwise, alchemy could claim a place in chemistry classrooms, astrology in astronomy classes and UFOlogy in a number of fields. Access to a limited public forum requires that one meet the terms of the forum.<sup>14</sup> If ID is not science, ID advocates would have to argue that science classrooms are general public fora in order to include ID in science classes. If this were the case, anyone could say anything in such classes.<sup>15</sup>

In order to justify including Intelligent Design in scientific courses under current legal standards the ID movement needs to redefine science.<sup>16</sup> In a recent landmark case involving Intelligent Design in public schools, a biologist who is also a leading proponent of ID theory acknowledged under intense questioning that a definition of science that would include Intelligent Design would also include astrology.<sup>17</sup> In all fairness to this biologist, he had no choice but to concede this point because, as will be explained later in this Article, avoiding this conundrum is impossible when trying to include ID within the definition of science. The key for present purposes is that the definition of science is so important to ID proponents precisely because of the law surrounding the teaching of human origins in public schools and universities.

In response to these concerns ID proponents often raise the specter of “secular humanism” and “scientific materialism.”<sup>18</sup> They argue that evolutionary biology privileges secular humanism and a materialistic

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13. See *supra* notes 11-12 and accompanying text; see also Jay D. Wexler, *The Scopes Trope*, 93 GEO. L.J. 1693, 1695-96 (2005) (reviewing LARRY A. WITHAM, *WHERE DARWIN MEETS THE BIBLE: CREATIONISTS AND EVOLUTIONISTS IN AMERICA* (2002)) (“[I]ntelligent design advocates have argued that notions of academic freedom, equality, and educational comprehensiveness require school boards and officials to allow teachers to introduce students to intelligent-design theory and, in some cases, even require them to do so.”).

14. See *Perry Education Ass’n v. Perry Local Educators’ Ass’n*, 460 U.S. 37, 45-46, 54-55 (1983); *Hague v. Comm. for Indus. Org.*, 307 U.S. 496 (1939).

15. See *Perry*, 460 U.S. 37 (public fora must be open to all speech that does not violate reasonable time, place, and manner restrictions).

16. See *Kitzmiller*, 400 F. Supp. 2d at 735-46.

17. See *id.* at 736 (“[D]efense expert Professor Fuller agreed that ID aspires to ‘change the ground rules’ of science and lead defense expert Professor Behe admitted that his broadened definition of science, which encompasses ID, would also embrace astrology.”).

18. See FORREST & GROSS, *supra* note 1 (discussing the *Wedge Document* developed by leading ID advocates that sets forth these concerns). The full text of the *Wedge Document* can be found *infra* note 104.

world-view and excludes all alternatives.<sup>19</sup> They claim ID provides a counterbalance to the establishment of secular humanism in public schools.<sup>20</sup> Yet they do so without arguing that ID is a religious alternative. Rather, they argue that ID is an alternative to “scientific materialism,” as they define it.<sup>21</sup> As will be discussed, when the history and tenets of ID are considered, this argument amounts to the same thing as openly acknowledging that ID is a religious concept. Moreover, what ID proponents call “secular humanism” is really just plain “secularism.”<sup>22</sup> Thus, secular humanism is a straw man in this debate. This also has serious implications.

Another facet of the ID debate involves a persecution complex that many ID advocates seem to have internalized, and in which legal conceptions play a significant role. In a recent movie entitled, *Expelled: No Intelligence Allowed* (2008),<sup>23</sup> Ben Stein suggests that Intelligent Design advocates are being persecuted in the educational and scientific arenas and that this persecution conflicts with free speech and intellectual fairness.<sup>24</sup> Similar arguments have been made by a number of ID proponents.<sup>25</sup> Yet, there are standards and law that explain what can and cannot be done in academic contexts, and as with most things, the story of these “expulsions” told by Stein and others leaves out many salient and important facts.<sup>26</sup> Surely, Mr. Stein raises some important questions about academic and scientific discourse, but as will be seen the answers are not quite what Mr. Stein and other ID proponents suggest.<sup>27</sup>

Part II of this Article explores the U.S. Supreme Court’s treatment of creationism and “creation science” in cases that have had a profound impact on the arguments made by ID advocates. Part III explains what Intelligent Design is (and is not). This Part provides detailed discussion

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19. *See id.*

20. *See generally* FRANCIS J. BECKWITH, *LAW, DARWINISM, AND PUBLIC EDUCATION: THE ESTABLISHMENT CLAUSE AND THE CHALLENGE OF INTELLIGENT DESIGN* (Rowman & Littlefield 2003) (arguing that ID provides an alternative to materialistic approaches in science).

21. PHILLIP JOHNSON, *DARWIN ON TRIAL* (Inter-Varsity Press 1991) (discussing “scientific materialism” in ID context).

22. FRANK S. RAVITCH, *MASTERS OF ILLUSION: THE SUPREME COURT AND THE RELIGION CLAUSES 109-10* (NYU Press 2007) (addressing the difference between secular humanism, humanism, and secularism, and explaining that arguments alleging the establishment of secular humanism are generally only arguments about government secularism).

23. *EXPULLED: NO INTELLIGENCE ALLOWED* (Premise Media Corp. 2008) [hereinafter *EXPULLED*].

24. *Id.*

25. *See supra* notes 11-13 and accompanying text; *see also* discussion *infra* Parts V and VI.

26. *See* discussion *infra* Parts III, V, and VI.

27. *See* discussion *infra* Parts V and VI.

of the claims made by ID advocates, the “science” done by these advocates, and a brief overview of the history of the ID movement. Part IV discusses the few cases that have addressed ID directly, and forecasts the impact that these cases may have on future cases involving ID. Part V examines the potential traction ID might gain through the use of speech concepts such as Equal Access and arguments from the philosophy of science that suggest the viability of multiple scientific paradigms. Ultimately, the legal arguments fail because school curricula and research grants are not public forums for speech. The scientific arguments fail because ID presupposes a sort of moral absolutism that undermines any claims that it might make to relativist arguments against epistemology. In addition, the descriptive arguments for relativism in the sciences say little about the normative reality of what can be considered “science” in a given scientific culture. Part VI focuses on claims by ID advocates that they are the victims of discrimination, concluding that to the extent ID is excluded from public school curricula and ID advocates are disregarded by mainstream scientists, there is either no viable form of discrimination occurring or any such discrimination is justified. Part VII provides a brief conclusion.

## II. A BASIC PRIMER ON CREATIONISM, CREATION SCIENCE AND THE SUPREME COURT

On July 20, 1981, Louisiana Governor David C. Treen signed the “*Balanced Treatment for Creation-Science and Evolution in Public School Instruction*” act into law. The law was sponsored by state senator Bill Keith who introduced a related bill in June 1980.<sup>28</sup> The stated purpose of the law was to promote academic freedom,<sup>29</sup> but it did so by requiring that “creation science” be taught whenever evolution is taught in Louisiana public schools.<sup>30</sup> There was no explicit prohibition on teaching creation science before the law was enacted,<sup>31</sup> and under the law there was no requirement that either creation science or evolution be taught.<sup>32</sup> The only requirement was that teachers teach creation science if they teach evolution.

The Louisiana law was an example of what came to be known as “balanced treatment laws.” These laws were supported by the creation science movement, a predecessor to the ID movement.<sup>33</sup> The creation science movement evolved mostly from what are known as “old earth

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28. See *Edwards v. Aguillard*, 482 U.S. 578, 587 (1987).

29. *Id.* at 586.

30. *Id.* at 581, 586.

31. *Id.* at 587.

32. *Id.* at 586-89.

33. See PENNOCK, *supra* note 4.

creationists.”<sup>34</sup> Old earth creationists believe the Earth may be quite old, but that complex life forms—especially human beings—were placed here by God in their present form. Some “young earth creationists” were also involved.<sup>35</sup> Young earth creationists take the time-line in the bible literally and date the creation of the Earth and humanity to about 6,000 years ago.<sup>36</sup>

Interestingly, the “creation science” movement, like the ID movement, was designed to gain public acceptance for creationism, and especially to gain access to public education science classes.<sup>37</sup> By couching creationism in scientific terms, “creation scientists” hoped to be able to win court battles over the constitutionality of teaching creation science in public schools. One of the major strategies creation science advocates employed were “balanced treatment” laws like the one in Louisiana.<sup>38</sup> Creation scientists argued that these laws were designed to promote academic freedom and free speech.<sup>39</sup> The Louisiana law was challenged in federal court shortly after it was signed.<sup>40</sup> The Supreme Court issued its decision on the matter—*Edwards v. Aguillard*—in 1987.<sup>41</sup>

In *Edwards*, the Court held that the Louisiana law was unconstitutional because its purpose was to promote a religious concept, creation science, and not to promote academic freedom.<sup>42</sup> *Edwards* was a major defeat for the creation science movement, and was also a defining moment for what would become the Intelligent Design movement.

The *Edwards* Court focused exclusively on whether the Louisiana “Balanced Treatment Act” had a valid secular purpose.<sup>43</sup> After looking

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34. *Id.* at 14-26.

35. *Id.* at 10-26.

36. The specific date and year for creation as accepted by many biblically literalist Protestant sects was estimated to be October 23, 4004 B.C.E. by Dr. John Lightfoot, Vice-Chancellor of Cambridge University in 1644. Over a decade later in 1658, Bishop James Ussher, an Anglican clergyman and Vice-Chancellor of Trinity College in Ireland published the book, *THE ANNALS OF THE WORLD*, upon which many young earth creationists rely for the date of creation. Ussher’s year and date for the beginning of creation are identical to Lightfoot’s (although there was a discrepancy about the exact hour of creation, which Ussher did not include in his account).

37. See FORREST & GROSS, *supra* note 1.

38. See *Edwards v. Aguillard*, 482 U.S. 578, 587 (1987); see also *Daniel v. Waters*, 515 F.2d 485 (6th Cir. 1975) (finding Tennessee statute requiring “balanced treatment” in textbooks unconstitutional); *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255 (E.D. Ark. 1982) (same for Arkansas “balanced treatment” act).

39. See *Edwards*, 482 U.S. at 596.

40. *Id.* at 581-82.

41. 482 U.S. 578 (1987).

42. *Id.* at 586-89, 591-93, 596-97.

43. *Id.*



at the language of the Louisiana “Balanced Treatment” law,<sup>44</sup> the statements of Senator Keith who introduced it,<sup>45</sup> statements by other legislators and government officials,<sup>46</sup> and statements by those who testified before the legislature on the bill,<sup>47</sup> the Court held that the purpose of the law was to promote creationism and to favor the views of certain Christian denominations.<sup>48</sup> The Court did not accept the state’s argument that the law was designed to promote academic freedom.<sup>49</sup> It found instead that the law could not serve the purpose of promoting academic freedom because the law limited rather than expanded such freedom.<sup>50</sup>

Weighing heavily against the claim of a valid secular purpose were the facts that the law’s proponents spoke in explicitly religious terms and that creation science posits that human beings were placed on Earth by a supernatural creator.<sup>51</sup> Moreover, the Court found that the law was designed to counter evolution with creationism “at every turn,”<sup>52</sup> which served the religious beliefs of certain religious groups.<sup>53</sup> To make matters worse for the state, the law provided support for additional creation science teaching materials but not for the development of additional evolution materials,<sup>54</sup> the law explicitly provided protection for teachers who taught creation science but not for those who taught evolution (even though under the law if one was taught the other had to be taught).<sup>55</sup> Perhaps most important for the present discussion, the Court rejected the notion that creation science did not promote religion because it marketed itself as science.<sup>56</sup> The following quote from *Edwards* is particularly relevant to the ID debate:

. . . The preeminent purpose of the Louisiana Legislature was clearly to advance the religious viewpoint that a supernatural being created humankind. . . . Senator Keith’s leading expert on creation science, Edward Boudreaux, testified at the legislative hearings that the theory

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44. *Id.* at 581, 586-89.

45. *Id.* at 587, 591-93.

46. *Id.* at 591.

47. *Id.* at 591 n.13.

48. *Id.* at 592-94, 596-97.

49. *Id.* at 586-88.

50. *Id.* at 587-89 (“[U]nder the Act’s requirements, teachers who were once free to teach any and all facets of this subject are now unable to do so.”).

51. *Id.* at 587-94.

52. *Id.* at 589.

53. *Id.* at 588-89, 592-93.

54. *Id.* at 588.

55. *Id.*

56. *Id.* at 590-94; *see also id.* at 599 (Powell, J., concurring).

of creation science included belief in the existence of a supernatural creator. . . .<sup>57</sup>

Significantly, the *Edwards* decision, and the defeat of “balanced treatment” acts in other courts,<sup>58</sup> became an impetus for what would eventually become the Intelligent Design movement.<sup>59</sup> In fact, when one looks at the basic tenets of the ID movement it seems clear that ID was designed, in part, to avoid some of the problems that doomed “creation science” in the courtroom.<sup>60</sup> After all, a major goal of the ID movement is to introduce ID in public schools.<sup>61</sup> None of the grander plans of the ID movement will succeed if ID can not gain access to public school classrooms and win the hearts and minds of future “scientists” and philosophers of science.

This development is a bit ironic because “creation science” was itself a response to earlier legal defeats for laws that promoted creationism either through requiring that it be taught by prohibiting the teaching of evolution, or both.<sup>62</sup> The most notable of these earlier cases, *Epperson v. Arkansas*,<sup>63</sup> was decided by the United States Supreme Court in 1968. In that case the Court held that an Arkansas law prohibiting the teaching of evolution in its public schools and universities violated the Establishment Clause.<sup>64</sup> The Arkansas law made it a crime to teach evolution in public schools and universities, and exposed any teacher who did so to dismissal.<sup>65</sup> The Little Rock school district recommended in 1965 a new biology text, which included instruction on evolution.<sup>66</sup> A young biology teacher in the district, Susan Epperson, realized that if she taught the evolution section in the new book she would potentially be subject to dismissal and criminal liability under the state law, even though the school district had approved the text.<sup>67</sup> She believed that teaching the material was in the best interest of her students

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57. *Id.* at 591 (footnote omitted).

58. “Balanced treatment” acts were also defeated in *Daniel v. Waters*, 515 F.2d 485 (6th Cir. 1975) (finding Tennessee “balanced treatment” law unconstitutional) and *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255 (E.D. Ark. 1982) (same for Arkansas act).

59. See FORREST & GROSS, *supra* note 1.

60. *Id.*

61. *Id.* at 217-39; see also BECKWITH, *supra* note 20 (leading ID advocate argues, in part, that ID can and should be taught in public schools).

62. See PENNOCK, *supra* note 4.

63. 393 U.S. 97 (1968).

64. *Id.*

65. *Id.* at 98-99.

66. *Id.* at 99.

67. *Id.* at 100.

and she sued the state, asking the courts to declare the law unconstitutional and therefore unenforceable against her and others.<sup>68</sup>

The Court agreed with Ms. Epperson.<sup>69</sup> It held the law was unconstitutional because it did not have a secular purpose.<sup>70</sup> The Court found that the Arkansas law was designed to prevent evolution—and only evolution—from being taught in public schools because evolution was antithetical to a particular religion:

there can be no doubt that Arkansas has sought to prevent its teachers from discussing the theory of evolution because it is contrary to the belief of some that the Book of Genesis must be the exclusive source of doctrine as to the origin of man. No suggestion has been made that Arkansas' law may be justified by considerations of state policy other than the religious views of some of its citizens.<sup>71</sup>

Moreover, the law could not be defended on the ground that it was “neutral” as to religion.<sup>72</sup> If a law is found to be “neutral” in regard to religion courts ordinarily find that the law does not violate the Constitution.<sup>73</sup> Any argument that the Arkansas law was religiously neutral because it did not mandate the teaching of creationism or the teaching of human origins generally, was squarely rejected by the Court’s reasoning.<sup>74</sup> The law excluded only discussion of evolution, but not discussion of creationism or human origins generally.<sup>75</sup> Therefore, only the religiously disfavored view was excluded.<sup>76</sup>

Anyone who believed that the debate over teaching human origins in the public schools would die down after *Edwards* failed to learn from

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68. *Id.*

69. *Id.* at 109.

70. *Id.* at 107-10.

71. *Id.* at 107.

72. *Id.* at 103-04, 109.

73. *See, e.g.,* *Zelman v. Simmons-Harris*, 536 U.S. 639 (2002) (applying formal neutrality to uphold school voucher program); *Sch. Dist. of Abington Twp. v. Schempp*, 374 U.S. 203 (1963) (applying neutrality concept to find school prayer and bible reading unconstitutional); *see also* Daniel O. Conkle, *The Path of American Religious Liberty: From the Original Theology to Formal Neutrality and an Uncertain Future*, 75 *IND. L. J.* 1, 8-10 (2000) (discussing formal neutrality and the trend toward its increased use by the Court); Douglas Laycock, *Formal, Substantive, and Disaggregated Neutrality Toward Religion*, 39 *DEPAUL L. REV.* 993 (1990) (analyzing formal and substantive neutrality, and rejecting formal neutrality); Frank S. Ravitch, *A Funny Thing Happened on the Way to Neutrality: Broad Principles, Formalism and the Establishment Clause*, 38 *GA. L. REV.* 489 (2004) [hereinafter Ravitch, *A Funny Thing Happened*] (acknowledging that courts have regularly used a variety of neutrality concepts in deciding cases, but arguing that there is no neutral place from which one can say that a given neutrality approach is neutral).

