

PUBLIC EDUCATION, RELIGIOUS ESTABLISHMENT, AND THE CHALLENGE OF INTELLIGENT DESIGN[†]

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In 1987, in *Edwards v. Aguillard*, the United States Supreme Court declared unconstitutional a Louisiana statute (the Balanced-Treatment Act) that required the state's public schools to teach Creationism if evolution was taught and to teach evolution if Creationism was taught.¹ That decision was the culmination of a series of court battles and cultural conflicts that can be traced back to the famous Scopes Trial of 1925 in Dayton, Tennessee.² Although many thought, and continue to think, that *Edwards* ended the debate over the teaching of origins in public schools, a

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

2. RONALD L. NUMBERS, *DARWINISM COMES TO AMERICA* 76–91 (1998); EDWARD J. LARSON, *SUMMER FOR THE GODS: THE SCOPES TRIAL AND AMERICA'S CONTINUING DEBATE OVER SCIENCE AND RELIGION* (1997); STEPHEN GOLDBERG, *CULTURE CLASH: LAW AND SCIENCE IN AMERICA* 69–83 (1994); EDWARD J. LARSON, *TRIAL AND ERROR: THE AMERICAN CONTROVERSY OVER CREATION AND EVOLUTION* (1985); *THE WORLD'S MOST FAMOUS COURT TRIAL; STATE OF TENNESSEE V. JOHN THOMAS SCOPES: COMPLETE STENOGRAPHIC REPORT OF THE FAMOUS COURT TEST OF THE TENNESSEE ANTI-EVOLUTION ACT, AT DAYTON, JULY 10 TO 21, 1925, INCLUDING SPEECHES AND ARGUMENTS OF ATTORNEYS, TESTIMONY OF NOTED SCIENTISTS, AND BRYAN'S LAST SPEECH* (1971); RAY GINGER, *SIX DAYS OR FOREVER?: TENNESSEE V. JOHN THOMAS SCOPES* (1958); R.M. Cornelius, *Their Stage Drew All the World: A New Look at the Scopes Evolution Trial*, TENN. Q., Summer 1981, at 15; see also *Scopes v. State*, 289 S.W. 363 (Tenn. 1927), and *Epperson v. Arkansas*, 393 U.S. 97 (1968) (striking down on establishment grounds Arkansas statute that forbade the teaching of evolution in public schools, for the prohibition was based on evolution's inconsistency with the Genesis-account of origins, a religious point of view); *McLean v. Ark. Bd. of Educ.*, 529 F. Supp. 1255 (E.D. Ark. 1982) (striking down on establishment grounds Arkansas statute that required public schools to offer balanced-treatment of evolution and creationism, because the definition of "creationism" is transparently identical to the Genesis-account of origins, a religious point of view).

new movement, made up of largely well-educated and well-credentialed scholars, has given it new life.

The main thrust of this new movement, known as Intelligent Design (ID),³ is that intelligent agency, as an aspect of scientific theory-making, has more explanatory power in accounting for the specified, and sometimes irreducible, complexity of some physical systems, including biological entities, and/or the existence of the universe as a whole, than the blind forces of unguided and everlasting matter.

The purpose of this paper is to provide an answer to the following question: Given the Supreme Court's holding in *Edwards*, current Establishment Clause jurisprudence, and the nature of ID, would ID pass constitutional muster if it were permitted or required by a government entity to be part of a public school's curriculum? In order to answer that question, we must first present the case for ID.

I. THE RISE OF, AND CASE FOR, INTELLIGENT DESIGN

Among the scholars affiliated with ID are Phillip E. Johnson,⁴ William Dembski,⁵ Alvin Plantinga,⁶ J.P. Moreland,⁷ Michael Behe,⁸ Dean Kenyon,⁹ Dallas Willard,¹⁰ Stephen C.

3. For a diversity of perspectives on ID's history and publications, see NUMBERS, *supra* note 2, at 15-21; Barbara Forrest, *Intelligent Design Creationism's 'Wedge Strategy'*, in INTELLIGENT DESIGN CREATIONISM AND ITS CRITICS: PHILOSOPHICAL, THEOLOGICAL, AND SCIENTIFIC PERSPECTIVES (Robert T. Pennock ed., 2001) [hereinafter INTELLIGENT DESIGN CREATIONISM]; John Angus Campbell, *Intelligent Design, Darwinism, and the Philosophy of Public Education*, 1 RHETORIC & PUB. AFF. 469 (1998); William A. Dembski, *The Intelligent Design Movement*, COSMIC PURSUIT, Spring 1998, available at http://www.arn.org/docs/dembski/wd_idmovement.htm (on file with the Notre Dame Journal of Law, Ethics & Public Policy); Thomas M. Lessel, *Intelligent Design: A Look at Some of the Relevant Literature*, 1 RHETORIC & PUB. AFF. 671 (1998).

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5. Associate Research Professor in the Conceptual Foundations of Science, Baylor University; Ph.D in Mathematics, University of Chicago; Ph.D in Philosophy, University of Illinois, Chicago. Dr. Dembski has also done postdoctoral work in mathematics at Cornell University and the Massachusetts Institute of Technology, in physics at the University of Chicago and in computer science at Princeton University.

6. John A. O'Brien Professor of Philosophy, University of Notre Dame; Ph.D in Philosophy, Yale University.

7. Distinguished Professor of Philosophy, Biola University; Ph.D in Philosophy, University of Southern California.

8. Professor of Biological Sciences, Lehigh University; Ph.D in Biochemistry from the University of Pennsylvania.

9. Professor of Biology, San Francisco State University; Ph.D in Biophysics, Stanford University. Dr. Kenyon has been a National Science Foundation

Meyer,¹¹ Walter Bradley,¹² Hugh Ross,¹³ David Berlinski,¹⁴ Paul Nelson,¹⁵ Henry F. Schaefer III,¹⁶ Jonathan Wells,¹⁷ William Lane Craig,¹⁸ and Robert Kaita.¹⁹ The works of these and other ID scholars have been published by prestigious academic presses²⁰ and respected academic journals.²¹ These works have

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11. Ph.D in History and Philosophy of Science, Cambridge University.

12. Professor of Mechanical Engineering, Texas A & M University; Ph.D in Materials Science, University of Texas-Austin.

13. Ph.D in Astronomy, University of Toronto. Dr. Ross was a post-doctoral fellow at the California Institute of Technology for five years.

14. Ph.D in Math, Princeton University. Dr. Berlinski has been a post-doctoral fellow in mathematics and molecular biology at Columbia University.

15. Ph.D in Philosophy of Biology, University of Chicago.

16. Graham Perdue Professor of Chemistry and Director of the Center for Computational Quantum Chemistry, University of Georgia; Ph.D in Chemical Physics, Stanford University. Dr. Schaefer has been nominated for the Nobel Prize several times.

17. Ph.D in Molecular and Cell Biology, University of California-Berkeley; Ph.D in Religious Studies, Yale University. Dr. Wells has done postdoctoral research at the University of California-Berkeley, and has taught biology at California State University-Hayward.

18. Research Professor of Philosophy, Biola University; Ph.D in Philosophy, University of Birmingham (U.K.); D. Theol., University of Munich.

19. Principal Research Physicist, Plasma Physics Laboratory, Princeton University; Ph.D in Physics, Rutgers University. Dr. Kaita teaches in Princeton University's department of astrophysical sciences.