74. *Epperson*, 393 U.S. at 107-09.

75. *Id.* at 98-99.

76. *Id.* at 109.

the events after *Epperson* that led to the “creation science” movement.<sup>77</sup> As creationism begat creation science, creation science would soon beget a much more powerful offspring, Intelligent Design.<sup>78</sup> The move from creationism to “creation science” had caused a rift among creationists while providing “creation scientists” with new legal ammunition.<sup>79</sup> After that ammunition misfired, the move toward ID would create a firestorm of controversy within which we still dwell.<sup>80</sup>

### III. UNDERSTANDING INTELLIGENT DESIGN

In *Creationism’s Trojan Horse: The Wedge of Intelligent Design*,<sup>81</sup> Professor Barbara Forrest and Paul R. Gross painstakingly document the history of the ID movement. The authors note that ID was designed, in part, as a strategy to get around the numerous legal defeats that both creationism and creation science endured.<sup>82</sup> In fact, however, this link may be even greater than Forrest and Gross argue. Early ID supporters read the language in *Edwards* and other cases and realized that they had to take God out of their theory in order to get it into public schools and into scientific discourse more generally.<sup>83</sup> They also realized that they would need to do work that could, at least plausibly, be called science and that they would need to gain acceptance for this work in the public’s eye.<sup>84</sup>

This intense focus on packaging ID may be why many people perceive ID to be nefarious. It is a marketing strategy designed to gain legal and cultural acceptability. Much of what we see today, including Ben Stein’s recent movie,<sup>85</sup> is that strategy in action.

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77. See generally PENNOCK, *supra* note 4 (discussing the evolution of the “creation science” movement from factions within the broader creationism movement).

78. See *infra* Part III.

79. PENNOCK, *supra* note 4.

80. See *infra* Parts III-V.

81. FORREST & GROSS, *supra* note 1.

82. *Id.* at 275-76.

83. See *id.*; *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 716-23, 735-46 (M.D. Pa. 2005); see also Richard B. Katskee, *Why it Mattered to Dover that Intelligent Design Isn’t Science*, 5 FIRST AMEND. L. REV. 112, 119 (2006) (noting that ID is in part a response to the *Edwards* decision); Nicholas A. Schuneman, *One Nation Under The Watchmaker?: Intelligent Design and the Establishment Clause*, 22 BYU J. PUB. L. 179, 186 (2007); Kevin Trowel, Note, *Divided by Design: Kitzmiller v. Dover Area School District, Intelligent Design, and Civic Education*, 95 GEO. L.J. 855, 858 (2007) (same).

84. See generally FORREST & GROSS, *supra* note 1 (Setting forth ID movement’s strategy to claim the mantle of science and gain public recognition); DEMBSKI, *supra* note 7 (early work by leading ID advocate making such arguments).

85. *EXPELLED*, *supra* note 23.

Among the originators of the ID movement are two law professors, Phillip Johnson and David K. DeWolf.<sup>86</sup> Additionally, Francis Beckwith, a lawyer, has written extensively in support of ID theory and was likewise an early supporter.<sup>87</sup> One might expect that biologists would be the primary originators of what is claimed to be an alternative scientific theory to evolution. However, when one looks at the early proponents of ID there were more philosophers, law professors and social scientists than natural scientists; a number of the natural scientists were not biologists, and not one of the biologists was an evolutionary biologist.<sup>88</sup>

In fact, it was Phillip Johnson, a law professor, who spurred the movement with the 1991 publication of his book, *Darwin on Trial*.<sup>89</sup> Interestingly, the book begins by discussing *Edwards v. Aguillard*.<sup>90</sup> From there Johnson moves into an attack on what many ID advocates refer to as “scientific materialism,” which he defined as attempts “to explain all human behavior as the subrational product of unbending chemical, genetic, or environmental forces.”<sup>91</sup> His ultimate assault in the book is on Darwinian science,<sup>92</sup> and this remains true of ID today.<sup>93</sup>

Much of the basis for ID appears to be a view of the world which promotes the notion that there are absolute moral principles that humans should abide by and are meant to abide by,<sup>94</sup> that Darwinian science removes the basis for such principles by treating human existence as a series of unguided biological accidents (this characterization is not a necessary or an accurate one),<sup>95</sup> and that Darwinianism promotes scientific and natural materialism; that is, the view that natural forces are responsible for everything.<sup>96</sup> Johnson’s book was largely ignored outside the ID community. When the book was noticed by the mainstream

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86. See FORREST & GROSS, *supra* note 1, at 15-20, 174.

87. See, e.g., BECKWITH, *supra* note 20 (arguing that ID can and should be taught in public schools).

88. See FORREST & GROSS, *supra* note 1, at 18-19.

89. JOHNSON, *supra* note 21.

90. See FORREST & GROSS, *supra* note 1, at 15-23.

91. This definition is from the Discovery Institute’s Center for the Renewal of Science and Culture website as it originally existed in 1996. The language on that site has since been changed (although links to the original site are widely available on the Internet), but this or very similar language is found in the Discovery Institute’s *Wedge Document*, the writings of numerous Intelligent Design writers, and Ben Stein’s recent movie *Expelled: No Intelligence Allowed* (2008).

92. JOHNSON, *supra* note 21.

93. See FORREST & GROSS, *supra* note 1.

94. See JOHNSON, *supra* note 21; *infra* note 104.

95. See *id.*

96. See *id.*

scientific community the “scientific” claims made in it were quickly discredited.<sup>97</sup>

In 1992, soon after publication of his book, Johnson was joined by other early ID proponents.<sup>98</sup> By 1996 the Center for the Renewal of Science and Culture was founded at the Discovery Institute.<sup>99</sup> At this point Phillip Johnson and other ID supporters were already working on what has come to be known as the “Wedge Strategy.”<sup>100</sup> In *Creationism’s Trojan Horse*, Forrest and Gross meticulously document the evolution and implementation of this strategy.<sup>101</sup>

The so-called “*Wedge Document*” was produced by the Discovery Institute in 1998. It is essentially a game plan and marketing strategy for ID.<sup>102</sup> Interestingly, the wedge strategy seems an odd vehicle to support a supposedly scientific theory since it is primarily focused on gaining acceptance for a preconceived notion of human existence, and even its discussion of scientific research is couched in terms of gaining acceptance for ID.<sup>103</sup> There is nary a mention of specific scientific methodologies (as opposed to goals) to be used by ID proponents. Nor is there any mention of research that could possibly falsify ID’s core assumptions (this is somewhat ironic, because as will be seen, ID proponents accuse evolutionary biologists of failing to falsify evolution’s core assumptions).<sup>104</sup>

97. See Stephen Jay Gould, *Impeaching A Self Appointed Judge*, SCIENTIFIC AMERICAN, July, 1992, at 118-121.

98. See FORREST & GROSS, *supra* note 1, at 15-23.

99. *Id.* at 19-23 and generally.

100. *Id.* at 15-23.

101. See generally *id.* (providing detailed discussion of the “wedge” strategy and the *Wedge Document*).

102. *Id.* at 16-17, 22-23, 25-27.

103. *Id.*; see also *infra* note 104.

104. The full version of the *Wedge Document* is readily available on the Internet and in several texts. It reads in part:

CENTER FOR THE RENEWAL OF SCIENCE & CULTURE

INTRODUCTION

The proposition that human beings are created in the image of God is one of the bedrock principles on which Western civilization was built. Its influence can be detected in most, if not all, of the West’s greatest achievements, including representative democracy, human rights, free enterprise, and progress in the arts and sciences.

Yet a little over a century ago, this cardinal idea came under wholesale attack by intellectuals drawing on the discoveries of modern science. Debunking the traditional conceptions of both God and man, thinkers such as Charles Darwin, Karl Marx, and Sigmund Freud portrayed humans not as moral and spiritual beings, but as animals or machines who inhabited a universe ruled by purely impersonal forces and whose behavior and very thoughts were dictated by the

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unbending forces of biology, chemistry, and environment. This materialistic conception of reality eventually infected virtually every area of our culture, from politics and economics to literature and art.

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Discovery Institute's Center for the Renewal of Science and Culture seeks nothing less than the overthrow of materialism and its cultural legacies. . . .

#### THE WEDGE STRATEGY

#### FIVE YEAR STRATEGIC PLAN SUMMARY

The social consequences of materialism have been devastating. As symptoms, those consequences are certainly worth treating. However, we are convinced that in order to defeat materialism, we must cut it off at its source. That source is scientific materialism. This is precisely our strategy. If we view the predominant materialistic science as a giant tree, our strategy is intended to function as a "wedge" that, while relatively small, can split the trunk when applied at its weakest points. The very beginning of this strategy, the "thin edge of the wedge," was Phillip Johnson's critique of Darwinism begun in 1991 in *Darwinism on Trial*, and continued in *Reason in the Balance* and *Defeating Darwinism by Opening Minds*. Michael Behe's highly successful *Darwin's Black Box* followed Johnson's work. We are building on this momentum, broadening the wedge with a positive scientific alternative to materialistic scientific theories, which has come to be called the theory of intelligent design (ID). Design theory promises to reverse the stifling dominance of the materialist worldview, and to replace it with a science consonant with Christian and theistic convictions.

The Wedge strategy can be divided into three distinct but interdependent phases, which are roughly but not strictly chronological. We believe that, with adequate support, we can accomplish many of the objectives of Phases I and II in the next five years (1999-2003), and begin Phase III (See "Goals/ Five Year Objectives/Activities").

Phase I: Research, Writing and Publication

Phase II: Publicity and Opinion-making

Phase III: Cultural Confrontation and Renewal

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Phase II. The primary purpose of Phase II is to prepare the popular reception of our ideas. The best and truest research can languish unread and unused unless it is properly publicized. For this reason we seek to cultivate and convince influential individuals in print and broadcast media, as well as think tank leaders, scientists and academics, congressional staff, talk show hosts, college and seminary presidents and faculty, future talent and potential academic allies. Because of his long tenure in politics, journalism and public policy, Discovery President Bruce Chapman brings to the project rare knowledge and acquaintance of key op-ed writers, journalists, and political leaders. This combination of scientific and scholarly expertise and media and political connections makes the Wedge unique, and also prevents it from being "merely academic." . . . Alongside a focus on influential opinion-makers, we also seek

The *Wedge Document* was not originally intended for public consumption. It was leaked and then published on the Internet.<sup>105</sup> The publication of the *Wedge Document* has proven problematic for the ID movement since ID proponents have sometimes argued, in an attempt to distinguish ID from “creation science,” that ID is not an inherently religious or theistic concept.<sup>106</sup> As will be seen, the roots of ID theory are in Christian Apologetics and natural theology, so attempts to deny that the designer is divine seems to be a response to the language in *Edwards* prohibiting the teaching of religious theories that are not falsifiable as science. Denying the designer’s divinity is an attempt to shield ID from legal attacks under the Establishment Clause.<sup>107</sup>

The *Wedge Document* is something of a hole in the armor that is supposed to protect ID from Establishment Clause challenges. In fact, it is a hole that had a significant impact on how the one court to discuss the ID concept in depth viewed ID.<sup>108</sup> None of this would be an issue, of course, if ID proponents did not insist on engaging in the “proof game.” Religious thinkers from Thomas Aquinas to Reverend Paley have argued for theistic design,<sup>109</sup> and there are numerous philosophical and religious arguments in favor of God as an intelligent designer. I contend that these religious and philosophical arguments cannot be proven in any scientific manner and cannot be taught as science in public schools (they can,

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to build up a popular base of support among our natural constituency, namely, Christians. We will do this primarily through apologetics seminars. We intend these to encourage and equip believers with new scientific evidence’s that support the faith, as well as to “popularize” our ideas in the broader culture.

Phase III. Once our research and writing have had time to mature, and the public prepared for the reception of design theory, we will move toward direct confrontation with the advocates of materialist science through challenge conferences in significant academic settings. We will also pursue possible legal assistance in response to resistance to the integration of design theory into public school science curricula. . . .

#### GOALS

\* To defeat scientific materialism and its destructive moral, cultural and political legacies.

\* To replace materialistic explanations with the theistic understanding that nature and human beings are created by God.

105. See FORREST & GROSS, *supra* note 1, at 25.

106. These attempts have so far been unsuccessful in court. See *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 718-19 (M.D. Pa. 2005).

107. See *id.*; see also *supra* note 83 and accompanying text.

108. See generally *Kitzmiller*, 400 F. Supp. 2d 707 (using *Wedge Document* as part of analysis of whether ID is scientific and/or religious, and concluding that it is not scientific and is religiously grounded).

109. See *infra* notes 148-55 and accompanying text.



however, be taught in philosophy and comparative religion classes).<sup>110</sup> In fact, neither Aquinas nor Paley saw any reason to argue that design is not a religious concept.<sup>111</sup> These were clearly faith-based observations of the world around them, observations with which many still agree.

So why seek to prove these ideas “scientifically?” Two reasons are apparent. First, for religious and social reasons ID proponents view scientific materialism as dangerous and a necessary, or at least important, component of moral relativism (a point with which many scientists and philosophers would disagree).<sup>112</sup> ID proponents contrast this with supernaturally inspired views of nature, the world, and moral absolutism, which they believe is necessary.<sup>113</sup> Second, the law! The courts have been clear that faith-based views on creation may belong in philosophy or comparative religion classes, but do not belong in science classes.<sup>114</sup> Therefore, to be able to reach the hearts and minds of the nation’s youth in public schools and universities ID must be viewed as scientific and not grounded solely in religion. The above discussion raises an obvious question. What exactly is ID?

#### A. *A Basic Primer on ID*

There are two overarching components to ID. First, exploiting gaps in evolutionary biology and attacking evolutionary biology generally.<sup>115</sup> Second, trying to demonstrate the designer through the complexity of living organisms.<sup>116</sup> The end goal of both of these tactics is to overthrow scientific materialism and what ID proponents call “naturalism.”<sup>117</sup> Naturalism, according to ID proponents, is the idea that natural forces explain what we see in the world and in living organisms, and that the world and the organisms in it came about through purely natural (i.e. no higher power) mechanisms.<sup>118</sup> Interestingly, this is a straw man argument. One can accept naturalism and the mechanisms said to support it without denying a higher power. In fact, famed biologist

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110. *Edwards v. Aguilard*, 482 U.S. 578, 599 (1987); *Kitzmiller*, 400 F. Supp. 2d 707.

111. *See infra* notes 145-52 and accompanying text.

112. *See supra* note 104.

113. *See id.*; *see also* JOHNSON, *supra* note 21.

114. *See Edwards*, 482 U.S. 578; *Kitzmiller*, 400 F. Supp. 2d 707.

115. *See* BEHE, *supra* note 7; DEMBSKI, *supra* note 7; JOHNSON, *supra* note 21.

116. *See* BEHE, *supra* note 7; DEMBSKI, *supra* note 7.

117. *See supra* note 116; *see also supra* note 104.

118. ID proponents are not alone in couching naturalism in these terms. A leading opponent of ID and supporter of this view of naturalism has made similar arguments to ID proponents on the meaning of scientific materialism and naturalism. *See* RICHARD DAWKINS, *RIVER OUT OF EDEN* 132-33 (Harper Collins 1995) (“The universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind, pitiless indifference.”).

Kenneth Miller wrote extensively about this in *Finding Darwin's God*.<sup>119</sup> It is only because ID proponents enter the scientific proof game that their straw man takes on life. There are many people of faith who accept what ID proponents call “methodological naturalism,”<sup>120</sup> which is just a fancy term for the idea that natural processes have given rise to much of what we see in the world around us. Naturalism is not inherently inconsistent with faith, nor does it preclude the theological notion of God as designer.<sup>121</sup> For people of faith who accept scientific evidence, naturalism may simply suggest that the natural mechanisms observed and documented by scientists are the work of God.<sup>122</sup> The latter point, of course, is beyond scientific proof. This is not a problem until one assumes that (1) naturalism somehow must conflict with faith and (2) that science is the appropriate arena in which to try to prove the existence of the supernatural/divine. ID assumes both of these propositions.<sup>123</sup>

In addition to the two key components mentioned above, a central aspect of ID is the tendency to deny that the “designer” ID refers to is most likely God.<sup>124</sup> Many ID proponents have suggested God is the designer,<sup>125</sup> and the *Wedge Document* is explicit about it, so why not just come out and admit it? *Edwards v. Aguillard* and other legal cases may be one reason. The need to gain acceptance as a “scientific” approach may be another. Yet, when one reads about the ID movement both from its supporters and opponents it seems obvious that the designer they have in mind is God.<sup>126</sup> For present purposes, however, I will take ID advocates’ suggestion that the designer need not be divine at face value, and thus will not refer to the designer as God, except where others have done so.

This, however, creates something of a dilemma when writing on this topic. Constantly referring to the “designer” could become a bit tedious. When I have spoken to general audiences on this topic I have frequently

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119. KENNETH MILLER, *FINDING DARWIN'S GOD: A SCIENTIST'S SEARCH FOR COMMON GROUND BETWEEN GOD AND EVOLUTION* (Harper Collins 1999).