20. See, e.g., WILLIAM A. DEMBSKI, *NO FREE LUNCH: WHY SPECIFIED COMPLEXITY CANNOT BE PURCHASED WITHOUT INTELLIGENCE* (2002) [hereinafter DEMBSKI, *NO FREE LUNCH*]; DEL RATZSCH, *NATURE, SCIENCE, AND DESIGN: THE STATUS OF DESIGN IN NATURAL SCIENCE* (2001); NATURALISM: A CRITICAL ANALYSIS (William Lane Craig & J.P. Moreland eds., 2000); WILLIAM A. DEMBSKI, *THE DESIGN INFERENCE: ELIMINATING CHANCE THROUGH SMALL PROBABILITIES* (1998) [hereinafter DEMBSKI, *THE DESIGN INFERENCE*]; MICHAEL BEHE, *DARWIN'S BLACK BOX: THE BIOCHEMICAL CHALLENGE TO EVOLUTION* (1996) [hereinafter DARWIN'S BLACK BOX]; WILLIAM LANE CRAIG & QUENTIN SMITH, *THEISM, ATHEISM, AND BIG BANG COSMOLOGY* (1993); see also *DEBATING DESIGN: FROM DARWIN TO DNA* (William A. Dembski & Michael Ruse eds., forthcoming 2004); *DARWINISM, DESIGN, AND PUBLIC EDUCATION* (John A. Campbell & Stephen C. Meyer eds., forthcoming 2003); PAUL A. NELSON, *ON COMMON DESCENT* (forthcoming).

21. See, e.g., Michael J. Behe, *Self-Organization and Irreducibly Complex Systems: A Reply to Shanks and Joplin*, 67 *PHIL. OF SCI.* 155 (2000); Paul A. Nelson, *Is 'Intelligent Design' Unavoidable—Even By Howard Van Till?: A Response*, 34 *ZYGON* 677 (1999); William A. Dembski & Stephen C. Meyer, *Fruitful Interchange or Polite Chitchat?: The Dialogue Between Science and Theology*, 33 *ZYGON* 415 (1998); William A. Dembski, *Randomness by Design*, 25 *NOÛS* 75 (1991); William Lane Craig, *Barrow and Tipler on the Anthropic Principle vs. Divine Design*, 39 *BRIT. J. FOR THE*

PHIL. OF SCI. 389 (1989); William Lane Craig, *God, Creation and Mr. Davies*, 37 BRIT. J. FOR THE PHIL. OF SCI. 163 (1986); John Leslie, *Anthropic Principle, World Ensemble, Design*, 19 AM. PHIL. Q. 141 (1982).

Because ID's project strikes at the philosophical core of evolutionary theory—its unchallenged epistemological and metaphysical presuppositions—ID proponents have published most of their pro-ID essays in peer-reviewed periodicals that specialize in the *philosophy* of science or in anthologies produced by respected university presses. In addition, as shown in the previous note, ID proponents have made significant inroads in publishing monographs with prestigious presses. The ID movement has found more success in these venues rather than in traditional scientific journals, for the latter typically do not have reviewers and editors adequately trained to assess the soundness of arguments—both empirical and philosophical—that challenge the core presuppositions of an entrenched paradigm.

However, design theorists' publication in biology peer-reviewed journals is thin, and cannot be entirely attributed to hostile editorial boards who want to suppress ID (though that sometimes is the case). According to a personal email from Dembski,

I would say there are two things going on: (1) Much of biological research is frankly engineering (genetic engineering, molecular machines, etc.) and thus already frameable in ID terms; the problem is that Darwinists are framing this work in Darwinian terms, seeing the Darwinian mechanism as the great engineer of biology. Thus work that should be considered design-theoretic research has been co-opted for a materialist agenda. (2) We are just getting off the ground with a biological research program that is uniquely design-theoretic (i.e., which cannot be co-opted by Darwinians). The number of researchers who can see how to employ design-theoretic concepts to inspire fruitful biological research is merely a handful.

Email from William A. Dembski, to Francis J. Beckwith (July 10, 2002) (on file with author). Nevertheless, it should be stressed that ID opponents are *mistaken* when they claim that design theorists have not published peer-reviewed works.

However, as a matter of constitutional law, the Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, held that "[t]he fact of publication (or lack thereof) in a peer reviewed journal thus will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised." Peer review publication, according to the Court, "is not a sine qua non of admissibility; it does not necessarily correlate with reliability . . . and in some instances well-grounded but innovative theories will not have been published." 509 U.S. 579, 593 (1993). Those viewpoints that "are too particular, too new, or of too limited interest" may suffer the same fate. *Id.* at 593-94. In *Daubert* the Court rejected the widely-held evidentiary standard of the D.C. Circuit case, *Frye v. United States*: a scientific opinion is reliable and therefore admissible if it is generally accepted within the scientific community. 293 F. 1013, 1014 (D.C. Cir. 1923). The Supreme Court held in *Daubert* that the *Frye* standard, "absent from, and incompatible with, the Federal Rules of Evidence, should not be applied in federal trials." This, of course, does not mean that there are no standards by which to assess scientific opinion; rather, it means that polling scientists, though relevant, is no longer sufficient or necessary. According to the Court, "[p]roposed testimony must be supported by appropriate validation—i.e., 'good grounds,' based on what is known." *Daubert*, 509 U.S. at 590. That is, "the requirement that an expert's testimony pertain to 'scientific knowledge' establishes a stan-

also received attention, including critical assessment, by the wider academic and research community²² as well as the popular press.²³

Although the ID movement is far from monolithic, there are particular strands of thought within the movement, and types of arguments by its proponents, that are important for the purpose of assessing whether teaching ID in public schools would pass constitutional muster. We will look at two strands of ID that are relevant to this assessment: (A) The Case Against Methodological Naturalism, and (B) The Case for Intelligent Design. I will conclude this section with a brief overview of some other concerns and arguments that have arisen in the debate over ID. Because the literature supporting ID is sophisticated, vast and growing, my presentation of its case will be cursory.

dard of evidentiary reliability." *Id.* at 589–90. This means that "the test of scientific legitimacy comes from the validation of the empirical research supporting the evidence." David K. DeWolf et al., *Teaching the Origins Controversy: Science, or Religion, or Speech?*, 2000 UTAH L. REV. 39, 77 (citing *Daubert*, 509 U.S. at 594). It is, very simply and sensibly, a matter of arguments and their soundness and not a matter of popularity.