120. *Id.*

121. *Id.*

122. *See generally id.* (the notion that these natural mechanisms are the work of God is a religious question and not a scientific one, but the latter approach does not preclude the former belief).

123. *See* BEHE, *supra* note 7, at 232-55; DEMBSKI, *supra* note 7, at 97-121; JOHNSON, *supra* note 21; *Wedge Document*, *supra* note 104.

124. *See* Jay D. Wexler, *Darwin, Design, and Disestablishment: Teaching the Evolution Controversy in Public Schools*, 56 VAND. L. REV. 751, 814 (2003).

125. *See* *Kitzmiller v. Dover Area Sch. Dist.*, 400 F.Supp.2d 707, 718-720 (M.D. Pa. 2005); FORREST & GROSS, *supra* note 1, at 15-23.

126. *See* *Kitzmiller*, 400 F. Supp. 2d at 718-20; FORREST & GROSS, *supra* note 1, at 15-23.

referred to the designer as Fred so as to emphasize ID proponents' general refusal to openly acknowledge the designer is God. Another name I have used is Beatrice. In this Article I have settled on a name that should work without choosing a gender for the designer. Thus, in this Article the designer will be referred to as "Big D." We will assume that Big D is not necessarily God, even though he or she largely fits the job description.

One of the first things that many ID supporters will tell you is that evolution is just a "theory."<sup>127</sup> The definition of the "term" theory has itself been the subject of volumes,<sup>128</sup> but what ID supporters generally mean by this is something along the lines of, "its just a theory not fact."<sup>129</sup> Again, this is a straw man argument, because calling something a theory in order to cast doubt on its accuracy only works if you believe there is an absolute truth that is absolutely provable without the need to build on prior knowledge. Of course, many scientists and philosophers use the term "theory" in ways different from ID supporters.<sup>130</sup> Still, the existence of evolution is no longer really a "theory" in the way ID supporters use that term.<sup>131</sup>

Indeed, mainstream science has proven that evolution occurred and occurs.<sup>132</sup> The dispute within mainstream science is not over whether evolution is real, but rather over specific aspects of evolution, such as causal mechanisms for certain types of mutations, what drives certain changes at the genetic level, and how a specific environment might affect organisms when that environment experiences climatic or other major changes.<sup>133</sup> No credible mainstream biologist would argue that evolution, including human evolution, did not happen and is simply unproven. Rather, biologists will use scientific means in order to prove

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127. See BECKWITH, *supra* note 20; BEHE, *supra* note 7; DEMBSKI, *supra* note 7; JOHNSON, *supra* note 21.

128. See, e.g., ROBERT INKPEN, SCIENCE, PHILOSOPHY AND PHYSICAL GEOGRAPHY (2005); HENRY PERKINSON, FLIGHT FROM FALLIABILITY: HOW THEORY TRIUMPHED OVER EXPERIENCE IN THE WEST (2001); Fouad Abd-El-Khalick, *On the Role and Use of "Theory" in Science Education Research: A response to Johnston, Southerland, and Sowell*, 91 SCI. EDUC. 187 (2006); Ken Friedman, *Theory Construction in Design Research: Criteria: Approaches and Methods*, 24 DESIGN STUD. 507 (2003); Simon Stow, *Theoretical Downsizing and the Lost Art of Listening*, 28 PHIL. AND LITERATURE 192 (2004).

129. See BECKWITH, *supra* note 20; BEHE, *supra* note 7; DEMBSKI, *supra* note 7; JOHNSON, *supra* note 21.

130. See *supra* note 128 and accompanying text.

131. Cf. MILLER, *supra* note 119, at 54 ("Evolution is *both* fact and theory. It is a fact that evolutionary change took place. And evolution is also a theory that seeks to explain the detailed mechanism behind that change.")

132. See *id.* at 36-56.

133. See *id.* at 54.

or falsify specific hypotheses and, over time, more and more specifics will be understood.<sup>134</sup>

This is how modern science works. No credible scientist regardless of his or her scientific discipline will claim “I have the absolute answer to all the questions surrounding my theory.” Scientists try to prove or falsify an underlying hypothesis, as well as the questions it raises.<sup>135</sup> Frequently, new data begets new questions. The key is that scientists generally try to prove *or falsify* a hypothesis, not just prove it.<sup>136</sup> To proceed otherwise would lead to situations where, for example, someone believes the solar system is the center of the universe, makes an anecdotal argument to prove this point, and assumes its truth. This, of course, has happened historically,<sup>137</sup> and it is not far off from ID.

To say that evolution is just a theory makes as much sense as saying it is just a theory that the Milky Way galaxy is part of a cluster of galaxies. There is plenty of scientific evidence that our galaxy, the Milky Way, is part of a local cluster of galaxies,<sup>138</sup> even if scientists are still working out some of the specifics regarding why galaxies cluster in certain ways and how this clustering effects neighboring galaxies.<sup>139</sup> Thus, the galaxy cluster is a scientific fact, but some of the mechanisms and phenomena regarding galaxy clusters are still being worked out through scientific work designed to prove *or falsify* hypotheses about

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134. *See id.*; *see also* KARL POPPER, LOGIC OF SCIENTIFIC DISCOVERY 40-43 (Hutchinson 1959).

135. *See* POPPER, *supra* note 134, at 40-43. *Cf. generally* LARRY LAUDAN, SCIENCE AND RELATIVISM: SOME KEY CONTROVERSIES IN THE PHILOSOPHY OF SCIENCE (Chicago 1990) (dialogue between positivist, realist, pragmatist, and relativist, where each recognizes that this occurs as a practical matter in “normal” science, but disagrees on the epistemological question of whether one can know that any scientific paradigm is better than another).

136. *See* POPPER, *supra* note 134, at 40-43.

137. *See generally* THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (3d ed. 1996) (recounting historical “scientific” frameworks based on anecdotal or purely deductive arguments).

138. *See* S. N. SHORE, *The Milky Way: Four Centuries of Discovery of the Galaxy, in HOW DOES THE GALAXY WORK? A GALACTIC TERTULIA WITH DON COX AND RON REYNOLDS 1* (Emilio J. Alfaro et al. eds., 2004) (“Recognizing the Milky Way as one of a vast number of stellar systems was one product of the last century, and the birth of modern observational cosmology.”).

139. *See* WILLIAM K. HARTMANN & CHRIS IMPEY, ASTRONOMY: THE COSMIC JOURNEY 424 (6th rev. ed., Brooks/Cole 2002) (“Galaxies are not randomly distributed through space; they tend to cluster in different-size groups. Most of the galaxies in the Local Group are clumped into two subgroups, those around the Milky Way and those around the Andromeda galaxy.”); NAT’L RESEARCH COUNCIL, THE DECADE OF DISCOVERY IN ASTRONOMY AND ASTROPHYSICS 47 (1991) (“Groupings of galaxies, which astronomers call ‘structures,’ are intriguing in their own right. Structures of various sizes abound, and astronomers want to understand the nature of these structures and how they were born.”).

specific mechanisms.<sup>140</sup> To refer to galaxy clusters as “just a theory” because of this would be inane.

Interestingly, ID proponent Guillermo Gonzales has essentially argued that natural mechanisms astronomers have documented are not natural, but rather evidence of Big D.<sup>141</sup> Many of his arguments resemble those discussed below regarding “irreducible complexity” and “complexity by design” only at the cosmological rather than biological scale. Should we now question work by astronomers and physicists on the natural phenomena causing galaxy clusters?

ID has trapped itself in the proof game and it does not have the tools to get out of the trap. Arguing evolution is just a theory—even if one takes that argument at face value—does not prove the involvement of Big D, and ID’s attempts to demonstrate Big D through “science” have done little more than rehash longstanding theological arguments cloaked in supposedly scientific jargon.<sup>142</sup> Let’s take a closer look at how ID attempts to prove its hypothesis. We cannot look at how ID attempts to *falsify* its hypothesis because, unlike mainstream scientists, ID proponents do not ever attempt to falsify the existence of Big D.<sup>143</sup> Big D’s existence and role are assumed.<sup>144</sup>

### B. *Complexity, Design and Gaps: Reinventing Paley’s Wheel*

In 1802, Reverend William Paley published his famous work, *Natural Theology*.<sup>145</sup> In this book Paley discusses the concept of the watchmaker God.<sup>146</sup> His book was part of an important and broader movement particularly popular in the 17<sup>th</sup> and 18<sup>th</sup> centuries, which sought to relate the natural world and religion.<sup>147</sup> Paley, like other theological naturalists, studied the natural world quite seriously and viewed his research through the lens of how the natural world reflects the

140. See HARTMANN, *supra* note 139, at 487 (“Galaxy formation is one of the most hotly debated topics in modern cosmology.”).

141. GUILLERMO GONZALEZ & JAY W. RICHARDS, *THE PRIVILEGED PLANET: HOW OUR PLACE IN THE COSMOS IS DESIGNED FOR DISCOVERY* (2004) (“The fact that our atmosphere is clear; that our moon is just the right size and distance from Earth, and that its gravity stabilizes Earth’s rotation; that our position in the galaxy is just so; that our sun is its precise mass and composition—all of these facts and many more not only are necessary for Earth’s habitability but also have been surprisingly crucial to the discovery and measurement of the universe by scientists.”).

142. See *infra* Part III.B.

143. MILLER, *supra* note 119, at 126-28.

144. See *id.*

145. WILLIAM PALEY, *NATURAL THEOLOGY: SELECTIONS* (Bobbs-Merrill 1963).

146. *Id.* at 3-12.

147. See ALISTER MCGRATH, *THE ORDER OF THINGS: EXPLORATIONS IN SCIENTIFIC THEOLOGY* (Blackwell 2006); Stephanie L. Shemin, *The Potential Constitutionality of Intelligent Design*, 13 *GEO. MASON L. REV.* 621, 663-64 (2005).

divinity of God.<sup>148</sup> Paley's watchmaker analogy can be restated roughly as follows: a person walking through a park comes upon a stone on the ground and in it may see the natural world at work without regard to design. That same person walks through the park again and comes upon a watch. The person, upon observing the watch, is likely to recognize that the watch must have been designed by an intelligent creator, and thus the analogy proceeds to equate complex natural phenomena to the watch and the watchmaker to an intelligent (and divine) creator.<sup>149</sup> Even in Reverend Paley's time this reasoning was not new. The idea goes at least as far back as Plato's famous dialogue, the *Timaeus*.<sup>150</sup> Analogues can be found in the Roman philosopher Cicero's, *De Natura Deorum* (*On the Nature of the Gods*)<sup>151</sup> and in Thomas Aquinas', *Summa Theologica*.<sup>152</sup>

Of course Paley, unlike many ID proponents, did not claim the concept was new, nor did he attempt to hide its connection to the divine. Reverend Paley was unabashedly a Christian Apologist.<sup>153</sup> For those unfamiliar with the concept, Christian Apologetics involves attempting to prove the truth of Christian teachings.<sup>154</sup> Paley had no reason to hide the religious aspects of his research, and in fact his work, when viewed as a work of Christian Apologetics and natural theology, was impressive for its time.<sup>155</sup> But that, of course, is the point. Reverend Paley would not deny that the designer (watchmaker) is God, and he would not deny that natural theology is theology. Paley wrote decades before Darwin published the *Origin of Species*,<sup>156</sup> but Darwin was clearly influenced by the meticulous observation of nature in Paley's work (Darwin also held the same chambers at Cambridge University that Paley had held),<sup>157</sup> but Darwin rejected the Christian Apologetics inherent in the work of natural theologians.<sup>158</sup> Darwin was, of course, far more concerned with proof.<sup>159</sup>

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148. See PALEY, *supra* note 145.

149. *Id.* at 7-12.

150. PLATO, *TIMAEUS* 58-61 (Peter Kalkavage trans., Focus 2001).

151. CICERO, *DE NATURA DEORUM I* (Richard McKirahan ed., Bryn Mawr 1997).

152. THOMAS AQUINAS, *THE SUMMA THEOLOGICA OF ST. THOMAS AQUINAS* (Christian Classics 1981).

153. PALEY, *supra* note 145.

154. See generally NORMAN L. GEISLER, *CHRISTIAN APOLOGETICS* (Baker Academic 1988) (providing definition and examples of Christian apologetic conclusions and methods).

155. PALEY, *supra* note 145.

156. CHARLES DARWIN, *THE ORIGIN OF SPECIES BY MEANS OF NATURAL SELECTION* (Bantam Books 1999) (1859).

157. Compare PALEY, *supra* note 145, with DARWIN, *supra* note 156 (Darwin was clearly influenced by the observations of earlier naturalists like Paley, but not by the theological aspects of that naturalism).

158. DARWIN, *supra* note 156.

159. See generally *id.*

The point is that the watchmaker (ID) argument was not even new in the early 19<sup>th</sup> century, although Reverend Paley's explication of it was quite advanced for its time. Yet, ID proponents claim to have developed "new" theories such as "irreducible complexity" and "specified complexity," which bear a remarkable resemblance to natural theology and creationist arguments.<sup>160</sup> All the ID proponents have done is repackage these old ideas without explicit reference to the divine and sprinkle in some fancy terminology that makes their approach sound more scientific.<sup>161</sup> So let's explore "irreducible complexity" and "specified complexity" in light of Paley's work, mainstream science, and the ID movement's frequent denial that Big D is God.

Michael Behe, a biologist and a leading proponent of ID, proposed the concept of "irreducible complexity" in his well known ID tome, *Darwin's Black Box: The Biochemical Challenge to Evolution*.<sup>162</sup> In this book Behe defines irreducible complexity:

By *irreducibly complex* I mean a single system composed of several well-matched, interacting parts that contribute to the basic function, wherein the removal of any one of the parts causes the system to effectively cease functioning. An irreducibly complex system cannot be produced directly (that is, by continuously improving the initial function, which continues to work by the same mechanism) by slight, successive modifications of a precursor system, because any precursor to an irreducibly complex system that is missing a part is by definition nonfunctional.<sup>163</sup>

Behe compares such a system to a mousetrap.<sup>164</sup> He suggests that if one removes a part of a mousetrap the trap will no longer function, and analogizes this to an irreducibly complex biological function.<sup>165</sup> He claims that if one removes a part of such a system it would no longer function, and thus such a biological system could not have evolved through natural selection because it needs all of its parts to function.<sup>166</sup>

Commentators have demonstrated both the logical and biological fallacy inherent in this argument.<sup>167</sup> First, as Robert Pennock points out, if one removes a part (or parts) of a mousetrap it might cease to function

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160. See PENNOCK, *supra* note 4.

161. See *generally id.* (setting forth an exceptionally well detailed account of the relationship between natural theology, creationism, creation science, and ID).

162. See BEHE, *supra* note 7.

163. *Id.* at 39.

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

165. See *id.* at 42.

166. See *id.* at 43.

167. See, e.g., PENNOCK, *supra* note 4, at 267-68.

as a mousetrap, but what remains will still function for other purposes.<sup>168</sup> Biologist Kenneth Miller has suggested that one could remove the catch and metal bar and still have a fully functional tie clip or paper clip.<sup>169</sup> Others have pointed out that one could remove the wooden base, but the mousetrap would still work if attached to its natural environment—the floor.<sup>170</sup>

The point is that Behe attempts to prove too much with his mousetrap analogy. If one removes a part of a mousetrap one *may* no longer have a functioning *mousetrap*, but one might still have a functioning device.<sup>171</sup> Of course, evolutionary biologists have long known (and proven) that even in complex organisms a function may evolve for one purpose, but eventually may come to serve another through the process of natural selection.<sup>172</sup> Miller's response to Behe's mousetrap analogy demonstrates this nicely. In fact, the scientific evidence against irreducible complexity is overwhelming.<sup>173</sup>

Moreover, irreducible complexity itself is just a rehash of Paley's watchmaker, which of course comes from a work of Christian Apologetics and natural *theology*! Behe simply removes explicit reference to God, adds the connection between irreducible complexity and attempts to disprove natural selection, and sprinkles in a lot of fancy scientific terminology that in the end simply describes Reverend Paley's watchmaker.<sup>174</sup> In an excellent book on the evolution of the ID movement, *Tower of Babel: The Evidence Against the New Creationism*,<sup>175</sup> Professor Robert Pennock, a highly regarded philosopher of science, demonstrates the connection between ID theory and theistic naturalism, including the connection between Behe's work and Reverend Paley's.<sup>176</sup>

Behe is not alone, however, in recasting natural theology in supposedly scientific terms. William Dembski, perhaps the most prolific ID proponent, and a faculty member at the Southwestern Baptist Theological Seminary, argues for "specified complexity."<sup>177</sup> What is

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168. *See id.*

169. Kenneth R. Miller, *The Flaw in the MouseTrap*, NAT. HIST. at 75 (April 2002); Kenneth R. Miller, *The Moustrap Analogy or Trapped by Design*, <http://www.millerandlevine.com/km/evol/DI/Mousetrap.html> (last visited Dec. 21, 2008).

170. E.g., Keith Robison, *Darwin's Black Box Irreducible Complexity or Irreproducible Irreducibility?*, <http://www.talkorigins.org/faqs/behe/review.html> (last visited Dec. 2, 2008).