22. See, e.g., INTELLIGENT DESIGN CREATIONISM, *supra* note 3; ROBERT T. PENNOCK, TOWER OF BABEL: THE EVIDENCE AGAINST THE NEW CREATIONISM (1999); Brian Fitelson et al., *How Not to Detect Design*, PHIL. OF SCI. 66 (1999); Niall Shanks & Karl H. Joplin, *Redundant Complexity: A Critical Analysis of Intelligent Design in Biochemistry*, PHIL. OF SCI. 66 (1999); Howard J. Van Till, *Does "Intelligent Design" Have a Chance? An Essay Review*, ZYGON 34 (1999); Bruce H. Weber, *Irreducible Complexity and the Problem of Biochemical Emergence*, BIOLOGY & PHIL. 14 (1999); Symposium, *The Intelligent Design Argument*, RHETORIC & PUB. AFF. 1 (1998); Neil W. Blackstone, *Argumentum Ad Ignorantiam*, Q. REV. OF BIOLOGY 72 (1997); Robert Dorit, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 85 AM. SCIENTIST 474 (1997) (reviewing DARWIN'S BLACK BOX, *supra* note 21), available at <http://www.americanscientist.org/bookshelf/Leads97/Darwin97-09.html> (on file with the Notre Dame Journal of Law, Ethics & Public Policy); H. Allen Orr, *Darwin v. Intelligent Design (Again)*, 21 BOSTON REV. (Dec. 1996–Jan. 1997), available at <http://bostonreview.mit.edu/br21.6/orr.html> (on file with the Notre Dame Journal of Law, Ethics & Public Policy); J.A. COYNE, *God in the Details*, NATURE 383 (1996).

In 2000 both Baylor University (The Nature of Nature: An Interdisciplinary Conference on the Role of Naturalism in Science, Baylor University, Apr. 12–15, 2000) and Yale University (Science and the Evidence for Design in the Universe, Yale University, Nov. 2–4, 2000) hosted major conferences on ID. The American Museum of Natural History (New York City) in April 2002, presented as part of its lecture series a public discussion entitled, *Evolution or Intelligent Design?: Examining the Intelligent Design Issue*, at http://www.amnh.org/programs/lectures/index.html?src=p_h# (on file with the Notre Dame Journal of Law, Ethics & Public Policy).

23. See Beth McMurtrie, *Darwinism Under Attack*, CHRON. OF HIGHER EDUC., Dec. 21, 2001, at 4; James Glanz, *Biologists Face a New Theory of Life's Origins*, N.Y. TIMES, Apr. 8, 2001, at 1; Teresa Watanabe, *Enlisting Science to Find the Fingerprints of a Creator*, L.A. TIMES, Mar. 25, 2001, at A1.

A. *The Case Against Methodological Naturalism*

ID proponents maintain that there is a fundamental reason why evolution²⁴ seems to most scholars in the humanities and sciences to be the only real legitimate explanation for the origin of the universe and life: a prior commitment to methodological naturalism (MN), "the view that science must be restricted solely to undirected natural processes"²⁵ According to Phillip Johnson, "[a] methodological naturalist defines science as the search for the best naturalistic theories. A theory would not be naturalistic if it left something out (such as the existence of genetic information or consciousness) to be explained by a supernatural cause." Therefore, "all events in evolution (before the evolution of intelligence) are assumed attributable to unintelligent causes. The question is not *whether* life (genetic information) arose by some combination of chance and chemical laws, to pick one example, but merely *how* it did so."²⁶ Thus, according to design theorists, once one defines science as a discipline that allows only naturalistic explanations, and if one maintains that science is the only field that provides truth on the

24. What I mean by evolution is *naturalistic* evolution, the view that the entire natural universe, including its living organisms in all their complexities and differences and apparent designs, can be accounted for by strictly material processes (such as natural selection) without resorting to any designer, Creator, or non-material entity or agent as an explanation. That is, an exhaustive materialist description of the natural universe and an accounting of the entities in it, including living organisms, is in principle possible. Therefore, to say that evolution is true—as understood by its leading proponents—is to say that naturalism (or materialism) as a worldview is true, for the former *entails* the latter, for the latter is a necessary condition of the former. Consequently, to challenge that necessary condition—by appealing to something even as modest as Intelligent Design (to say nothing of full-blown Creationism)—poses a threat to the materialist edifice. However, by attempting to rebut this threat—by taking on the arguments for ID—evolutionists implicitly accept the first, and most important premise, of the ID movement. That is, evolution provides an answer to the *very same* question ID provides an answer: What is the origin of apparent design in biological organisms and/or other aspects of the natural universe and/or the universe as a whole? Evolution answers the question by appealing exclusively to the forces of unguided matter (and/or energy), the latter includes intelligent agency as a legitimate cause that may account for some apparently natural phenomena. But if this is the case, then the legal grounds for teaching ID in public schools, as we shall see, are strengthened, for it would mean that an origins curriculum that excludes design and offers to students naturalism as the only approved metaphysical position of the state may itself run afoul of the Establishment Clause.

25. WILLIAM A. DEMBSKI, *INTELLIGENT DESIGN: THE BRIDGE BETWEEN SCIENCE AND THEOLOGY* 119 (1999).

26. PHILLIP E. JOHNSON, *REASON IN THE BALANCE: THE CASE AGAINST NATURALISM IN SCIENCE, LAW & EDUCATION* 208 (1986).

question of origins, then evolution *must be true* even if there are many unanswered questions that seem incapable of being adequately addressed under the evolutionary paradigm. Thus, ID proponents maintain that what should be a rigorous intellectual debate has become, in the hands of more hostile partisans, a question-begging street fight over metaphysical turf. This is why ID proponents maintain that MN is a necessary presupposition for the veracity of the evolutionary edifice and entails ontological materialism (OM) as a worldview,²⁷ but is arguably not necessary for the practice of science qua science.²⁸

How do ID supporters critique MN? Or more properly, why would they want to? After all, it seems as though science, as we all learned in high school and college, deals exclusively with natural causes and explanations. Sneaking in "God" or some disembodied intelligence to account for a particular phenomenon seems to most of us like a science-stopper that cheats us out of a *real* account of what happened. This "God-of-the-gaps" strategy, as it is pejoratively called, is the antithesis of good science, and hence, any talk of non-natural, non-material accounts of natural phenomena immediately elicits the accusation that such talk is

27. "Ontological materialism," which I will employ interchangeably with the terms "naturalism," "philosophical naturalism," "scientific materialism," and "materialism," is the view that the natural universe is all that exists and all the entities in it can be accounted for by strictly material processes. Thus, if science is the paradigm of knowledge (as is widely held in our culture), and it necessarily presupposes *methodological naturalism*, then ontological materialism is the only worldview for which one can have "knowledge."

Although for the purposes of this essay, the terms "naturalism" and "materialism" are employed interchangeably, they are not necessarily synonymous. As Moreland points out, "[O]ne could be a naturalist without being a physicalist [or materialist], say by embracing Platonic forms, possibilities, or abstract objects like sets. and one can be a physicalist [or materialist] and not a natural-

ist (e.g., if one held that God is a physical object)." J.P. Moreland, *Theistic Science & Methodological Naturalism*, in *THE CREATIONISM HYPOTHESIS: SCIENTIFIC EVIDENCE FOR AN INTELLIGENT DESIGNER* 50 (J.P. Moreland ed., 1994). However, in this essay, materialism and naturalism (or philosophical naturalism) are treated as synonymous terms.

28. See generally DEMBSKI, *supra* note 25, at 97–183; JOHNSON, *supra* note 26, at 205–18; Moreland, *supra* note 27; Jonathan Wells, *Unseating Naturalism: Recent Insights from Developmental Biology*, in *MERE CREATION: SCIENCE, FAITH & INTELLIGENT DESIGN* (William A. Dembski ed., 1998) [hereinafter *MERE CREATION*]; Alvin Plantinga, *Methodological Naturalism?*, *ORIGINS & DESIGN* 18 (1997),

the disreputable "God-of-the-gaps" strategy.²⁹ Thus, it seems to many that MN is a necessary condition for science to function properly.

However, design theorists argue that there may be times at which an intelligent designer better accounts for certain phenomena than do material causes. And if that is the case, then the naturalist's appeal to possible future materialist accounts of the phenomena is driven, not by the data, but by MN and thus is a type of "naturalism-of-the-gaps."³⁰ Design theorists, as we shall see, do not employ intelligent design as a mere "gap" when all natural explanations fail. But rather, they present criteria that they believe are useful in detecting and falsifying design. (Whether such criteria actually work, of course, is another question entirely).

29. "God-of-the-gaps," the philosophical equivalent of Lochnerizing in Supreme Court jurisprudence, is said to occur when a scientist, unable to develop a natural explanation for an observation or event, resorts to God or some other supernatural agency or power as an explanation. When the scientist or a future scientist discovers a natural explanation, God is no longer needed to fill the gap and so is discarded as an explanation. So, according to conventional wisdom, a God-of-the-gaps strategy short circuits scientific investigation. For analyses of this problem, see John Mark Reynolds, *God of the Gaps: Intelligent Design & Bad Apologetic Advice*, in MERE CREATION, *supra* note 28, at 313-31, and Moreland, *supra* note 27, at 59-60.

It should be noted, however, that the reason why the God-of-the-gaps is disreputable is because it has been used to explain unknown physical mechanisms (e.g., perturbed orbits of planets), just the sorts of things for which agency seems particularly inadequate to explain. As Dembski writes:

The "gaps" in the [g]od-of-the-gaps objection are meant to denote gaps of ignorance about underlying physical mechanisms. But there is no reason to think that all gaps give way to ordinary physical explanations once we know enough about the underlying physical mechanisms. The mechanisms simply do not exist. Some gaps might constitute ontic discontinuities in the chain of physical causes and thus remain forever beyond the capacity of physical mechanisms.

DEMSKI, NO FREE LUNCH, *supra* note 20, at 334-35. Hence, if a "gap"—that is, an apparently contranomic event that cannot be accounted for by material mechanisms—exemplifies phenomena whose properties, in other contexts, we typically attribute to design, then it is unclear why attributing the "gap" to intelligent agency compromises the pursuit for truth. After all, it may be true that materialism is false.

30. I originally used this term, "naturalism-of-the-gaps," in my Ph.D. dissertation which was published as a book. FRANCIS J. BECKWITH, DAVID HUME'S ARGUMENT AGAINST MIRACLES: A CRITICAL ANALYSIS 76 (1989). I describe Hume's a priori rejection of miracle-claims as an "*ad hoc naturalism-of-the-gaps*."

Because the critiques of MN in the ID literature are sophisticated and plentiful,³¹ there is no way I can present all the arguments, or even detailed presentations of some of them, in this paper. However, the key premise behind most of these critiques is the correct observation that MN is not a claim *of* science—e.g., Einstein's Theory of Relativity—but a claim *about* natural science. According to Moreland, the claim that natural science must adopt MN is a "second-order philosophical" claim "*about* science."³² That is, the question of whether MN is necessary for natural science is a philosophical claim that must be justified *philosophically*; it cannot be justified *by* natural science, if it is alleged to be a presupposition for the practice of natural science. No doubt natural science assumes certain preconditions, some of which appear to be essential to its practice. But none of them is derived *from* science; they are philosophical presuppositions that make science possible.

In addition, other ID proponents maintain that certain philosophical arguments—e.g., arguments for a substance view of persons, the existence of an immaterial first cause, the existence of moral properties, and the possibility of rationality itself³³—reveal the weaknesses of both MN and OM.

Thus, the real question, according to design theorists, is whether their arguments for ID work, not whether ID conflicts with MN or OM. After all, if the ID arguments work and they conflict with MN, then one may conclude, quite reasonably, that MN is not a necessary precondition of natural science after all and that an a priori commitment to OM cannot be employed to exclude positions contrary to it. For to exclude non-materialist (or ID) accounts of natural phenomena by merely defining science as requiring MN (and/or entailing OM) does not count either as a philosophical argument against ID or an argument for MN (or OM); it is at best, circular reasoning, and at worst, intellectual imperialism.

31. See generally NATURALISM: A CRITICAL ANALYSIS, *supra* note 20; DEMBSKI, *supra* note 25, at 97–183; JOHNSON, *supra* note 26, at 205–18; Wells, *supra* note 28; Johnson, *supra* note 28; Plantinga, *supra* note 28; Moreland, *supra* note 27.

32. See Moreland, *supra* note 27, at 43.

33. See generally *id.*; FRANCIS J. BECKWITH, LAW, DARWINISM, AND PUBLIC EDUCATION: THE ESTABLISHMENT CLAUSE AND THE CHALLENGE OF INTELLIGENT DESIGN ch. 3, pt. A, § 3 (2003); NATURALISM: A CRITICAL ANALYSIS, *supra* note 20; J.P. Moreland, *Creation Science and Methodological Naturalism*, in MAN AND CREATION: PERSPECTIVES ON SCIENCE AND THEOLOGY (Michael Bauman ed., 1993).

B. *The Case for Intelligent Design*

In addition to challenging methodological naturalism, design theorists present a positive case for their position. At the core of the ID research program is its criteria by which its proponents claim they can detect or falsify design. William A. Dembski proposes one such criterion. He proposes an explanatory filter to detect *specified complexity* (SC), something that we recognize in many fields as evidence of intelligent agency, e.g., "forensic science, intellectual property law, insurance claims investigation, cryptography, and random number generation."³⁴ Thus, what Dembski suggests is not something unknown to the world of science. Rather what he and his colleagues in the ID movement propose is that we extend these insights, which have proved so fruitful in other fields, to the world of the natural sciences.

Why specified complexity? According to Dembski, "[w]henever we infer design, we must establish three things—*contingency, complexity and specification*. Contingency, by which we mean that an event was one of several possibilities, ensures that the object is not the result of an automatic and hence unintelligent process."³⁵ In other words, an event that is not contingent is one that can be completely accounted for by natural law (or an algorithm). To cite an example, a salt crystal "results from forces of chemical necessity that can be described by the laws of chemistry. A setting of silverware is not."³⁶ The place setting is contingent, for there are no laws of chemistry or physics which direct the knife and spoon to the right side of the plate and the fork to the left. In other words, a contingent event cannot be reduced to natural law.

"Complexity," writes Dembski, "ensures that the object in question is not so simple that it can readily be explained by chance."³⁷ For Dembski, "complexity . . . is a form of probability."³⁸ For example, the improbability of opening a combination lock by chance depends on the complexity of the mechanism. The more complex the mechanism, the greater the

34. William A. Dembski, *Reinstating Design Within Science*, 1 RHETORIC & PUB. AFF. 506 (1998) [hereinafter Dembski, *Reinstating Design*]. For more sophisticated defenses of the explanatory filter, see DEMBSKI, NO FREE LUNCH, *supra* note 20, at 1-37; DEMBSKI, THE DESIGN INFERENCE, *supra* note 20; William A. Dembski, *The Third Mode of Explanation: Detecting Evidence of Intelligent Design in Science*, in 9 SCIENCE & EVIDENCE FOR DESIGN IN THE UNIVERSE 17 (Michael J. Behe et al., contris., 2000) [hereinafter Dembski, *The Third Mode*].