171. *See supra* notes 168-70 and accompanying text.

172. *See id.*

173. PENNOCK, *supra* note 4, at 263-72.

174. *See* BEHE, *supra* note 162, at 110-13; *see also* PENNOCK, *supra* note 4, at 263-72.

175. PENNOCK, *supra* note 4.

176. *See id.* at 263-72.

177. *See* DEMBSKI, *supra* note 7, at 47.



“specified complexity?” It is an approach grounded in mathematical and logical assumptions which suggest patterns that are both specified and complex—that is, demonstrate characteristics evincing intelligence and which cannot easily be explained by chance—are evidence of design by an intelligent actor.<sup>178</sup> Dembski applies this concept to biological functions in the ID context.<sup>179</sup> Dembski has explained the criteria for specified complexity as follows:

Whenever we infer design, we must establish three things: *contingency*, *complexity*, and *specification*. Contingency ensures that the object in question is not the result of an automatic and therefore unintelligent process that had no choice in its production. Complexity ensures that the object is not so simple that it can readily be explained by chance. Finally, specification ensures that the object exhibits the type of pattern characteristic of intelligence.<sup>180</sup>

Mathematicians and logicians have demonstrated the numerous assumptions and flaws in this approach,<sup>181</sup> and Dembski’s own definition demonstrates the problem. His argument is entirely circular. One must first assume that the three prerequisites to infer design—contingency, complexity, and specification—indeed infer design. Only then can they be relied upon to prove Dembski’s point.<sup>182</sup> Yet, mathematicians have demonstrated that each of Dembski’s three criteria, and his application of them, involves misstatements and mischaracterizations of data and that, in fact, Dembski’s use of “specified complexity” to demonstrate the probability of Big D is ineffective because the data he uses is inadequate to prove how the various biological mechanisms he describes came into being.<sup>183</sup>

Significantly, ID proponents generally rely on two additional arguments. The first involves the “gaps” in evolutionary theory (this argument also relates to Behe and Dembski’s work discussed above).<sup>184</sup> The second involves the concept of “teaching the controversy.”<sup>185</sup> These will be discussed in turn.

Even if irreducible complexity and specified complexity are “junk” theories, ID proponents can still fall back on their argument that

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178. *See id.* at 127-33.

179. *See id.*

180. *Id.* at 128.

181. *See, e.g.,* Jeffrey Shallit & Wesley Elsberry, *Playing Games with Probability: Dembski’s Complex Specified Information*, in *WHY INTELLIGENT DESIGN FAILS: A SCIENTIFIC CRITIQUE OF THE NEW CREATIONISM* 121-23 (Matt Young & Taner Edis eds., Rutgers Univ. Press 2004).

182. *Compare id.* at 128-29 with DEMBSKI, *supra* note 7, at 144-46.

183. *See* Shallit & Elsberry, *supra* note 181, at 144-46.

184. *See infra* notes 186-87 and accompanying text.

185. *See infra* notes 199-209 and accompanying text.

evolution is “just a theory” containing numerous gaps. This idea was briefly discussed at the beginning of this section, but let us explore the argument in more detail here. The argument is essentially that Big D can be found in the gaps in evolutionary theory.<sup>186</sup> It is the notion of “Big D and the gaps,” or as others have suggested the “God of the gaps.”<sup>187</sup>

As was explained above, however, any credible scientific theory about anything remotely complex is likely to have gaps as scientists work out the specifics of the theory.<sup>188</sup> The existence of gaps proves nothing one way or the other. Only someone trying to market a position would suggest that gaps imply anything other than an area that scientists are still exploring. There is essentially nothing to infer. As noted above, the existence of evolution is considered scientific fact.<sup>189</sup> The theoretical aspects of evolution revolve around how specific aspects of the evolutionary process unfold. Any gaps demonstrate only that scientists do not have an answer to a specific question. They say nothing about *any* answer to that question.<sup>190</sup> Thus, filling in the gaps with “irreducible complexity,”<sup>191</sup> “specified complexity,”<sup>192</sup> the Flying Spaghetti Monster, or aliens from the planet Pretenz, says nothing about the validity of evolutionary biology or the approach of the gap-fillers. Advocates of the latter theories would still have to independently prove the validity of those theories. ID proponents do not have the tools to do so, and concepts such as “irreducible complexity” and “specified complexity” prove nothing other than the creativity and preconceptions of those who proposed those concepts.<sup>193</sup>

From a religious perspective one might find ID proponents’ arguments regarding gaps to be quite offensive. God is not just the “God of the gaps” for most monotheistic religious traditions.<sup>194</sup> God is the God of everything.<sup>195</sup> From the perspective of theistic evolution, there is no need for a Big D of the gaps because evolution is a scientific fact, and it is a matter of faith that God used that mechanism.<sup>196</sup> At the other end of the religious spectrum, the Big D of the gaps is also alien to Young Earth

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186. See MILLER, *supra* note 119, at 54-56; PENNOCK, *supra* note 4, at 163-72.

187. See, e.g., PENNOCK, *supra* note 4, at 163-72.

188. See MILLER, *supra* note 119, at 54-56.

189. See *id.*

190. See generally PENNOCK, *supra* note 4. Pennock repeatedly points out the flaws in ID and creationist deductive arguments about the meaning of gaps in scientific theory, as well as numerous other flaws in ID and creationist deductive reasoning.

191. See *supra* notes 162-83 and accompanying text.

192. See *supra* notes 177-83 and accompanying text.

193. See *supra* notes 162-83 and accompanying text.

194. See MILLER, *supra* note 119, at 126-28.

195. See *id.* at 126.

196. See generally *id.*

(and some Old Earth) Creationists because they believe that God created everything in the manner stated in the bible.<sup>197</sup>

Why would ID proponents make an argument that is so belittling to Big D? ID proponents are trying to market their approach so that it can be taught or referenced in public school science classes. Thus, they cannot rely directly on the natural theology approach of Christian Apologetics, and they need to poke holes in their self-perceived arch-nemesis, evolutionary biology.<sup>198</sup> It all comes down to the proof game. If ID did not engage in the proof game there would be no need for the Big D of the gaps. ID could be taught as a longstanding theological or philosophical approach, which directly presumes God is the creator, and it would be subject to counter-arguments from theologians and philosophers rather than scientists. Significantly, ID would be better equipped to engage in a philosophical or theological debate than it is to engage in a scientific debate. Keeping it a theological or philosophical argument would, of course, keep it out of science classrooms under the Establishment Clause, and that would conflict with one of the major reasons for ID theory: marketing a brand of creationism in science classrooms without acknowledging that it is a form of creationism. The law is the *raison d'être* for ID's particular brand of marketing.

Finally, ID proponents rely on an argument focused on "teaching the controversy." By this they mean that ID proponents should advocate that teachers, professors, public personalities, etc., teach about the controversy between ID and mainstream biology.<sup>199</sup> This is a clever rhetorical move. By suggesting that there is a controversy to teach about ID, proponents are attempting to legitimize their approach.<sup>200</sup> Further, by suggesting the alternative to ID is mainstream evolutionary biology and that the disagreements between the two should be taught, ID proponents are able to place their approach on the same rhetorical playing field as mainstream science.<sup>201</sup> In fact, Ben Stein's movie, discussed earlier, focuses heavily on this concept.<sup>202</sup> But alas, this too is a red herring. It is a brilliant rhetorical move and a wonderful use of smoke and mirrors, but, like many other arguments made by ID proponents, the argument to "teach the controversy" proves too much.

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197. See PENNOCK, *supra* note 4, at 10-18.

198. See *id.* at 38-39.

199. See FORREST & GROSS, *supra* note 1, at 206, 235-36.

200. See *id.* at 206, 235; see also *Wedge Document*, *supra* note 104 (explaining that Phase II of the Wedge Strategy is to publicize the idea through the combination of scientific and scholarly expertise, and media and political connections to popularize the idea among influential opinion-makers and in broader culture).

201. See FORREST & GROSS, *supra* note 1, at 235-36.

202. See *EXPULSED: NO INTELLIGENCE ALLOWED* (Premise Media Corp. 2008).

First, the whole notion of “teaching the controversy” assumes that there is an actual controversy to teach about. From the perspective of mainstream science there is not.<sup>203</sup> ID is seen by many mainstream scientists as intellectually dishonest, not real science, etc., but it is not seen as a potential challenger to mainstream science. Later sections will address the notion of scientific paradigms, which ID proponents sometimes rely on to support the argument that there is a “controversy.”<sup>204</sup>

Can something be a controversy when only one party views it as such? For example, let’s say that I believe heavy metal music is the best type of music and you believe country-western is the best. You are quite committed to this position and find my taste in music troubling. I, on the other hand, don’t care one way or the other about your taste in music but just wish you would stop annoying me with arguments about why Mel Tillis is superior to Tesla (which, by the way, is a scientific impossibility). Your comments are irrelevant to my musical choices. Is there really a controversy? The controversy is all in your head. I don’t care; I will go on listening to heavy metal and continue to ignore your arguments. You may choose to no longer be friends with me because of my refusal to accept your truth, but from my perspective there is no controversy outside that in your head.

The above hypothetical focuses on the question of whether there can be a controversy between parties when only one party perceives and treats the controversy as such. This is similar to the relationship between ID and science. Mainstream scientists do not see ID as a competing scientific theory but rather as an annoying distraction from real science.<sup>205</sup> If they engage with ID proponents, it is generally to show the scientific flaws in ID, not to suggest that there is a valid controversy.<sup>206</sup> Of course, anytime a mainstream scientist engages with ID, the engagement can be used to add further rhetorical fuel to the notion that there is a controversy, even though the scientist sees no *scientific* controversy.

Another example, which more directly parallels the implications of the ID movement’s “teach the controversy” approach, demonstrates the results of taking that approach at face value. Some UFO advocates

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203. See generally PENNOCK, *supra* note 4 (pointing out that ID is not serious competition to mainstream science and is not perceived by scientists as such); MILLER, *supra* note 119 (same).

204. See *infra* Part V.B.

205. See Cornelia Dean, *Scientists Feel Miscast in Film on Life’s Origin*, N.Y. TIMES, Sept. 27, 2007, available at <http://www.nytimes.com/2007/09/27/science/expelled.html>.

206. See FORREST & GROSS, *supra* note 1; MILLER, *supra* note 119, at 215-19; PENNOCK, *supra* note 4, at 38.

believe that humans, or at least that our biological ancestors, were placed on earth by aliens.<sup>207</sup> Significantly, this belief differs from the idea that life, or its building blocks, may have arrived on earth from a comet or other extraterrestrial object. The latter theory suggests that the molecular building blocks for life, or maybe even microscopic biological organisms, might have arrived on material that impacted the earth early in its history.<sup>208</sup> The UFO advocates to whom I am referring suggest that advanced civilizations seeded the earth or placed fully developed organisms here.<sup>209</sup> Certainly the arguments made by ID proponents—irreducible complexity, specified complexity, gaps in evolutionary theory—might be used by these folks, and the UFO advocates might argue there is a controversy based on their assertions.

Of course, the key is that they have no direct proof that any advanced alien civilization exists let alone that such a civilization seeded the earth. Should public schools teach this controversy? Is it science? If your answers are “no,” how is this any different from ID? This same hypothetical, of course, could be repeated using alchemy, astrology, and any number of other similar concepts. Thankfully, astrologers, UFOlogists, and alchemists do not generally argue that their approaches should be taught in public school science classes. Whatever their beliefs, they do not market their concepts as *the* alternative to methodological naturalism in the same way ID advocates do.

#### IV. THE COURTS BEGIN TO ADDRESS INTELLIGENT DESIGN

In *Kitzmiller v. Dover Area School District*,<sup>210</sup> a federal district court held that the inclusion of a disclaimer favoring ID in classrooms, the purchase and placement of ID texts in the school library, and conduct by some school board members violated the Establishment Clause of the First Amendment.<sup>211</sup> The key issue in the case was whether ID is religion or science.<sup>212</sup> This issue was important because if ID is a religious concept then including it in science classrooms, even through a

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207. See Ellen Lloyd, *Genetic Engineering in Ancient Times*, AMERICAN CHRONICLE, Oct. 12, 2006, <http://www.americanchronicle.com/articles/14765>; see also ARCHEOLOGY, ASTRONAUTICS AND SETI RESEARCH ASSOCIATION, <http://legendarytimes.com/index.php?op=page&pid=1> (follow “About A.A.S. R.A.” hyperlink) (last visited Dec. 24, 2008) (explaining that believers of AAS RA are proponents of the theory, which hypothesizes that humans have a cosmic past).

208. See Robert Roy Britt, *How Comets Might Seed Planets*, SPACE.COM, Jan. 24, 2000, [http://www.space.com/scienceastronomy/planetearth/dna\\_spacegerm\\_000124.html](http://www.space.com/scienceastronomy/planetearth/dna_spacegerm_000124.html).

209. See Lloyd, *supra* note 207.

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

211. See *id.* at 764-65.

212. *Id.* at 714 (quoting *ACLU v. Black Horse Pike Reg'l Bd. of Educ.*, 84 F.3d 1471, 1486 (3d Cir. 1996)).

mandatory disclaimer, would violate the Establishment Clause.<sup>213</sup> If ID was science, however, there might be an argument that it could be included in such classes despite its religious underpinnings.<sup>214</sup> If ID is neither religion nor science there is no constitutional issue because if it is not religious the Establishment Clause could not be violated,<sup>215</sup> although teaching ID as science would still raise serious educational concerns that could be addressed at the state level. Thus, the best case scenario for ID proponents would be a finding that ID is science, not religion. The best case scenario for those opposing the school board's ID policy would be a finding that ID is not science and is religiously based.

The court heard testimony from leading philosophers of science,<sup>216</sup> biologists,<sup>217</sup> and ID proponents.<sup>218</sup> After hearing all this testimony and evaluating documentary evidence, such as manuscripts of an ID textbook that was virtually identical to a creation science text with "intelligent designer" substituted for God and "intelligent design" for "creation," the court held that ID is not science and that it is a religiously grounded theory.<sup>219</sup> The court's holding that ID is a religiously based theory and not a scientific theory was central to its reasoning under the Establishment Clause.<sup>220</sup> The Supreme Court had already held in *Edwards*<sup>221</sup> that religiously based theories of creation (in that case "creation science") could not be taught in public school science classes without running afoul of the Establishment Clause.<sup>222</sup>

Theologians and philosophers of science testified that ID theory is not a scientific theory and that it is a religious theory.<sup>223</sup> Moreover, the ID proponents' top witnesses had a hard time explaining how ID is science and not religiously grounded:

Moreover, it is notable that both Professors Behe and Minnich [two leading defense experts] admitted their personal view is that the designer is God and Professor Minnich testified that he understands many leading advocates of ID to believe the designer to be God. Although proponents of the ID [movement] occasionally suggest that

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213. *See id.* at 715.

214. The argument, a relatively weak one, would be based on equal access concepts. *See infra* Part V.

215. *Cf. Kitzmiller*, 400 F. Supp. 2d at 711-23 (pointing out constitutional issues arise because ID is a religious theory, not just because it is bad science).

216. *See id.* at 719, 721, 735-36.

217. *See id.* at 724-25, 727-29, 737-38, 740, 743-44.

218. *See id.* at 718-23, 735-45.

219. *See id.* at 735-46.

220. *See id.* at 764.

221. *Edwards v. Aguillard*, 482 U.S. 578 (1987).

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

223. *See Kitzmiller*, 400 F. Supp. 2d at 718.

the designer could be a space alien or a time-traveling cell biologist, no serious alternative to God as the designer has been proposed by members of the ID [movement], including Defendants' expert witnesses. In fact, an explicit concession that the intelligent designer works outside the laws of nature and science and a direct reference to religion is *Pandas'* [the leading ID textbook] rhetorical statement, "what kind of intelligent agent was it [the designer]" and answer: "On its own science cannot answer this question. It must leave it to religion and philosophy."<sup>224</sup>

Once the *Kitzmiller* court determined that ID is not science but religion, the outcome that the school board policies at issue violated the Establishment Clause was unavoidable.<sup>225</sup> Adding to the obvious outcome was the remarkable behavior by some school board members. Members had threatened teachers,<sup>226</sup> burned an evolution mural found in a classroom,<sup>227</sup> laundered the purchase of ID books for the school library through a local church,<sup>228</sup> made brazenly sectarian statements in their official capacities,<sup>229</sup> engaged in sectarian attacks on board members and members of the public who disagreed with them,<sup>230</sup> and lied on the stand and in depositions.<sup>231</sup> Once the court determined that ID is not science and is religiously grounded, all of this bad behavior was simply icing on the evidentiary cake. Even without it the policy would have been unconstitutional under the prevailing legal tests applied in similar Establishment Clause cases.<sup>232</sup>

The court applied the endorsement and *Lemon* tests to the school board policy.<sup>233</sup> It held that the disclaimer and the other events surrounding the disclaimer (including the acquisition of ID textbooks for the school library) violated the endorsement test<sup>234</sup> and the purpose and effects prongs of the *Lemon* test.<sup>235</sup> Thus, the school board policy violated the Establishment Clause.<sup>236</sup> Because the court found that ID is not science and overwhelming evidence proved that it is religiously

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224. *Id.* at 718-19 (citations omitted).