35. Dembski, *The Third Mode*, *supra* note 34, at 25.

36. *Id.* at 26.

37. *Id.* at 25-26.

38. *Id.* at 27.

improbability that one will be able to open the lock by chance. Therefore, "the greater the complexity, the smaller the probability. Thus to determine whether something is sufficiently complex to warrant a design inference is to determine whether it has sufficiently small probability."³⁹ Nevertheless, complexity by itself may not be design. For example, a random selection of 1,000 symbols (rtvwix%*<3q498d) and the result of 1,000 coin flips are complex and improbable, but can be explained by randomness or chance. This is why specification is essential.

"Specification ensures that this object exhibits the type of pattern that is the trademark of intelligence."⁴⁰ Specificity by itself may not be design. For example, redundant order, such as the beating of a pulsar or the earth's orbiting of the sun every 365 days, can be explained by law and necessity. However, if specification is combined with complexity, a design inference may be warranted. Dembski offers an example from one area of science, the Search for Extra-Terrestrial Intelligence (SETI). SETI researchers, in their attempt to detect intelligence outside earth, have developed a filter that has certain pre-set patterns so that it may discard radio waves that do not exhibit specified complexity. In the novel (authored by Carl Sagan) and movie versions of *Contact*, SETI researchers detect extraterrestrial intelligence when they discover a sequence of beats and pauses that correspond to the prime numbers from 2 to 101.⁴¹

Dembski makes a distinction between *specification* and *fabrication*. The latter occurs when one infers a pattern ad hoc after the fact even though chance and necessity may account for the pattern. For example,⁴² suppose a hurricane moves through my neighborhood, destroying four out of the seven homes on my street, and the three homes not destroyed are owned by me and my two brothers. Moreover, my brothers and I own the second, fourth, and sixth homes on the block, which means that the hurricane destroyed only the odd-numbered homes. Suppose I were to infer from this pattern either that the hurricane intentionally spared the property of the Beckwith boys and/or that the hurricane did not like odd-numbered homes on my block. This design inference would not be warranted since the "pattern" may be adequately accounted for by chance and necessity and thus is ad hoc. On the other hand, the pattern detected by the SETI researchers in *Contact* is not a fabrication. It is an instance of SC

39. *Id.*

40. Dembski, *Reinstating Design*, *supra* note 34, at 508.

41. *Id.* at 507-09.

42. This is my example, not Dembski's.

because it is not only highly complex and improbable, but it has specification, a pattern that is *independent* of, or *detachable* from, the event it explains. That is to say, the pattern is one that is not derived exclusively from the event—as is the ad hoc pattern read back into the hurricane example—but one we could construct even if we did not know which one of the possible events would occur. Thus, my winning the lottery with eight randomly selected numbers, though the outcome of a highly complex process with a result that is antecedently improbable, is not detachable, for it does not exhibit a pattern one could have constructed if one did not know which numbers would have been chosen. On the other hand, the pattern of the message from space in *Contact* is detachable, for our background knowledge (or side information, as Dembski calls it)⁴³ about binary arithmetic provides us the resources by which we can construct this pattern independent of the message itself. As a researcher in the movie *Contact* exclaimed, "This isn't noise, this has structure."⁴⁴ In other words, the message is not merely complex with an improbable random pattern, but has "structure," a pattern that one could have constructed independent of the message itself (as the SETI researchers evidently assumed when they constructed their pre-set patterns in a way that would not discard patterns that exhibited specified complexity). According to Dembski, "[t]his distinction between specifications and fabrications can be made with full statistical rigor."⁴⁵

There are at least three ways in which design theorists employ Dembski's filter in order to detect design in nature:⁴⁶ the

43. See Dembski, *The Third Mode*, *supra* note 34, at 47–51 n.17.

44. *CONTACT* (Warner Bros. 1997), *quoted in* Dembski, *Reinstating Design*, *supra* note 34, at 509.

45. Dembski, *Reinstating Design*, *supra* note 34, at 510; see DEMBSKI, *NO FREE LUNCH*, *supra* note 20, at 45–110.

46. The U.S. Supreme Court, in at least one case, has applied a similar type of filter in order to detect intentional racial discrimination. *Wo v. Hopkins* concerned an ordinance in San Francisco that required the approval of the Board of Supervisors for operating a laundry in a wooden building. 118 U.S. 356 (1886). (A permit was not necessary if the laundry was in a brick or stone building). According to Gerald Gunther and Kathleen Sullivan, "[t]he Board granted permits to operate laundries in wooden buildings to all but one of the non-Chinese applicants, but to none of about 200 Chinese applicants. A Chinese alien who had operated a laundry for many years was refused a permit and imprisoned for illegally operating a laundry." KATHLEEN M. SULLIVAN & GERALD GUNTHER, *CONSTITUTIONAL LAW* 750 (13th ed. 1997). Even though the ordinance was facially neutral, its administration was discriminatory, for, according to the Court, intentional discrimination was the best explanation of the pattern of the Board's granting of permits. To employ Dembski's language, chance and necessity could not account for the specified complexity found in the pattern of

irreducible complexity of certain biological systems, the information content found in DNA, and the fine-tuning of the universe for the existence of life.

1. Irreducible Complexity of Certain Biological Systems

Behe takes seriously Darwin's claim that "[i]f it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down."⁴⁷ Thus, a system that is *irreducibly complex* (IC) is a serious challenge to the explanatory power of Darwin's theory of *natural selection*.⁴⁸ Behe defines an IC system as "a single system 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 effec-

excluding every single Chinese applicant. It is contingent (i.e., it is one of many possibilities), complex (i.e., it involves numerous applicants from different racial groups with buildings made of different materials), and specified (i.e., a pattern that one would construct if one had the goal of discriminating against Chinese applicants).

47. Michael Behe, *Intelligent Design as an Alternative Explanation for the Existence of Biomolecular Machines*, 1 RHETORIC & PUB. AFF. 566 (1998) (quoting CHARLES DARWIN, *ON THE ORIGIN OF SPECIES* 154 (6th ed. 1872)). The contemporary popularizer of Darwinism, Richard Dawkins, agrees, "Evolution is very possibly not, in actual fact, always gradual. But it must be gradual when it is being used to explain the coming into existence of complicated, apparently designed objects, like eyes. For if it is not gradual in these cases, it ceases to have any explanatory power at all." RICHARD DAWKINS, *RIVER OUT OF EDEN* 83 (1995).

48. Arguing from what he observed occurs when domestic breeders engage in selection, Darwin offered *natural selection* as the engine by which species adapt, survive, acquire new characteristics, and pass them on to their offspring:

Owing to this struggle, variations, however slight and from whatever cause proceeding, if they be in any degree profitable to an individual of any species, in its infinitely complex relations to other organic beings and to external nature, will tend to the preservation of that individual, and will generally be inherited by the offspring. The offspring, also, will thus have a better chance of surviving, for, of the many individuals of any species which are periodically born, but a small number can survive. I have called this principle, by which each slight variation, if useful, is preserved by the term of Natural Selection, in order to mark its relation to man's power of selection. We have seen that man by selection can certainly produce great results, and can adapt organic beings to his own uses, through the accumulation of slight but useful variations, given to him by the hand of Nature. But Natural Selection, as we shall hereafter see, is a power incessantly ready for action, and is as immeasurably superior to man's feeble efforts, as the works of Nature are to those of Art.