225. *See id.* at 764.

226. *See id.* at 749, 755, 762.

227. *See id.* at 753.

228. *See id.* at 755-56.

229. *See id.* at 748-53.

230. *See id.*

231. *See id.* at 748, 752.

232. *See id.* at 714-35.

233. *See id.* at 712-14.

234. *See id.* at 714-35, 765.

235. *See id.* at 746-65.

236. *See id.* at 765.

grounded, the court held that the school board's policy violated both the purpose and effects elements of the endorsement test.<sup>237</sup>

The evidence demonstrated that the purpose of implementing the ID policy was to endorse the majority school board members' religious views,<sup>238</sup> and that there is no secular purpose that would support teaching ID as science.<sup>239</sup> Therefore, the policy would make a reasonable observer, familiar with the history of the policy, feel that the board was creating political and religious insiders and outsiders based on religious views.<sup>240</sup> The board argued that the purpose of the policy was to promote critical thinking skills and improve science education.<sup>241</sup> Certainly, exposure to different ideas and values might support teaching ID in comparative religion or philosophy classes,<sup>242</sup> but because the court held that ID is not a scientific theory there is no secular purpose for teaching it in science classes.<sup>243</sup>

The board fared no better when the court analyzed the effects of the policy under the endorsement test. The court held that because ID is religious and not scientific the effect of the disclaimer and book purchases were to endorse religion.<sup>244</sup> Thus, when the policy was implemented, the disclaimer was read in classes, and ID books were added to the library in a well advertised manner, a reasonable observer would believe that such actions had the effect of endorsing religion.<sup>245</sup> There was substantial evidence supporting the notion that this is exactly what happened in Dover when the policy was being debated and after it was passed and implemented.<sup>246</sup> This same analysis essentially applied to the *Lemon* effects test as well.<sup>247</sup> The court used the same reasoning to hold that the primary effect of the Dover policy was to promote the religious theory of ID.<sup>248</sup>

The court's discussion of the school board's purpose under the *Lemon* test went beyond the discussion of purpose under the endorsement test.<sup>249</sup> The court specifically addressed the behavior and statements of particular school board members to demonstrate that the

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237. *See id.* at 745-46, 765.

238. *See id.*

239. *See id.* at 735-43.

240. *See id.* at 713, 732, 745-46.

241. *See id.* at 762.

242. *See id.* at 765.

243. *See id.* at 735-46, 763-65.

244. *See id.* at 745-46, 763-64 (holding that the school board policy and actions violated effects inquiry under endorsement and *Lemon* tests).

245. *See id.*

246. *See id.* at 748-62.

247. *See id.* at 763-65.

248. *See id.*

249. *See id.* at 748-62.



board policy had no secular purpose and was primarily designed to promote the religious views of certain board members.<sup>250</sup> It is important to note, however, that even without such behavior the fact that the court held that ID is not science and is religious was enough to violate the endorsement test and the effects test under *Lemon*.<sup>251</sup>

Of course, the decision of a federal district court does not have the precedential value of an appeals court decision, but the *Kitzmiller* court's careful analysis of the science/religion issue will likely be followed by many courts because it is the first decision directly addressing the issue in the ID context and because so many leading figures representing both sides of the issue testified at trial.<sup>252</sup> As mentioned above, however, the school board's behavior in *Kitzmiller* was so brazen that courts might use that behavior to distinguish *Kitzmiller*. Significantly, the Dover School Board's behavior was not the primary focus of the court's analysis on the science/religion issue.<sup>253</sup> The fact that ID is not science (and that it is religious) was key to the ultimate outcome in the case and it is key to the analysis in this Article.<sup>254</sup> Therefore, even without the unfortunate behavior of the Dover school board members the case would likely have come out the same way.<sup>255</sup>

If ID is not science, as accepted by the broader scientific community, and it is a religiously based theory as found by the court in *Kitzmiller*, and as reflected in many of the ID movement's own documents and statements, what arguments remain for ID theorists? After all, if ID is not science it need not be taught at any educational level, nor must it be recognized as acceptable research by science departments at universities.<sup>256</sup> This is the price of entering the scientific "proof game." Once ID enters that arena it must be able to demonstrate that it is science.

ID theorists have attempted to argue, although frequently without much sophistication, that reliance on the current scientific paradigm excludes religious or other paradigms from competing.<sup>257</sup> If such alternative paradigms are to gain any acceptance, the argument goes, it is essential that they be explored by researchers. This raises the related

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250. *See id.*

251. *See id.* at 711-46.

252. *See generally id.*

253. *See id.* at 720-23, 735-45.

254. *See generally id.*

255. *See id.* at 746-63.

256. *See* Bishop v. Aronov, 926 F.2d 1066, 1077 (11th Cir. 1991).

257. *See Kitzmiller*, 400 F. Supp. 2d at 736-37; PENNOCK, *supra* note 4. The Discovery Institute, Center for Science and Culture, Academic Freedom, <http://www.discovery.org/csc/freeSpeechEvolCampMain.php> (last visited January 13, 2009).

question of whether such arguments for alternative scientific paradigms must be credited by schools and science departments. These arguments draw implicitly, if not explicitly, on the legal concepts of equal access and public forums.<sup>258</sup>

#### V. SEEDING THE ACADEMIC FORUM?

Arguing for inclusion in the realm of science generally requires that one use the tools of modern science. These tools are generally understood as engaging in experiments, or, at the very least, calculations, that allow for falsifiability—i.e., which could prove that a scientist's hypothesis might be wrong.<sup>259</sup> Falsifiability is key to modern science, as the famed philosopher of science Karl Popper explained.<sup>260</sup> Still, arguments can be made which suggest that Popper's definition of science is simply one paradigm for science, and that there is no super-paradigm that allows one to prove the correctness of a given scientific paradigm.<sup>261</sup> As explained below, this argument can be supported by the work of Thomas Kuhn,<sup>262</sup> but ironically Kuhn's arguments when taken as a whole work against ID proponents' claims.<sup>263</sup>

From a legal perspective, however, the possibility of multiple scientific paradigms raises some interesting questions when merged with free speech concerns and the concept of equal access to government forums and programs. ID proponents' arguments that they are being denied "academic freedom," excluded from the scientific debate, and are discriminated against, raise the question of what exactly they are being excluded from? As will be explained, no issue exists if ID is not science, because excluding it from government controlled or sponsored scientific fora would be a natural result of ID not being science. If ID is science, however, it can be argued that excluding it from government controlled or sponsored scientific fora raises serious constitutional concerns.

Given that ID proponents make no attempt to falsify their ultimate hypothesis that Big D is involved in creation, nor do they attempt to falsify their arguments that evolution cannot explain much of what is seen in the natural world, it follows that ID is not science under the traditional definition of that term in the era of modern science.<sup>264</sup> If,

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258. See *infra* Parts V.A. and V.C.

259. See KARL POPPER, *LOGIC OF SCIENTIFIC DISCOVERY* 40 (Hutchinson 1959).

260. See *id.*

261. See THOMAS KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (3d ed. 1996).

262. See *infra* Part V.B.

263. See Frank S. Ravitch, *Intelligent Design in Public University Science Departments: Academic Freedom or Establishment of Religion*, 16 WM. & MARY BILL RTS. J. 1061, 1068-71 (2008).

264. See *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 735-46 (M.D. Pa. 2005).

however, they can argue successfully that the traditional definition of modern science is not the only one, or better yet, that it “discriminates” against alternative “scientific” approaches, suddenly ID can claim the mantle of free speech protection even in the scientific context. Of course, this whole argument is question begging because one could make similar arguments about the paradigms for every academic discipline. Thus, alchemists can argue for access to the scientific forum and the use of a divining rod to find water might have to be included in courses or programs on geology and oceanography. Before jumping to that point, however, it is worth exploring the legal concepts of public forum doctrine and equal access as well as the concept of scientific paradigms as discussed by Thomas Kuhn and some other philosophers of science.

A. *Public Forum Doctrine and the Equal Access Concept*

A traditional public forum is a space such as a public park or sidewalk where a variety of groups or individuals are able to place materials or to speak out on a variety of issues.<sup>265</sup> In a traditional public forum the government must show a compelling governmental interest and narrow tailoring in order to exclude any message, including a religious one.<sup>266</sup> A designated public forum is one where the government limits forum access to certain categories of individuals, such as school students or graduating seniors.<sup>267</sup> While potential speakers may be limited to the category designated, within that group the same free speech rights attach as in a traditional public forum.<sup>268</sup> A related concept, known as a limited public forum, exists where government limits the topics that may be discussed in the forum,<sup>269</sup> but again within those topics all viewpoints must be allowed.<sup>270</sup> The concepts of limited and designated forums are often used interchangeably by courts without any clarification that there is at least a conceptual difference between the two.<sup>271</sup> Government may impose, subject to a lesser burden, reasonable time, place, and manner restrictions in a public forum,<sup>272</sup> but such restrictions are not an issue in the ID context.

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265. See *Hague v. CIO*, 307 U.S. 496, 515-16 (1939).

266. See *Widmar v. Vincent*, 454 U.S. 263, 270 (1981).

267. See *Good News Club v. Milford Cent. Sch.*, 533 U.S. 98, 106-107 (2001) (citing *Rosenberger v. Rector*, 515 U.S. 819, 829 (1995)).

268. *Arkansas Educ. Television Com'n v. Forbes*, 523 U.S. 666, 677-78 (1998).

269. *Good News Club*, 533 U.S. at 106.

270. *Id.*; *Perry Educ. Ass'n v. Perry Local Educators' Ass'n.*, 460 U.S. 37, 48 (1983).

271. See, e.g., *Good News Club*, 533 U.S. at 105 (2001); *Lamb's Chapel v. Center Moriches Union Free Sch. Dist.*, 508 U.S. 384, 390 (1993).

272. *Widmar v. Vincent*, 454 U.S. 263, 278 (1981).

Equal access cases are those where a religious organization seeks access to government owned facilities or government funded fora to which nonreligious entities have access.<sup>273</sup> Equal Access cases are in many ways straight forward speech cases. If a school district allows a variety of non-curricular student groups access to school facilities when school is not in session, the school has created a designated or limited public forum.<sup>274</sup> Thus, if a group is excluded from that forum based on the content of its mission or the viewpoint it expresses the result is content or viewpoint discrimination, depending on the facts.<sup>275</sup> Content discrimination occurs when a government entity discriminates against or excludes an entire subject, while viewpoint discrimination occurs when the government discriminates against speech based on the specific viewpoint involved.<sup>276</sup> For example, it would be content discrimination to exclude all religious speech from a public forum, but it would be viewpoint discrimination to exclude only speech from a Jewish perspective.

Claims of content discrimination in a public forum give rise to strict scrutiny,<sup>277</sup> and thus a government entity charged with content discrimination would need to demonstrate that a compelling governmental interest prompted the discrimination and that its action was narrowly tailored to serve that compelling interest.<sup>278</sup> The Court has suggested that viewpoint discrimination in a public forum is presumed unconstitutional,<sup>279</sup> but it has not clearly addressed this point.<sup>280</sup> There is some support for applying strict scrutiny to viewpoint discrimination, albeit especially strict scrutiny.<sup>281</sup> Regardless, the line between content and viewpoint discrimination is somewhat blurred.

Under current precedent if religion is treated differently in a limited, designated, or traditional public forum, even in a sensitive context like an

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273. See *Good News Club*, 533 U.S. at 106-07.

274. See *id.* at 108 (the district, however, disputed the scope of the forum).

275. Cf. *id.* at 107-10 (finding viewpoint discrimination where group excluded because of the religious perspective from which it addressed a variety of questions).

276. See *id.*

277. See *Capitol Square Review and Advisory Bd. v. Pinette*, 515 U.S. 753, 761 (1995); see also *Church on the Rock v. City of Albuquerque*, 84 F.3d 1273, 1279 (10th Cir. 1996) (finding that “[c]ontent-based restrictions are subject to strict scrutiny. Viewpoint-based restrictions receive even more critical judicial treatment”).

278. See *id.*

279. See *Rosenberger v. Rector*, 515 U.S. 819, 829-30 (1995).

280. See, e.g., *Good News Club*, 533 U.S. at 112-13.

281. See *Bartnicki v. Vopper*, 532 U.S. 514, 544 (2001) (Rehnquist, J., dissenting) (implying discrimination based on viewpoint is subject to strict scrutiny); see also *supra* note 277 and accompanying text. The fact that the Court in *Good News Club* refused to decide whether viewpoint discrimination might be justified in order to prevent violations of the Establishment Clause in rare circumstances at least leaves the question open. See *Good News Club*, 533 U.S. at 112-13.

elementary school, the result is viewpoint or content discrimination (depending on whether a specific viewpoint(s) or category of speech is focused upon).<sup>282</sup> Treating religion differently in a forum open to all student groups is never a compelling government interest because the Court has held that the Establishment Clause requires religion to be treated the same as non-religion.<sup>283</sup> By assuming that religion must be treated the same as non-religion the Court has both set up the claim of viewpoint discrimination and answered the compelling interest defense to that claim.<sup>284</sup>

*B. Some Basics on Kuhn and Scientific Paradigms*

The possibility of multiple scientific paradigms was the subject of Thomas Kuhn's seminal work, *The Structure of Scientific Revolutions*.<sup>285</sup> Since then it has been the subject of numerous books and articles. At first glance it may appear that ID proponents could use the notion of multiple scientific paradigms to argue that religiously based (or at least supernaturally based) paradigms should be considered "science," despite their failure to use the scientific method to analyze their ultimate conclusion. The scientific method would only be a tool of particular paradigms of science under this analysis. Of course, this argument would allow alchemy, UFOlogy and astrology to be considered science as well. One would hardly expect that chemistry departments would accept alchemy as an appropriate teaching or research field. Nor would one expect an astronomy department to credit teaching or research focused on astrology.

Yet, even if one accepts the epistemological implications of Kuhn's approach, i.e. that any scientific approach is value and preconception laden and that alternative paradigms may be equally plausible,<sup>286</sup> ID gains no leverage. There are three major reasons for this. First, while *Scientific Revolutions* has long been regarded as an important work in the philosophy of science, Kuhn himself was primarily a scientific historian and viewed his work as such.<sup>287</sup> While Kuhn the philosopher may at first glance seem to give ID proponents some leverage, Kuhn the historian demonstrates why ID can never gain traction even in the world of shifting scientific paradigms.<sup>288</sup> Second, even if one were to accept all

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282. See *id.* at 106-12.

283. See, e.g., *id.* at 112-20.

284. See *id.*

285. See KUHN, *supra* note 137 (discussing paradigms in the sciences, and asserting that there is no super-paradigm to decide between conflicting paradigms).

286. See *id.*

287. See *id.*

288. See *id.* at 167-69, 177-78, 294.

the implications of scientific relativism, ID proponents are hardly in a position to take advantage. Central to ID theory is the notion of absolutism, both moral and material.<sup>289</sup> By accepting any sort of scientific relativism ID proponents destroy the central tenets of their own “theory.” Winning that particular battle—which is quite unlikely to begin with—loses them the war. Finally, a question remains regarding the possibility and nature of a “demarcation point” between science and quasi-science.<sup>290</sup>

Regarding the first point mentioned above, Kuhn’s work demonstrates that ID would not be accepted by any community of credible scientists even if it were considered a “scientific” paradigm.<sup>291</sup> Thus, the possibility of multiple scientific paradigms would be of no use to those who could never gain acceptance for their preferred paradigm. This is because there is a distinction between the epistemological arguments made by relativists about the nature of science, which are primarily descriptive, and the normative question of what may be accepted as science in the community of scientists and why.<sup>292</sup> In fact, while at a superficial level it might be argued that Kuhn’s philosophical arguments would support the inclusion as “science” of paradigms that are not based in traditional scientific approaches, when one reads the historical analysis in his work it quickly becomes apparent that as a practical matter quite the opposite is true.<sup>293</sup>

Even within Kuhn’s description of scientific paradigms and revolutions there is a presumed substantive boundary for what may practically be considered science, even if that boundary may shift.<sup>294</sup> Astrology, ID, and the belief that the Earth is the center of the universe are all precluded from “science” today because they do not use the tools, quantitative analysis, or methodology of science in regard to their ultimate hypothesis.<sup>295</sup> Most importantly, even if ID could somehow be called a scientific, as opposed to a theological or philosophical paradigm,

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289. See JOHNSON, *supra* note 21; *Wedge Document*, *supra* note 104.

290. See *infra* notes 334-50 and accompanying text.

291. See KUHN, *supra* note 137, at 153-54, 167-69, 177-78, 205-07.

292. See LARRY LAUDAN, *SCIENCE AND RELATIVISM* (Chicago 1990) (dialogue between positivist, realist, pragmatist and relativist, where each recognizes that relativist arguments on epistemology can be differentiated from the normative practice of a given scientific community).

293. See *id.*

294. See generally, KUHN, *supra* note 137 (Kuhn repeatedly draws lines between science and philosophy or religion and he discusses successful scientific revolutions as occurring through the use of the tools and problems “normal science,” resulting in new scientific paradigms, but new paradigms must build on or improve previous theories to gain acceptance).

295. See *id.*

it need not and has not been accepted by the community of scientists.<sup>296</sup> In fact, Kuhn specifically addresses the fact that not all scientific paradigms will be accepted by the scientific community,<sup>297</sup> that the scientific community does determine what science is,<sup>298</sup> and that there are specific ways in which a new paradigm might come to be accepted by the scientific community or some subset of it.<sup>299</sup> ID, even if it proclaims itself to be a scientific paradigm, has not gained acceptance among credible scientists or scientific journals,<sup>300</sup> and is not part of the discourse of the mainstream sciences.<sup>301</sup>

Still, in arguing for academic freedom an ID theorist might ask how we know that a given paradigm is “the” paradigm for a given science unless there is some super-paradigm that allows us to choose between competing paradigms. As Kuhn points out, there is no such super-paradigm.<sup>302</sup> I have used a similar analysis in critiquing the concept of neutrality in the religion clause context.<sup>303</sup> Still, as noted above, Kuhn argues that there are still criteria for “what” the current scientific community counts as science,<sup>304</sup> and ID does not meet these criteria.<sup>305</sup>

Kuhn’s work at most suggests that a theory like ID may have been an accepted paradigm for science (alchemy was based in an accepted scientific paradigm at one point in history) but its methodology and presumptions are so far out of line with mainstream scientific thought that it cannot create a ripple, let alone a shift, in current scientific paradigms.<sup>306</sup> The reason for this is that ID theory is unwilling or unable to question its ultimate hypothesis of an intelligent designer and it has failed to engage in experiments that could support or contravene evolution depending on outcomes.<sup>307</sup> ID works toward a predetermined end to disprove evolution, at least as to more complex life forms.<sup>308</sup>

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296. See *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 718-23, 735-45 (M.D. Pa. 2005); PENNOCK, *supra* note 4.

297. See KUHN, *supra* note 137.

298. See *id.* at 177-78.

299. See *id.* at 167-69, 177-78.

300. See *Kitzmiller*, 400 F.Supp.2d at 718-23, 735-45; PENNOCK, *supra* note 4.

301. See *Kitzmiller*, 400 F.Supp.2d at 718-23, 735-45; PENNOCK, *supra* note 4.

302. See KUHN, *supra* note 137, at 150-58.

303. See FRANK S. RAVITCH, *MASTERS OF ILLUSION: THE SUPREME COURT AND THE RELIGION CLAUSES* 13-36 (NYU Press 2007) [hereinafter *MASTERS OF ILLUSION*]; Ravitch, *A Funny Thing Happened*, *supra* note 73 at 498-523.

304. See KUHN, *supra* note 137, at 153-54, 167-69, 177-78, 205-07.

305. See *Kitzmiller*, 400 F.Supp.2d at 718-23, 735-45; PENNOCK, *supra* note 4.

306. See KUHN, *supra* note 137, at 94, 129-30, 145-47, 153-54, 167-69, 177-79, 206-07.

307. See PENNOCK, *supra* note 4.

308. See *Kitzmiller*, 400 F.Supp.2d at 735-45.

It is quite possible that alternative theories can gain acceptance within a discipline by using the tools of that discipline (as well as interdisciplinary tools) to convincingly make the case for such theories.<sup>309</sup> In fact, this is the way that Kuhn suggests most new paradigms come to be accepted.<sup>310</sup>

Many ID theorists seem upset about their failure to gain acceptance among credible scientists,<sup>311</sup> but as noted above the lack of acceptance is heavily a result of their failure to test their ultimate hypothesis—that there is an intelligent designer—through the scientific method.<sup>312</sup> The failure to do so suggests that ID be explored in the humanities, if at all, where philosophy and religious studies leave ample room to explore such questions.<sup>313</sup> Failing to scientifically test the existence of an intelligent designer, however, excludes ID from science departments that do not wish to credit it.<sup>314</sup> One might object that this argument relies on a clear demarcation point for what may be accepted as science, but as will be seen, this argument does not help ID proponents either.<sup>315</sup>

For the sake of argument, however, presume that supernaturally and/or religiously based approaches to natural phenomena are valid scientific paradigms, even where their ultimate hypothesis is presumed to be correct and no attempt is made to prove or falsify major tenets of the “theory” through generally accepted scientific methodologies used by those engaged in what Kuhn would call “normal science.”<sup>316</sup> What might this mean for ID?

Kuhn’s philosophical approach, like that of Quine, implicates relativism.<sup>317</sup> If one accepts that there is no way to choose between paradigms without using value laden assumptions or preconceptions,<sup>318</sup> and there is no place of value neutrality from which one can gauge which values and preconceptions are correct,<sup>319</sup> the result is that there is no way

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309. See KUHN, *supra* note 137, at 94, 129-30, 145-47, 153-54, 167-69, 177-79, 206-07.

310. See *id.*

311. For example, visit the Academic Freedom page on the Discovery Institute, Center for Science and Culture website, <http://www.discovery.org/csc/freeSpeechEvolCampMain.php> (last visited January 13, 2009).

312. See *Kitzmiller*, 400 F.Supp.2d at 735-46.

313. See *id.* at 718-19, 745-46.

314. See *id.* at 735-45; see also *Bishop v. Aronov*, 926 F.2d 1066, 1076 (11th Cir. 1991) (finding universities have the final say in determining their curriculum).

315. See *infra* notes 334-50 and accompanying text.

316. See generally KUHN, *supra* note 137 (referring to and defining “normal science” as the currently dominant scientific paradigm(s) and practices).

317. See LAUDAN, *supra* note 292, at xi n.1.

318. See *id.* at 53-54 (this argument is repeatedly made by the relativist and reflected in comments made by the others in the dialogue).

319. See KUHN, *supra* note 137, at 147-59.



to know that a given paradigm is inherently more correct than another in a metaphysical sense.<sup>320</sup> This dilemma of epistemology raises fascinating philosophical questions that have been the subject of much debate.<sup>321</sup> Significantly, embracing relativism in any fashion, regardless of its broader philosophical merit,<sup>322</sup> undermines the very foundations of ID. Essentially, if ID advocates use relativist arguments to justify inclusion of ID in science,<sup>323</sup> they prove too much.

A core underpinning of ID is that Big D's existence is not open to question.<sup>324</sup> Moreover, ID advocates rail against the moral relativism to which scientific materialism allegedly leads.<sup>325</sup> Taking a relativist position on what counts as science requires the acceptance of the underlying tenets of relativism—i.e. that human actions, behavior and beliefs are inherently value laden, subject to preconception and that this means there is no way to pronounce that a given theory is better than another.<sup>326</sup> Once one accepts the underlying tenets of relativism one cannot pick and choose where value neutrality is a relevant vantage.<sup>327</sup> Moreover, there can be no such thing as an absolute truth, so there is little difference between Big D and the Flying Spaghetti Monster.

If one accepts the position that “scientific” paradigms not even remotely accepted by mainstream science are equally valid *and* that such paradigms can or should be taught in public school (and possibly university) science classes the practical results are troubling. Astrology, alchemy, UFOlogy, Cartesian Vortex theory, Phlogiston theory, Ethers, and many more, would be viable because mainstream science would hold no greater place since no paradigm could claim supremacy. Michael Behe, a leading ID proponent and biologist, admitted as much when he testified in *Kitzmiller*.<sup>328</sup> It would not stop there. Similar arguments could be made in every academic discipline until the public schools become a public forum for whatever theory or material that teachers or maverick school boards want to teach. To deny these alternative

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320. See *id.*; see also LAUDAN, *supra* note 292, at 53-54 (argument made by relativist in dialogue).

321. See generally LAUDAN, *supra* note 292 (excellent example of this debate presented in the form of a dialogue engaged in by archetypes of four of the major philosophical positions in the philosophy of science).

322. I have argued in the past that attacks on the possibility of value neutrality do have merit. See sources cited *supra* note 303.

323. See, e.g., BECKWITH, *supra* note 20; Beckwith, *supra* note 12; DeWolf et al., *supra* note 11.

324. See *supra* Part III.

325. See JOHNSON, *supra* note 21; *Wedge Document*, *supra* note 104.

326. See KUHN, *supra* note 137, at 159; LAUDAN, *supra* note 292, at 53-54.

327. See MASTERS OF ILLUSION, *supra* note 303, at 18-36.

328. See *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 736 (M.D. Pa. 2005)

approaches in any discipline would be to discriminate against such theories and their proponents.<sup>329</sup> This would apply even when those theories are religiously grounded.<sup>330</sup>

Of course, as noted above, Kuhn himself rejected this result.<sup>331</sup> He drew a distinction between the epistemological reality that non-value-laden baselines for judging reality do not exist and the practical reality that the tools of, and participants in, normal science ultimately decide what counts as science.<sup>332</sup> To create a paradigm shift a new paradigm must convince mainstream scientists and generally use at least some of the tools of normal science in a manner that is effective in persuading scientists.<sup>333</sup> Therefore, the relativist position—regardless of its philosophical merit—both betrays ID’s underlying principles and cannot practically be used in a manner that would help ID to win the supposed origins controversy. ID is again trapped by its own rigidity and the reality that it is more marketing strategy than science.

Still, another argument from the philosophy of science may seem to be potentially useful to ID advocates; namely, the notion that there are problems in defining the demarcation point between science and pseudo-science or non-science.<sup>334</sup> The question of whether there is such a demarcation point between science and non-science has long been a preoccupation of many philosophers of science.<sup>335</sup> The debate goes back to Aristotle and before and it still rages today.<sup>336</sup> It is a question of epistemology, that is, is there a way to know what counts as “science” and “non-science.”<sup>337</sup>

Yet, there are really only two possibilities in the end. Either there is a way to determine what constitutes science and what does not, or there is no way to do so.<sup>338</sup> Those who have proposed mechanisms for demarcating science from pseudo-science or non-science have argued

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329. See *supra* notes 11-13 and accompanying text.

330. See *id.*

331. See *supra* notes 295-301 and accompanying text.

332. See *supra* notes 297-301 and accompanying text.

333. See *id.*

334. See Larry Laudan, *The Demise of the Demarcation Problem*, in *PHYSICS, PHILOSOPHY AND PSYCHOANALYSIS: ESSAYS IN HONOR OF ADOLF GRÜNBAUM* 111 (R.S. Cohen & L. Laudan eds., 1983) (detailed discussion of the demarcation problem) [hereinafter *Demarcation Problem*]; see also Jay D. Wexler, Note, *Of Pandalas, People, and the First Amendment: The Constitutionality of Teaching Intelligent Design in the Public Schools*, 49 *STAN. L. REV.* 439, 466-67 (1991) (pointing out demarcation issue in the ID context).

335. See *Demarcation Problem*, *supra* note 334, at 112-20.

336. See *id.*

337. See *id.* at 118, 124-25.

338. See generally *id.* (suggesting there is no way to do so, but that the question was not one of great importance in the first place).

that “science” uses the scientific method, while non-science does not,<sup>339</sup> or that science can be defined by its growth or predictive ability.<sup>340</sup>

The argument that ID advocates might attempt to seize is that such a demarcation is incoherent at least at the level of epistemology.<sup>341</sup> Yet, as perhaps the leading advocate of this position, Larry Laudan, has admirably demonstrated, the question itself is something of a red herring.<sup>342</sup> Even if there is no clear demarcation point between science and non-science, Laudan points out, “our focus should be squarely on the empirical and conceptual credentials for claims about the world.”<sup>343</sup> In other words, the important question is not whether one can know with certainty that something is science or is not, but rather what a given practice or conception can show empirically about the world.<sup>344</sup> The label does not matter as much as the substance.<sup>345</sup> This would not appear to help ID advocates given the discussion in previous sections.<sup>346</sup>

Still, even if one argues that the lack of a demarcation point somehow favors the position of ID advocates, there remains the reality that current scientific practice and opinion rejects ID.<sup>347</sup> So the possible epistemological victory proves pyrrhic given the applicable law’s focus on what is generally accepted by scientists as the best basis for determining what is science,<sup>348</sup> its labeling of supernaturally guided theories generally as religious and thus potentially violative of the Establishment Clause if taught in schools,<sup>349</sup> and the potential anarchy that could reign if the school curriculum were deemed a public forum for private speech. Moreover, many scientists and even philosophers of science accept that there is a demarcation point between science and non-science,<sup>350</sup> which would further cause the demarcation argument to be of virtually no help to ID advocates given all the other factors just mentioned.

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339. *Id.* at 115.

340. *Id.* at 122-23.

341. *Id.* 120-25.

342. *Id.* at 124-25.

343. *Id.* at 125.

344. *Id.* at 124-25.

345. *Id.*

346. *See supra* Parts II, III, and IV.

347. *See supra* Parts II and IV.

348. *See* *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 737 (M.D. Pa. 2005).

349. *See* *Edwards v. Aguillard*, 482 U.S. 578,592; *see also id.* at 599 (Powell, J., concurring).

350. *See* CHARLES ALAN TAYLOR, *DEFINING SCIENCE: A RHETORIC OF DEMARCATION* 5-9 (Wisconsin 1996).

C. *Paradigms, Equal Access, and Public Fora*

Given existing legal precedent and scientific evidence the best argument ID advocates have for including ID in the scientific—as opposed to the theological and/or philosophical realm—is to combine equal access/public forum arguments with relativist epistemology. The argument would go something like this: ID has a place at the scientific table (regardless of its merit under currently governing scientific paradigms) because it is a plausible paradigm for science and ID advocates have engaged in research that supports it. Given this, excluding ID from the scientific forum is a form of viewpoint discrimination since ID is an alternative explanation of the nature of complex life forms, and denying it access gives a privileged position to evolutionary theory and scientific materialism.

The problems with this argument are manifest. First, most of the situations where this argument will be made are not public fora, or even limited or designated public fora. A school's curriculum is not a public forum for all theories no matter how far afield of current knowledge.<sup>351</sup> Moreover, to acknowledge even that the science curriculum may be a limited public forum would do ID advocates little good because it would be limited to “scientific” theories, which of course begs the question.

To respond ID advocates would have to use relativist arguments about epistemology as a practical tool, arguing that ID is just an alternative scientific paradigm and that there is no way to judge it inferior to the alternatives without engaging in viewpoint discrimination. As noted above, the results of this approach would turn public school curricula into a free for all for every possible paradigm in every discipline no matter how unacceptable or discredited those paradigms are in the relevant discipline, and regardless of whether the leading thinkers, researchers and associations have rejected the alternative paradigm. A child's school day could consist of: Homeroom (time for students to hang upside down in order to gain better flow and balance); Biology (where Intelligent Design is taught); Chemistry (where Alchemy and Ethers are taught); English (where Mad Magazine is the major text because it is “great social commentary”); History (where either Bible History or the Depravity and Destructive Behavior of Western Societies is taught); Art (where the work of Maplethorpe and Andres Sarano, with an extended focus on Serano's “Piss Christ” is taught); and finally Physical Education (where the school of hard knocks approach to dodge ball is the main focus). While extreme, this example illustrates the possibilities if we declare equal access or public forum doctrine

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351. See *Hazelwood Sch. Dist. v. Kuhlmeier*, 484 U.S. 260, 272 (1988).

applicable to courses or disciplines and then make the arguments necessary to include ID as science.

The free speech arguments prove too much to help ID advocates, and the combination of free speech arguments with scientific relativism leads to bad legal doctrine, a contextualized use of potentially valid metaphysical arguments, and ridiculous practical results. Also, the arguments that privileging evolution establishes a religion of secular humanism or that the denial of the “right” to teach ID as science in public institutions denies free exercise rights fair no better.<sup>352</sup> Ultimately, because of ID’s failure in the proof game and the inconsistency between the absolutist commitments inherent in ID theory and alternative theories of scientific philosophy ID can gain no legal traction for inclusion as science even when the best potential arguments for such inclusion are put forward.

#### VI. ACADEMIC AND SCIENTIFIC DISCRIMINATION AGAINST ID PROONENTS

Much of the previous discussion demonstrates the flaw in claims by ID proponents that they are the victims of discrimination when ID is excluded from the realm of “science” in academic and educational environments. Yet, ID proponents seem to share a collective persecution complex.<sup>353</sup> In fact, Ben Stein’s recent movie, *Expelled: No Intelligence Allowed*,<sup>354</sup> was primarily focused on making the claim of academic discrimination aimed at ID proponents. Yet, is such discrimination really occurring? And, if so, is it justified?

Would it be discrimination against astrologers to preclude astrology from being taught in astronomy or cosmology classes in a primary or secondary school? Would an astronomy department at a university be discriminating in any actionable sense if it precluded an astrologer from teaching astrology as an explanation for “gaps” in astronomical or astrophysics theories? Even if one concluded that these situations constitute pernicious discrimination, would that conclusion remain valid if astrology could be taught in history of science or classics courses? Moreover, would it be discriminatory for mainstream astronomy and physics journals to reject an article on astrology? To argue that ID proponents are facing discrimination when excluded from the biology curriculum or biology literature requires one to accept that all four

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352. See *supra* notes 11-13.

353. See *EXPULSED*, *supra* note 23 (setting forth numerous claims by ID advocates that they are the victims of academic persecution); Discovery Institute: Center for Science and Culture website, <http://www.discovery.org/csc> (regularly featuring articles and news stories relating to such claims).