CHARLES DARWIN, *ON THE ORIGIN OF SPECIES* 61 (1964) (1859).

tively cease functioning."⁴⁹ A mechanical mousetrap is an example of such a system. Writes Behe:

The mousetraps my family uses consist of a number of parts . . . : (1) a flat wooden platform to act as a base; (2) a metal hammer, which does the actual job of crushing the mouse; (3) a wire spring with extended ends to press against the platform and the hammer when the trap is charged; (4) a sensitive catch which releases when slight pressure is applied; and (5) a metal bar that connects to the catch and holds the hammer back when the trap is charged. (There are also assorted staples to hold the system together).⁵⁰

The trap will not function if any one of its components (the base, hammer, spring, catch, or holding bar) is removed. Because an IC system has no function until all its parts are in place, it cannot be accounted for by gradual changes over time, for according to natural selection a biological entity must have some function so that it may exist, change, and pass that change on to its progeny. But with IC systems, there can be no functioning intermediate forms that have yet to acquire the requisite parts, for IC systems are *irreducible* and cannot be the legacy of intermediate forms. Thus, as Behe points out, "If there is no function, selection has nothing to work on, and Darwinian evolution is thwarted."⁵¹

Behe cites a number of examples of irreducibly complex biological systems including those contained within the cell. One of the cell's molecular machines is the cilium.⁵² Behe explains that in order for the cilium to work a number of components are needed. Writes Behe:

Ciliary motion certainly requires microtubules; otherwise, there would be no strands to slide. Additionally, it requires a motor. or else microtubules of the cilium would lie stiff

49. BEHE, *supra* note 20, at 39.

50. *Id.* at 42.

51. Behe, *supra* note 47, at 567. There is controversy surrounding Behe's mousetrap example. See, e.g., Orr, *supra* note 22; John H. McDonald, *A Reducibly Complex Mousetrap*, available at <http://udel.edu/~mcdonaldmousetrap.html> (last revised Oct. 1, 2002) (on file with the Notre Dame Journal of Law, Ethics & Public Policy). However, I do not believe that these critiques of Behe's illustration fundamentally undercut his argument for the irreducible complexity of actual biological systems. For a response to these critiques as well as a fine-tuning of Behe's case, see DEMBSKI, NO FREE LUNCH, *supra* note 20, at 256-67, 279-89.

52. In addition to the cilium, Behe includes the bacterial flagellum, the

and motionless. Furthermore, it requires linkers to tug on neighboring strands, converting the sliding motion into a bending motion, and preventing the structure from falling apart. All of these parts are required to perform one function: ciliary motion. Just as the mousetrap does not work unless all of its constituent parts are present, ciliary motion simply does not exist in the absence of microtubules, connectors, and motors. Therefore we can conclude that the cilium is irreducibly complex—an enormous monkey wrench thrown into its presumed gradual, Darwinian evolution.⁵³

Behe notes in his 1996 book that among the more than one thousand essays on the cilium that have appeared in the major journals in biochemistry published between 1975 and 1995,

only two articles even attempted to suggest a model for the evolution of the cilium that takes into account real mechanical considerations. Worse, the two papers disagree with each other even about the general route such an evolution might take. Neither paper discusses crucial quantitative details, or possible problems that would quickly cause a mechanical device such as a cilium or mousetrap to be useless.⁵⁴

Consequently, reviewers of *Darwin's Black Box*, "admit[ted] the current lack of Darwinian explanations," even though most "expressed confidence that in the future such explanations will be found."⁵⁵

Behe does not share this optimism. Rather, he argues that the data are more consistent with an ID explanation. He suggests this explanation, not from ignorance, but because he maintains that we do have legitimate criteria by which to detect design (e.g., SC), and that an IC system exhibits the characteristics these criteria are meant to detect. It is contingent (i.e., it is one of many possibilities; Darwinian algorithms cannot account for it), complex (i.e., it involves numerous systems, sub-systems, and parts), and specified (i.e., patterns of biological systems and sub-systems a capable intelligence would have constructed if it intended to bring about certain functions in an organism).

53. BEHE, *supra* note 20, at 64–65.

54. *Id.* at 68.

55. Behe, *supra* note 47, at 569.

2. The Information Content Found in DNA

Stephen C. Meyer provides another case for design: an argument from the information content of DNA.⁵⁶ Since the arrival of Darwin's *The Origin of Species*, a number of theories have been proposed, and experiments conducted, in order to provide a wholly naturalistic account of the initial conditions that gave rise to life.⁵⁷ Meyer argues that none of these theories or experiments has succeeded.⁵⁸ But even if they did succeed in accounting for the chemistry of life, Meyer maintains that a wholly naturalistic explanation cannot account for the information content of DNA or the increase of information that is supposed to have occurred over time through natural selection resulting in the highly complex organisms with which the earth is now teeming.

According to Meyer, "[m]odern molecular biology has revealed that living cells—the fundamental units of life—possess the ability to store, edit, and transmit information and to use information to regulate their fundamental metabolic processes."⁵⁹ Unlike physical structures that are the result of scientific laws and/or chance—e.g., crystals, snowflakes, a home destroyed by a hurricane—DNA has information content that has the earmarks of specified complexity. An ice crystal, in contrast, is highly ordered with no information content, for it is the result of the redundant order of the chemical composition of its constituent parts. Concerning DNA, Meyer writes:

As in the case of protein, the sequence specificity of the DNA molecule strongly resembles the sequence specificity of human codes or languages. Just as the letters in the alphabet of a written language may convey a particular message depending on their sequence, so too do the sequences of nucleotides or bases in the DNA molecule convey precise biochemical messages that direct protein synthesis within the cell. . . . Thus the sequence specificity in DNA begets sequence specificity in proteins. Or put differently, the sequence specificity of proteins depends upon

56. Stephen C. Meyer, *DNA By Design: An Inference to the Best Explanation for the Origin of Biological Information*, 1 RHETORIC & PUB. AFF. 519–56 (1998); Stephen C. Meyer, *The Explanatory Power of Design: DNA and the Origin of Information*, in MERE CREATION, *supra* note 28, at 113–47 [hereinafter Meyer, *The Explanatory Power*]; see also DARWINISM, DESIGN, AND PUBLIC EDUCATION, *supra* note 20; Stephen C. Meyer, *DNA and the Origin of Life: Information, Specification and Explanation*, in DEBATING DESIGN: FROM DARWIN TO DNA, *supra* note 20.

57. Meyer, *The Explanatory Power*, *supra* note 56, at 113–19, 122–34.

58. *Id.*

59. *Id.* at 113–14.

a prior specificity—upon information—encoded in DNA.⁶⁰

Meyer critiques naturalistic attempts to account for this. He argues that self-organization scenarios (theories based on necessity) and chance hypotheses (theories based on randomness or chance) are simply incapable of accounting for the specified complexity of the information content of DNA. Both types of theories might account for either order or complexity, but they cannot account for the specified complexity of information.⁶¹ To employ an example,⁶² the laws of physics can account for the constituent parts of the tiles that contain the letters in a Scrabble game. Chance in combination with the law of gravity can account for the random arrangement of the tiles after they hit the floor following an earthquake that knocks them off the dining room table. But only an intelligent agent can account for some of the letters appearing together as a coherent message on my computer table: "go to the store and buy some chicken."

Meyer concludes that the best explanation for the specified complexity, the information content, of DNA is intelligent design. After all,

[w]e know from experience that intelligent agents create information all the time. Indeed, experience teaches that whenever high information content is present in an artifact or entity whose causal story is known, invariably creative intelligence—design—has played a causal role in the origin of the entity. Moreover, citing the activity of an intelligent agent really does explain the origin of certain features such as, for example, the faces on Mount Rushmore or the inscriptions on the Rosetta Stone. (Imagine the absurdity of an archaeologist who refused to infer an intelligent cause for the inscriptions on the Rosetta Stone because such an inference would constitute a scribe-of-the-gaps fallacy.) Inferences to design need not depend upon our ignorance, but instead are often justified by our knowledge of the demonstrated causal powers of nature and agency, respectively. Recent developments in the information sciences formalize this knowledge, helping us to make inferences about the causal histories of various artifacts, entities or events based upon the information-theoretic signatures they exhibit. . . . Thus knowledge (albeit provisional) of established cause-effect relationships, not ignorance, justi-

60. *Id.* at 121–22.

61. *Id.* at 126–34.

62. This is my example, not Meyer's.

fies the design inference as the best explanation for the origin of biological information in a prebiotic context.⁶³

Consequently, according to Meyer, it is virtually impossible that unguided chemistry could produce the information-rich DNA molecule, which functions like a written text or machine code. Like the communication sent by the aliens in the book and movie versions of *Contact*, and like the signals the real-life SETI's pre-set filter is programmed not to exclude, the information content of DNA exhibits specified complexity and thus cannot be accounted for by either chance or necessity. It is contingent (i.e., it is one of many possibilities; Darwinian algorithms cannot account for it), complex (i.e., it has the characteristics of a written text or machine code), and specified (i.e., it is a pattern a capable intelligence could have constructed if it intended to store, edit, and pass on information in living organisms). In the words of Darwinian Richard Dawkins, "The machine code of the genes is uncannily computer like."⁶⁴ And, as computer software mogul Bill Gates puts it, "DNA is like a computer program, but far, far more advanced than any software we've ever created."⁶⁵

3. The Fine-Tuning of The Universe For The Existence of Human Life.

In the 1960s some physicists began making the observation that our universe appears to have been fine-tuned for the existence of human life.⁶⁶ During the 1980s and 1990s a number of works have assessed this "anthropic coincidence" in differing ways.⁶⁷ According to Meyer, these scientists "discovered that the

63. Meyer, *The Explanatory Power*, *supra* note 56, at 139 (citation omitted).

64. Dawkins, *supra* note 47, at 17.

65. Bill Gates, *THE ROAD AHEAD* 228 (rev. ed. 1996).

66. Karl W. Giberson, *The Anthropic Principle*, 9 J. OF INTERDISC. STUD. 63 (1997).

67. See generally GILLES COHEN-TANNOUDJI, *UNIVERSAL CONSTANTS IN PHYSICS* (Patricia Thickstun trans., 1993); HUGH ROSS, *THE CREATOR AND THE COSMOS* (1993); REINHARD BREUER, *THE ANTHROPIC PRINCIPLE* (Harry Newman & Mark Lowery trans., 1991); HUGH ROSS, *THE FINGERPRINT OF GOD: RECENT SCIENTIFIC DISCOVERIES REVEAL THE UNMISTAKABLE IDENTITY OF THE CREATOR* (2d ed. 1991); JOHN GRIBBIN & MARTIN REES, *COSMIC COINCIDENCES* (1989); JOHN LESLIE, *UNIVERSES* (1989); JOHN BARROW & FRANK TIPLER, *THE ANTHROPIC COSMOLOGICAL PRINCIPLE* (1988); PAUL DAVIES, *SUPERFORCE* (1984); PAUL DAVIES, *THE ACCIDENTAL UNIVERSE* (1982); Walter L. Bradley, *The 'Just So' Universe: The Fine-Tuning of Constants and Conditions in the Cosmos*, in *SIGNS OF INTELLIGENCE: UNDERSTANDING INTELLIGENT DESIGN* (William A. Dembski & James M. Kushiner eds., 2001); Hugh Ross, *Big Bang Refined By Fire*, in *MERE CREATION*, *supra* note 28 [hereinafter Ross, *Big Bang Refined by Fire*]; Hugh Ross, *Astronomical Evidences*

existence of life in the universe depends upon a highly improbable but precise balance of physical factors. The constants of physics, the initial conditions of the universe, and many other of its features appear delicately balanced to allow for the possibility of life."⁶⁸ Any slight alteration in these constants would have made human life impossible. For example, there would have been no life in the universe if the rate of the universe's expansion had been faster or slower, the strength of gravitational attraction had been stronger or weaker, or Planck's constant had had a different value.⁶⁹ These, of course, are not the only characteristics of the universe that had to be in place to make life possible. In 1998 astrophysicist and design advocate Hugh Ross estimated that there are "twenty-nine characteristics of the universe that must be fine-tuned for any kind of physical life to be possible" and that our solar system has forty-five characteristics that are necessary for human life to arise in it.⁷⁰ Given the individual and collective probabilities for these characteristics to all arise by chance with precisely the correct values to make human life possible, Ross estimates that there is "[m]uch less than one chance in one hundred billion trillion trillion trillion [that there] exists . . . even one" planet on which life "would occur anywhere in the universe."⁷¹ This is why Nobel laureate in physics, Arno Penzias, writes that "astronomy leads us to a unique event, a universe which was created out of nothing, and delicately balanced to provide exactly the conditions required to support life. In the absence of an absurdly-improbable accident, the observations of modern science seem to suggest an underlying, one might say, supernatural plan."⁷²

ID advocates have applied Dembski's explanatory filter to this phenomenon.⁷³ That is, because there is a conjunction of small probabilities and independent specificity, one has warrant to infer that the emergence of human life is best explained by an intelligent designer. However, as Meyer points out, other interpretations, consistent with philosophical naturalism, have been proposed as alternatives to the ID hypothesis: "(1) the so-called

for a Personal Transcendent God, in *THE CREATION HYPOTHESIS* (J.P. Moreland ed., 1994).

68. Stephen C. Meyer, *Evidence for Design in Physics and Biology: From the Origin of the Universe to the Origin of Life*, in 9 *SCIENCE AND EVIDENCE FOR DESIGN IN THE UNIVERSE* 56-57 (Michael J. Behe et al., contribs., 2000) (note omitted).

69. *Id.* at 57.

70. Ross, *Big Bang Refined By Fire*, *supra* note 67, at 372.

71. *Id.* at 381.

72. Walter L. Bradley, *Designed or Designoid*, in *MERE CREATION*, *supra* note 28, at 40 (quoting D.L. Brock, *OUR UNIVERSE: ACCIDENT OR DESIGN?* (1992)).