354. See *EXPULSED*, *supra* note 23.

questions above must be answered in the affirmative. There is simply no way around this conundrum so long as ID proponents engage in the proof game and argue ID is science rather than philosophy and/or religion.

Even assuming that discrimination is occurring, the question remains whether it is justified. This question can be divided into two parts. First, is it justified scientifically? Second, is it justified legally? The previous sections answer the first question.<sup>355</sup> The answer is yes.<sup>356</sup> They also go a long way toward answering the second question, but not all the way. The remaining question involves curricular control (at all educational levels) and recognition of research at the post secondary level.

At the primary and secondary school level, there are numerous cases holding that state and local curriculum committees have the right to control the general substance of courses in given areas.<sup>357</sup> The standard generally applied is whether the decision supports legitimate pedagogical interests.<sup>358</sup> Local school boards are generally subject to state curriculum requirements.<sup>359</sup> Teachers must generally follow the curricular requirements set forth in state or local laws or they may be disciplined.<sup>360</sup> Ironically, one of the major exceptions to this rule occurs when a state or local school board requires the teaching or advocacy of material that is constitutionally prohibited from being taught in a given part of the curriculum.<sup>361</sup> Thus, public schools may not teach “creation science” in science classes after *Edwards*,<sup>362</sup> but it may be taught in comparative religion or philosophy classes so long as it is not favored as religious truth.<sup>363</sup>

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355. See *supra* Parts II and IV.

356. See *id.*

357. See, e.g., *Grossman v. South Shore Pub. Sch. Dist.*, 507 F.3d 1097, 1100 (7th Cir. 2007); *Chiras v. Miller*, 432 F.3d 606, 611 (5th Cir. 2005); *Webster v. New Lenox Sch. Dist. No. 122*, 917 F.2d 1004, 1007-08 (7th Cir. 1990); *Borger by Borger v. Bisciglia*, 888 F.Supp. 97, 99 (E.D. Wis. 1995).

358. See *Hazelwood Sch. Dist. v. Kuhlmeier*, 484 U.S. 260, 273 (1988). See, e.g., *Lee v. York County Sch. Div.*, 484 F.3d 687, 697 (4th Cir. 2007); *Silano v. Sag Harbor Union Free Sch. Dist. Bd. of Educ.*, 42 F.3d 719, 722-23 (2d Cir. 1994); *Virgil v. Sch. Bd. of Columbia County, Fla.*, 862 F.2d 1517, 1521 (11th Cir. 1989); *Newton v. Slye*, 116 F.Supp.2d 677, 685 (W.D. Va. 2000).

359. See *Edwards v. Aguillard*, 482 U.S. 578, 583 (1987); *Peloza v. Capistrano Unified Sch. Dist.*, 37 F.3d 517, 522 (9th Cir. 1994).

360. See, e.g., *Helland v. S. Bend Comm. Sch. Corp.*, 93 F.3d 327, 330 (7th Cir. 1996); *Marchi v. Bd. of Coop. Educ. Servs. of Albany*, 173 F.3d 469, 474-76 (2d Cir. 1999); *Bd. of Educ. of Jefferson County Sch. Dist. R-1 v. Wilder*, 960 P.2d 695, 699-701 (Colo. 1998); *Levake v. Indep. Sch. Dist. No. 656*, 625 N.W.2d 502, 508-09 (Minn. Ct. App. 2001).

361. See *Edwards*, 482 U.S. at 593-94; *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707 (M.D. Pa. 2005).

362. See *Edwards*, 482 U.S. at 593.

363. See *id.* at 606-08 (Powell, J., concurring).

Creation science (and ID) cannot be advocated as science in school sponsored assemblies,<sup>364</sup> extra-curricular activities,<sup>365</sup> or by school sponsored outside speakers.<sup>366</sup> However, creation science, creationism, or ID could be advocated as science by non-curriculum related groups that meet during non-curricular time under the equal access doctrine.<sup>367</sup> Teachers could advocate for ID on their free time so long as they do not use their position in the school in any way to endorse or call attention to their private speech activities.<sup>368</sup> In the end, current case law allows curricular choices by school officials to govern, and excluding ID from the science curriculum is no more unjustified discrimination than excluding astrology or alchemy would be.

Moreover, if ID is advocated (even through disclaimers) or taught in the science curriculum there is a significant chance that the activity would be found unconstitutional.<sup>369</sup> Thus, not only is the exclusion of ID from the science curriculum justified under current case law involving curricular decisions,<sup>370</sup> it may be mandated under the Constitution.<sup>371</sup> Even then, ID advocates have alternative avenues to promote their views through private speech activities and clubs,<sup>372</sup> and ID can be taught where relevant in comparative religion or philosophy courses so long as it is not favored.<sup>373</sup>

This still leaves the question of whether a *university* would be legally justified in excluding ID from science classes. There is a significant amount of case law holding that public university officials may insist that professors teach within the stated curriculum.<sup>374</sup> It is

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364. Cf. *ACLU of N.J. v. Black Horse Pike Reg'l Bd. of Educ.*, 84 F.3d 1471, 1482-84 (3d Cir. 1996) (holding school sponsored prayer at graduation ceremony was a violation of First Amendment).

365. Cf. *Borden v. Sch. Dist. of Tp. of East Brunswick*, 523 F.3d 153, 168-73 (3d Cir. 2008) (stating high school football coach cannot lead student prayer before games).

366. Cf. *Doe v. Porter*, 188 F. Supp. 2d 904, 909-11 (E.D. Tenn. 2002) (holding bible study session taught by visiting students once a week in elementary school was a violation of Establishment Clause).

367. See *Good News Club v. Milford Cent. Sch.*, 533 U.S. 98, 113-14 (2001).

368. See *Pelozo v. Capistrano Unified Sch. Dist.*, 37 F.3d 517, 522-23 (9th Cir. 1994); *Marchi v. Bd. of Coop. Educ. Servs. of Albany*, 173 F.3d 469, 477 (2d Cir. 1999).

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

370. See *supra* notes 357-62 and accompanying text.

371. See *Edwards v. Aguillard*, 482 U.S. 578 (1987); *Kitzmiller*, 400 F. Supp. 2d at 707.

372. See *supra* note 367 and accompanying text.

373. See *Edwards*, 482 U.S. 578; *Kitzmiller*, 400 F. Supp. 2d at 707.

374. See, e.g., *Edwards v. Cal. Univ. of Pa.*, 156 F.3d 488, 491 (3d Cir. 1998) (“[A] public university professor does not have a First Amendment right to decide what will be taught in the classroom.”); *Keen v. Penson*, 970 F.2d 252, 257 (7th Cir. 1992) (“This Court has recognized the supremacy of the academic institution in matters of curriculum content.”); *Bishop v. Aronov*, 926 F.2d 1066, 1075 (11th Cir. 1991) (noting that university officials may control the curriculum decisions); *Scallet v. Rosenblum*, 911 F.

equally clear that within the curriculum professors are accorded a great deal of academic freedom;<sup>375</sup> although there are some limitations.<sup>376</sup> Some of these cases involve professors inserting their religious views into courses unrelated to religion.<sup>377</sup> In the end, courts have held that courses at public universities are so connected with the educational function of these institutions that university officials have a right to enforce “legitimate pedagogical interests” as to the general substance of courses.<sup>378</sup> These interests either outweigh any claims of academic

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Supp. 999, 1011 (W.D. Va. 1996) (recognizing that the schools have a right to determine their own curriculum, which must be followed); *Cooper v. Ross*, 472 F. Supp. 802, 809 (E.D. Ark. 1979) (“[A] state university has the undoubted right to prescribe its curriculum, to select its faculty and students and evaluate their performances, and to define and maintain its standards of academic accomplishment.”).

375. See, e.g., *Keyishian v. Bd. of Regents of Univ. of the State of N.Y.*, 385 U.S. 589, 603 (1967) (“Our Nation is deeply committed to safeguarding academic freedom, which is of transcendent value to all of us and not merely to the teachers concerned. That freedom is therefore a special concern of the First Amendment, which does not tolerate laws that cast a pall of orthodoxy over the classroom.”); *Hardy v. Jefferson Cmty. Coll.*, 260 F.3d 671, 679 (6th Cir. 2001) (involving a professor using profane language; however, because the course was one dealing with interpersonal communication the court found it to be within the ambit of the curriculum despite the University’s protests); *Vanderhurst v. Colo. Mtn. Coll. Dist.*, 208 F.3d 908, 913 (10th Cir. 2000) (citing *Keyishian*, 385 U.S. at 603) (noting that academic freedom is a “special concern” of the First Amendment); *Bishop v. Aronov*, 926 F.2d 1066, 1075 (11th Cir. 1991) (noting that there is a strong recognition of academic freedom as it relates to the First Amendment); *Scaliet*, 911 F. Supp. at 1014 (noting the importance of academic freedom).

376. See, e.g., *Cal. Univ. of Pa.*, 156 F.3d at 491 (noting that while a professor may advocate for a change in the curriculum *outside* the classroom, the professor may not use those materials *in* the classroom); *Cohen v. San Bernardino Valley Coll.*, 92 F.3d 968, 972 (9th Cir. 1996) (acknowledging the potential limitations on academic freedom); *Keen v. Penson*, 970 F.2d 252, 257 (7th Cir. 1992) (recognizing that there may be conflicts between academic freedom and control over the curriculum that require some limiting of academic freedom); *Bishop v. Aronov*, 926 F.2d 1066, 1075 (11th Cir. 1991) (recognizing the university’s interest in having its courses taught without religious bias outweighed the countervailing concerns related to academic freedom within the curriculum); *Clark v. Holmes*, 474 F.2d 928, 931 (7th Cir. 1973) (“[W]e do not conceive academic freedom to be a license for uncontrolled expression at variance with established curricular contents and internally destructive of the proper functioning of the institution. First Amendment rights must be applied in light of the special characteristics of the environment in the particular case.”); *Scaliet*, 911 F. Supp. at 1014 (noting that not all speech will implicate the First Amendment and academic freedom).

377. See *Bishop*, 926 F.2d at 1068; see also *Cal. Univ. of Pa.*, 156 F.3d at 489 (involving courses unrelated to religion on educational media being taught with a religious bias). Other cases related to academic freedom and curriculum can deal with secular concerns. For example, one prominent case dealt with, among other things, a professor’s in-class discussions related to diversity in a first-year required writing course. *Scaliet*, 911 F. Supp. at 1003-04 (W.D. Va. 1996). The court found that despite the fact that the issue was one of public concern, the university’s interest in a consistent curriculum outweighed the professor’s First Amendment rights and was not protected. *Id.* at 1017.

378. See, e.g., *Vanderhurst*, 208 F.3d at 914 (“[W]hether [the] termination reasonably related to the College’s legitimate pedagogical interests is the test for determining



freedom asserted by professors,<sup>379</sup> or those claims are said to be invalid when it comes to teaching (at least in the core curriculum).<sup>380</sup> Thus, arguments for including ID in the science curriculum based on “equal access” or “formal neutrality” in the university context fare no better than such arguments do at the primary or secondary school levels because there is no public or limited public forum and there is no facially neutral program of “private choice.”<sup>381</sup> This is, of course, further backed by the argument that ID is not science, because even if there were a limited public forum in this context—and there is not—that forum would be limited to “science” courses in the science curriculum.<sup>382</sup>

At one level this is a bit disturbing. I had thought that academic freedom was quite broad in the classroom both as a matter of law and policy, but reading the cases it seemed more like this freedom exists as a matter of policy, but not necessarily as a matter of law. Yet, the

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whether his speech fell within the ambit of First Amendment protection.”); *Scaliet*, 911 F. Supp. at 1016 (noting that a professor’s use of certain materials violated the university’s legitimate pedagogical interests; however, the case also notes that the pedagogical concerns are less forceful at the university level than at lower educational levels such as high school); *Silva v. Univ. of N.H.*, 888 F. Supp. 293, 314 (D.N.H. 1994) (recognizing a right to protect valid pedagogical purposes, but finding the policy in this case too subjective to merit protection).

379. See, e.g., *Bonnell v. Lorenzo*, 241 F.3d 800, 824 (6th Cir. 2001) (involving use of profanity during class by a professor and finding that the interests of the professor were outweighed by the university’s concerns); *Bishop*, 926 F.2d at 1075 (recognizing the university’s interest in having its courses taught without religious bias outweighed the countervailing concerns related to academic freedom within the curriculum); *Scaliet*, 911 F. Supp. at 1016-17 (recognizing a balancing test, and in this case the professor’s interest was outweighed by the university’s interest in having its curriculum taught without significant disruption). But see, e.g., *Hardy v. Jefferson Cmty. Coll.*, 260 F.3d 671, 683 (6th Cir. 2001) (discussing a situation where the pedagogical interests did not outweigh the activities and speech of the professor); *Cohen*, 92 F.3d at 972 (While the lower court found that, on balance, the professor’s interest in teaching the controversial material was outweighed by the university’s interest in effective education as determined by its curriculum, the appellate court found that the University’s policies in this regard were too vague to be enforceable.).

380. See, e.g., *Cal. Univ. of Pa.*, 156 F.3d at 491 (finding it unnecessary to inquire further into the issue of the First Amendment standard given at the trial level because “a public university professor does not have a First Amendment right to decide what will be taught in the classroom.”); *Martin v. Parrish*, 805 F.2d 583, 587 (5th Cir. 1986) (Hill, J., concurring) (determining that the First Amendment concerns related to academic freedom did not apply, as the language in question was unrelated to the subject matter of the class); *Hetrick v. Martin*, 480 F.2d 705, 708 (6th Cir. 1973) (determining that a university may dismiss a professor based on disagreements with the professor’s “pedagogical attitudes”).

381. See, e.g., *Zelman v. Simmons-Harris*, 536 U.S. 639, 696 (2002) (formal neutrality); *Good News Club v. Milford Cent. Sch.*, 533 U.S. 98, 112-13 (2001) (equal access).

382. See *supra* Part V.C.

ascendance of ID theory suggests there are reasons why the courts have ruled as they have.

Significantly, most of the cases do not involve garden variety teaching disputes.<sup>383</sup> They more frequently involve either overt sexualized or profane statements in courses that do not touch on sex or profanity in any way or they involve the insertion of material that may run contrary to the focus of the courses involved.<sup>384</sup> Inserting religious beliefs in a science class is an example of the latter type of situation.<sup>385</sup> Many of the cases involve required courses, as opposed to electives, and the professors involved frequently taught primarily at the undergraduate level.

Interestingly, in *Bishop v. Aronov*,<sup>386</sup> the United States Court of Appeals for the Eleventh Circuit addressed a situation similar to that of a biology professor advocating ID in a science course. Bishop was a professor in the Department of Health, Physical Education, and Recreation in the College of Education at the University of Alabama, where he taught exercise physiology.<sup>387</sup> He was also the director of the College's Human Performance Laboratory.<sup>388</sup> The university issued Bishop a letter requiring him to abstain from inserting religious statements in his teaching.<sup>389</sup> The subject matter of Bishop's statements, as attested to by him in an affidavit, included remarks like the following:

I want to invest my time mainly in people. I personally believe God came to earth in the form of Jesus Christ and he has something to tell us about life which is crucial to success and happiness. Now this is

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383. See, e.g., *Hardy*, 260 F.3d at 679 (involving use of profane language in the classroom); *Vanderhurst*, 208 F.3d at 911 (involving a series of profane and offensive remarks unrelated to the curriculum); *Cal. Univ. of Pa.*, 156 F.3d at 491 (involving courses being taught with a religious bias); *Cohen*, 92 F.3d at 972 (involving intentionally shocking discussions regarding profane language and controversial topics including cannibalism and consensual sex with children); *Bishop*, 926 F.2d at 1075 (involving a university's concern that courses not be taught with a religious bias).

384. See, e.g., *Hardy*, 260 F.3d at 679 (involving profane language and using such terms as "nigger" and "bitch" during class discussions on social deconstructivism); *Bonnell*, 241 F.3d at 803 (involving use of profanity during class by a professor); *Vanderhurst*, 208 F.3d at 911 (outlining a series of vulgar/offensive remarks the professor made unrelated to the course material or, in many cases, any educational purpose whatsoever); *Cohen*, 92 F.3d at 972 (involving profane language and controversial topics which were arguably outside the curriculum of the class); *Bishop*, 926 F.2d at 1075 (inserting religious material/perspective into a course that did not deal with religion, but instead with science); *Parrish*, 805 F.2d at 583-84 (involving profanity in the classroom).

385. See, e.g., *Bishop*, 926 F.2d at 1075.

386. *Id.* at 1068.

387. See *id.*

388. See *id.*

389. See *id.* at 1069.

simply my personal belief, understand, and I try to model my life after Christ, who was concerned with people, and I feel that is the wisest thing I can do. You need to recognize as my students that this is my bias and it colors everything I say and do. If that is not your bias, that is fine. You need, however to, filter everything I say with that (Christian bias) filter.<sup>390</sup>

Bishop also organized an after-class event for his students and others who were interested, at which he lectured on the topic of “Evidences of God in Human Physiology.”<sup>391</sup> The session was held shortly before exams and the university felt this timing could place pressure on students to attend.<sup>392</sup> Although Bishop utilized a blind grading system, the university did not think he adequately separated the out-of-class sessions from the course itself. He would be able to hold such an event if it was not seen as being associated with the course, but the university saw no such separation between the course and after-class events in this case.<sup>393</sup>

The court held that a university classroom is not a public forum for speech.<sup>394</sup> Thus, a university has the right to determine what substance is appropriate in the curricular context so long as it has legitimate pedagogical interests for doing so.<sup>395</sup> This must be done through case-by-case analysis.<sup>396</sup> In *Bishop*, the university had valid concerns over the relevance of the professor’s religious statements to a course in exercise physiology.<sup>397</sup> Bishop had the freedom to hold events on his views of God’s role in human physiology on campus so long as those events were not connected to his courses.<sup>398</sup> Thus, Bishop was not denied the freedom to discuss his religious convictions; he was only denied the ability to outwardly do so in the manner that he had in his exercise physiology course.<sup>399</sup>

The key issue in *Bishop* was the department’s, college’s, and university’s right to control curriculum based on legitimate pedagogical interests.<sup>400</sup> In this case, those interests included concerns about the pedagogical effects of students feeling religiously coerced in a basic physiology course.<sup>401</sup> The notion of legitimate pedagogical interests was

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390. *Id.* at 1068.

391. *See id.* at 1068-69.

392. *See id.* at 1069, 1076-77.

393. *See id.* at 1076-77.

394. *See id.* at 1071.

395. *See id.* at 1074.

396. *See id.*

397. *See id.* at 1076.

398. *See id.*

399. *See id.* at 1076-77.

400. *See id.*

401. *See id.* at 1074, 1076-77.

taken from a line of cases involving secondary schools,<sup>402</sup> and the court acknowledged that it was borrowing from these secondary school cases, although those cases would have to be adapted to the university setting.<sup>403</sup> The court held that the university did not violate Bishop's free speech rights.<sup>404</sup>

In the context of ID in the science curriculum, one can glean from the cases that university officials, as well as departmental curriculum committees, can exclude the teaching of ID if they so choose.<sup>405</sup> The same would be true regarding astrology, alchemy, etc. In addition to the balancing test from *Bishop*, courts have based such holdings directly on the secondary school cases<sup>406</sup>—i.e., determining whether the university's decision is based on legitimate pedagogical concerns and whether the

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402. *Cf. id.* at 1074 (using cases that relied on “legitimate pedagogical interests” language, but not using that exact language as set forth in those cases).

403. *See id.* at 1074-75.

404. Significantly, the court stated:

Though we are mindful of the invaluable role academic freedom lays in our public schools, particularly at the post-secondary level, we do not find support to conclude that academic freedom is an *independent* First Amendment right. And . . . we cannot supplant our discretion for that of the University. Federal judges should not be ersatz deans or educators. In this regard, we trust that the University will serve its own interests as well as those of its professors in pursuit of academic freedom. University officials are undoubtedly aware that quality faculty members will be hard to attract and retain if they are to be shackled in much of what they do.

*Id.* at 1075 (emphasis added).

405. Based on the case law, public universities have fairly wide latitude to determine what will be taught. In this context, excluding ID from the science curriculum is in line with other curricular decisions. *Cf. Edwards v. Cal. Univ. of Pa.*, 156 F.3d 488, 491 (3d Cir. 1998) (“[A] public university professor does not have a First Amendment right to decide what will be taught in the classroom.”); *Keen v. Penson*, 970 F.2d 252, 257 (7th Cir. 1992) (“This Court has recognized the supremacy of the academic institution in matters of curriculum content.”); *Bishop v. Aronov*, 926 F.2d 1066, 1075 (11th Cir. 1991) (noting that university officials may control the curriculum decisions); *Scaliet v. Rosenblum*, 911 F. Supp. 999, 1011 (W.D. Va. 1996) (recognizing that the schools have a right to determine their own curriculum, which must be followed); *Cooper v. Ross*, 472 F. Supp. 802, 809 (E.D. Ark. 1979) (“[A] state university has the undoubted right to prescribe its curriculum, to select its faculty and students and evaluate their performances, and to define and maintain its standards of academic accomplishment.”). The ability of a university to control science curriculum appears to be especially true as it pertains to ID and science, as at least one prominent decision has determined that ID is not science. *See Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707 (M.D. Pa. 2005).

406. *See, e.g., Hardy v. Jefferson Cmty. Coll.*, 260 F.3d 671, 678 (6th Cir. 2001) (reviewing a number of secondary school cases to support its determination); *Vanderhurst v. Colo. Mtn. Coll. Dist.*, 208 F.3d 908, 912-13 (10th Cir. 2000) (same); *Bishop v. Aronov*, 926 F.2d 1066, 1072-74 (11th Cir. 1991) (same); *Scaliet v. Rosenblum*, 911 F. Supp. 999, 1016-17 (W.D. Va. 1996) (same).

course in question is seen as university speech<sup>407</sup>—which most courts hold it is<sup>408</sup>—and thus distinguishable from cases involving private speech.<sup>409</sup> Other courts base their decisions on the cases involving the free speech rights of teacher’s for out of class speech or the speech rights of government employees generally.<sup>410</sup> These courts generally weigh the interests of the government employee as a private citizen in “commenting on matters of public concern” and the interest of the government as employer in promoting its interests.<sup>411</sup> Still other courts

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407. See, e.g., *Brown v. Arementi*, 247 F.3d 69, 75 (3d Cir. 2001) (discussing on what basis a university may regulate professors based on its own pedagogic concerns over academic freedom); *Vanderhurst*, 208 F.3d at 914 (“[W]hether [ ] [the] termination reasonably related to the College’s legitimate pedagogical interests is the test for determining whether his speech fell within the ambit of First Amendment protection.”); *Bishop*, 926 F.2d at 1074 (“[E]ducators do not offend the First Amendment by exercising editorial control over the style and content of student [or professor] speech in school-sponsored expressive activities so long as their actions are reasonably related to legitimate pedagogical concerns.”); *Scallet*, 911 F. Supp. at 1014 (determining that the speech in question was seen as university speech); *Silva v. Univ. of N.H.*, 888 F. Supp. 293, 314 (D.N.H. 1994) (recognizing a right to protect valid pedagogical purposes, but finding the policy in this case too subjective to merit protection).

408. See, e.g., *Cal. Univ. of Pa.*, 156 F.3d at 492 (noting that in this case regulation of the speech was allowed because the university could be considered the speaker, through the professor, and could make decisions as to the content of its own derivative speech); *Bishop*, 926 F.2d at 1071 (recognizing the university has an interest in the professor disseminating his beliefs under the guise of university instruction); *Scallet*, 911 F. Supp. at 1014 (holding that the speech is university speech).

409. See, e.g., *Cal. Univ. of Pa.*, 156 F.3d at 492 (discussing why a university may control a private individual’s speech, where it is done in a manner that makes it, in reality, university speech); *Bishop*, 926 F.2d at 1073 (“While a student’s expression can be more readily identified as a thing independent of the school, a teacher’s speech can be taken as directly and deliberately representative of the school. Hence, where the in-class speech of a teacher is concerned, the school has an interest not only in preventing interference with the day-to-day operation of its classrooms as in *Tinker*, but also in scrutinizing expressions that “the public might reasonably perceive to bear its imprimatur.”); *Scallet*, 911 F. Supp. at 1014 (finding that the speech in question was public not private). But see *Bonnell v. Lorenzo*, 241 F.3d 800, 811 (6th Cir. 2000) (involving a case of mixed private and public speech).

410. See, e.g., *Vanderhurst*, 208 F.3d at 913-14 (focusing on the free speech rights of a government employee); *Levin v. Harleston*, 966 F.2d 85, 88 (2d Cir. 1992) (focusing on the free speech rights of the professor in question).

411. See, e.g., *Brown*, 247 F.3d at 75 (finding that the professor’s contentions regarding the grading policy were not matters of public concern); *Hardy*, 260 F.3d at 679 (focusing on aspects of the speech related to speaking on a matter of public concern); *Dambrot v. Cent. Mich. Univ.*, 55 F.3d 1177, 1188 (6th Cir. 1995) (focusing on whether the speech was a matter of public concern); *Blum v. Schlegel*, 18 F.3d 1005, 1011-12 (2d Cir. 1994) (involving, in part, whether or not a law school professor’s advocating for legalized marijuana was a matter of public concern); *Keen v. Penson*, 970 F.2d 252, 258 (7th Cir. 1992) (discussing the balancing of comments on matters of public concern, but failing to find it was a matter of public concern in this particular case); *Martin v. Parrish*, 805 F.2d 583, 584-85 (5th Cir. 1986) (noting that the test for matters involving public employees is whether their speech touched on a matter of public concern).

apply both approaches.<sup>412</sup> In the end, the cases make clear that universities may preclude discredited or religiously grounded theories from being taught as science.<sup>413</sup>

A final question remains. Is it unjustified discrimination to exclude ID research from university research support or credit? While the case law is quite clear about the right of university officials and faculty committees to affect the substance of certain courses despite academic freedom concerns, it is not so clear regarding the university's role in research. *Bishop* acknowledges that academic freedom is far greater when it comes to research.<sup>414</sup> Yet we know that in hiring, tenure, promotion, and merit increase decisions in the sciences, much depends on the researcher's publication output, ability to get grants from recognized granting sources, and professional reputation among peers. It is also clear that ID theorists are not generally published in mainstream science journals, their work is not highly regarded (if regarded at all) by scientific peers, and their ability to get grants from mainstream granting institutions is basically nonexistent.<sup>415</sup>

If ID is not science, science departments have no duty to fund it anymore than a science department would have a duty to fund a professor's art collection. A department or university would also have the ability to require that its name not be used in connection with the work. For example, if a faculty member wants to engage in a partisan political blog or a blog promoting drug use, a public university would have the right to refuse the faculty member resources for the blog and to require that the university name not be used to promote it.<sup>416</sup> This result

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412. See, e.g., *Bishop*, 926 F.2d at 1072 (discussing both the free speech rights of government employees generally and the weighing of interests on matters of public concern); *Bonnell*, 241 F.3d at 803 (primarily using a public concern approach, but also discussing the rights of public employees); *Marinoff v. City Coll. of N.Y.*, 357 F. Supp. 2d 672, 682-89 (S.D.N.Y. 2005) (same); *Scaliet*, 911 F. Supp. at 1014 (same).

413. See *Bishop*, 926 F.2d at 1072.

414. See *id.* at 1076.

415. See *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 737-38, 744-45 (M.D. Pa. 2005).

416. It is likely that such a decision would fall under the ambit of decisions which involve universities' right to determine the curriculum, and thus implicitly for which activities it will provide funding. Cf. *Edwards v. Cal. Univ. of Pa.*, 156 F.3d 488, 491 (3d Cir. 1998) ("[A] public university professor does not have a First Amendment right to decide what will be taught in the classroom."); *Bishop*, 926 F.2d at 1075 (noting that university officials may control the curriculum decisions); *Scaliet*, 911 F. Supp. at 1011 (recognizing that the schools have a right to determine their own curriculum which must be followed); *Keen*, 970 F.2d at 257 (7th Cir. 1992) ("This Court has recognized the supremacy of the academic institution in matters of curriculum content."); *Cooper v. Ross*, 472 F. Supp. 802, 809 (E.D. Ark. 1979) ("[A] state university has the undoubted right to prescribe its curriculum, to select its faculty and students and evaluate their performances, and to define and maintain its standards of academic accomplishment.").

is not required, but the university may do so. The same would be true with ID.

Moreover, science departments, like other departments, need not support or reward research that does not meet the basic criteria set for such support or reward.<sup>417</sup> If an ID researcher cannot place work in accepted peer review journals, acquire grants from (scientifically) credible granting institutions, and/or receive favorable peer review from scientists, then there is no duty to support the work.<sup>418</sup> ID is not science.<sup>419</sup> One would not expect science departments to have to fund UFOlogy research, research on why the Earth is flat, or why the Earth is the center of the universe. The same is true for ID research. Departments could fund such research, but they need not and are not likely to do so.<sup>420</sup>

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417. Cf. *Urofsky v. Gilmore*, 216 F.3d 401, 410 (4th Cir. 2000) (determining that a Virginia statute limiting access to sexually explicit material for research did not violate the academic freedom of the professors; this is similar to limiting, by not giving credit for, research related to ID); *Bishop*, 926 F.2d at 1075 (noting that university officials may control the curriculum decisions, likely including ones involving what research will be credited within the department); *Scallet*, 911 F.Supp. at 1011 (recognizing that the schools have a right to determine their own curriculum which must be followed); *Keen*, 970 F.2d at 257 (“This Court has recognized the supremacy of the academic institution in matters of curriculum content.”); *Cooper*, 472 F. Supp. at 809 (“[A] state university has the undoubted right to prescribe its curriculum, to select its faculty and students and evaluate their performances, and to define and maintain its standards of academic accomplishment.”). See *Dow Chemical v. Allen*, 672 F.2d 1262, 1275 (7th Cir. 1982) (The court determined that, related to academic freedom, “[I]t is clear that whatever constitutional protection is afforded by the First Amendment extends as readily to the scholar in the laboratory as to the teacher in the classroom.” This proposition may be read to support the cases above in the sense that the professors have a wide latitude *within* their research area, but cannot simply research outside subjects like ID (just as they cannot simply teach ID) without university approval of the curriculum/research.).

418. See *Kitzmiller*, 400 F. Supp. 2d at 737-38, 744-45.

419. See *id.* at 735-46; see also *supra* Part I.

420. The question of tenure-revocation would be quite different. Denying credit to “junk” science is a refusal to give a carrot to those who do not engage in serious scientific work, but revoking tenure is a punishment. One is based on merit, the other, even if arguably based on merit, is punitive in nature and will be treated by courts as such. Tenure-revocation is a rare occurrence and is not generally based on research alone. As a general matter “for cause” tenure-revocation has occurred where there is a complete lack of performance, that is, failure to meet teaching, scholarship and service duties as opposed to just one category. Even then, there is generally notice and an opportunity for the faculty member to improve performance as well as general due process rights. Other cases may involve extreme malfeasance by a faculty member such as embezzlement, significant plagiarism, significant criminal conduct and the like.

Assuming the faculty member is meeting his or her teaching duties and meeting service requirements (usually involving committee work), tenure-revocation would appear more like punishment for the faculty member’s religious and/or political views. This is not a valid basis to revoke tenure. If, on the other hand, a faculty member refuses to teach his or her courses or refuses to teach them without including ID, and that faculty member engages primarily in ID research, tenure-revocation would be a possibility (even then it would depend on university policies and due process would certainly be required).

If they were required to do so, public universities would arguably be required to fund and/or reward anything and everything that a faculty member claims to be research, including astrology, alchemy, flat earth theory, and Raelian “science.” While a great deal of leeway should be given for research topics in any academic institution, the problems with requiring funding for any conceivable topic are obvious. Thus, while great leeway should be given to research topics, that leeway is not limitless, especially in fields with relatively accessible disciplinary boundaries.

ID advocates’ persecution complex seems to be just that, a complex. Any perceived persecution is a result of ID’s utter failure in the scientific proof game and the disconnect between its actual tenets and its marketing facade. ID advocates are not being discriminated against in any actionable manner and even if one disagrees with this conclusion, any discrimination faced by ID is legally and scientifically justified.

## VII. CONCLUSION

Intelligent Design is an ancient concept. In the western tradition it was heavily promoted by natural theologians engaged in religious apologetics. Thus, there is a direct connection—although not a total overlap—with creationist tenets. While some of the terminology used by modern ID advocates is new, the concepts they propound go back at least as far as the early 19<sup>th</sup> century. The major differences are that current ID advocates do not generally acknowledge that the designer is God and they use ID to attack evolutionary biology. So why rehash these old concepts without acknowledging their religious roots?

The form that the current ID movement has taken is primarily a response to cases decided under the Establishment Clause. ID advocates are marketing creation in a manner they believe will allow it to be taught in public schools and to gain entrance into scientific debate. So far they have been almost uniformly unsuccessful. The reasons for this lack of success are based both in law and science.

In order to succeed legally, ID advocates must engage in what this article has called the “proof game.” They must try to prove that they have something scientific to offer. Yet, in the only major case decided thus far—*Kitzmiller*—they failed to do so. Moreover, in the realm of mainstream science they have also failed. This leaves ID advocates in the position of having to characterize themselves as victims of viewpoint discrimination, but such arguments do not help them unless science curricula are public fora subject to equal access. This is patently not so.

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The reason would be failure to perform even the basic requirements of the job, however, and not the faculty member’s belief in ID. See Ravitch, *supra* note 263, at 1084-85.



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In fact, to find otherwise would open the science curriculum up to alchemy, astrology, UFOlogy, and the like. Moreover, from the perspective of scientific philosophy, such an argument would require the acceptance of scientific relativism, which contradicts the metaphysical claims of ID advocates that there is a clear line between moral and immoral positions and that evolution promotes scientific materialism and moral relativism. Thus, ID advocates have cornered themselves legally and philosophically by entering the proof game in order to gain acceptance as science. Courts have repeatedly held that concepts like ID may very well have a place in philosophy or religion courses (and research), and these would seem the proper contexts for ID to be taught and studied.