73. See, e.g., Meyer, *supra* note 68, at 56-66.

weak anthropic principle, which denies that the fine tuning needs explanation; (2) explanations based on natural law; and (3) explanations based on chance [including the multiple-universes hypothesis]."⁷⁴ ID advocates have responded to these alternatives.⁷⁵

Thus, according to some design theorists, the fine-tuning of the universe for the possibility of human life exhibits the characteristics of specified complexity, and thus can be attributed to an intelligent agent. For it is contingent (i.e., it is one of many possibilities), complex (i.e., it is a highly improbable arrangement of independent variables), and specified (i.e., it is a cosmological pattern a capable intelligence could have constructed if it intended to make the universe conducive to the arising of human life).

C. Other Concerns and Arguments

Both proponents and opponents of design theory have raised non-legal concerns about ID and its use in the practice of science, some of which may be raised by teachers, school board members, school administrators, scientists, and/or legislators who are assessing whether their schools ought to permit or require the teaching of ID. Because of the detail required to address these concerns adequately, and because of the modest goal of this essay, I will briefly mention these concerns and refer the reader to works that address them. Some of these concerns include the problem of dysteleology,⁷⁶ the practical payoffs and/or fruitfulness of design,⁷⁷ whether ID will be a "science stopper,"⁷⁸ the "God of the gaps" objection,⁷⁹ design theory's invok-

74. *Id.* at 58.

75. See, e.g., *id.* at 58–66; see also DEMBSKI, *supra* note 25, at 264–68; BERND-OLAF KÜPPERS, INFORMATION AND THE ORIGIN OF LIFE 59–69 (1990); JOHN LESLIE, UNIVERSES (1989); FRANCIS CRICK, LIFE ITSELF: ITS ORIGIN AND NATURE, 89–93 (1981); RICHARD SWINBURNE, THE EXISTENCE OF GOD 133–51 (1979); Jay Wesley Richards, *Many Worlds Hypotheses: A Naturalistic Alternative to Design*, 49 PERSP. ON SCI. & CHRISTIAN BELIEF 218–27 (1997); Robert Kaita, *Design in Physics & Biology: Cosmological Principle & Cosmic Imperative?*, in MERE CREATION: SCIENCE, FAITH & INTELLIGENT DESIGN 384 (William Dembski ed., 1998); William Lane Craig, *Barrow and Tipler on the Anthropic Principle vs. Divine Design*, 39 BRIT. J. PHIL. SCI. 389 (1988); John Earman, *The SAP Also Rises: A Critical Examination of the Anthropic Principle*, 24 AM. PHIL. Q. 307, 307–16 (1987); John Leslie, *Anthropic Principle, World Ensemble, Design*, 19 AM. PHIL. Q. 141, 150 (1982).

76. See DEMBSKI, *supra* note 25, at 261–64.

77. See DEMBSKI, NO FREE LUNCH, *supra* note 20, at 311–71; RATZSCH, *supra* note 20, at 137–47; Bruce L. Gordon, *Is Intelligent Design Science?*, in SIGNS OF INTELLIGENCE: UNDERSTANDING INTELLIGENT DESIGN 193, 207–16 (William A. Dembski & James A. Kushiner eds., 2001); Moreland, *supra* note 27, at 62–64.

78. See DEMBSKI, *supra* note 25, at 150–52.

ing of unobservables,⁸⁰ its lack of appeal to natural law and mechanism,⁸¹ and the testability of design theory,⁸² all of which have been replied to by design advocates.⁸³

The four areas which we covered in presenting the case for design—specified complexity, irreducible complexity of biological systems, the information content of DNA, and the fine-tuning of the universe for life—are not the only areas in which or by which design theorists have made their case.⁸⁴ For example, some design theorists have argued that the fossil record fits better with a design hypothesis than with a Darwinian one. For Evolutionists admit that the record does not reveal gradual development from simple to more complex species,⁸⁵ as predicted by Darwin. Rather, in what is called the “Cambrian explosion,”⁸⁶ the record reveals the sudden appearance at differing times of information-rich organisms within a hierarchical diversity of species with apparently no precursors. Their body plans with their improbable arrangement of parts, including the information content of their DNA and the irreducible complexity of their biological systems and sub-systems, exhibit the characteristics of specified complexity. Hence, some design theorists

79. See *supra* note 29; see also DEMBSKI, *supra* note 25, at 238–45; RATZSCH, *supra* note 20, at 143–47; Reynolds, *supra* note 29; Moreland, *supra* note 27, at 59–60.

80. See Moreland, *supra* note 27, at 60–62.

81. See DEMBSKI, NO FREE LUNCH, *supra* note 20, at 325–33.

82. See *id.* at 355–65; Michael J. Behe, *Answering Scientific Criticisms of Intelligent Design*, in SCIENCE AND EVIDENCE FOR DESIGN IN THE UNIVERSE 133, 144–47 (Wethersfield Inst. ed., 2000).

83. Although I do not directly address all of these concerns by name in my book, FRANCIS BECKWITH, LAW, DARWINISM AND PUBLIC EDUCATION: THE ESTABLISHMENT CLAUSE AND THE CHALLENGE OF INTELLIGENT DESIGN (2003), most of them are addressed implicitly and/or in a cursory fashion in much of what I cover concerning the arguments for ID (ch. 3, section B), the nature of science (ch. 1, section B, pt. 4; ch. 3, section A), and the problems with methodological naturalism (ch. 3, section A).

84. See, e.g., DEBATING DESIGN: FROM DARWIN TO DNA, *supra* note 20; DARWINISM, DESIGN, AND PUBLIC EDUCATION *supra* note 20; CORNELIUS G. HUNTER, DARWIN'S GOD: EVOLUTION AND THE PROBLEM OF EVIL (2001); RATZSCH, *supra* note 20; MERE CREATION: SCIENCE, FAITH & INTELLIGENT DESIGN (William Dembski ed., 1998); THE CREATION HYPOTHESIS: SCIENTIFIC EVIDENCE FOR AN INTELLIGENT DESIGNER (J.P. Moreland ed., 1994).

85. See, e.g., Stephen J. Gould & Niles Eldridge, *Punctuated Equilibrium Comes of Age*, NATURE 223 (1993); Niles Eldridge & Stephen Jay Gould, *Punctuated Equilibria: An Alternative to Phyletic Gradualism*, in MODELS IN PALEOBIOLOGY 82 (Thomas J. M. Schopf ed., 1972).

86. The Cambrian explosion refers “to the geologically sudden appearance of at least twenty animal body plans 530 million years ago.” Stephen C. Meyer et al., *The Cambrian Explosion: Biology's Big Bang*, in DARWINISM, DESIGN, AND PUBLIC EDUCATION, *supra* note 20.

employ the facts of the Cambrian explosion in their arguments for ID and against both Darwinism as well as its leading naturalistic competitor, "punctuated equilibrium."⁸⁷

In sum, the ID project is significant because it challenges, with serious and sophisticated arguments, the philosophical core of evolutionary theory, which maintains that (1) all living beings only give the appearance of being designed but in reality have been engineered by the unintelligent forces of natural selection (perhaps in combination with other natural, non-agent directed processes, e.g., random change), and (2) that the entire natural universe and all the natural entities in it can be accounted for by strictly material processes without resorting to any designer, Creator, or non-material agent as an explanation for either any aspect of the universe or the universe as a whole (that is, an exhaustive materialist description of the natural universe is in principle possible).

II. TEACHING ID IN PUBLIC SCHOOLS

In order to assess the question of whether requiring or permitting the teaching of ID in public schools is constitutional, it is essential that we answer two questions: (A) What is Religion?; (B) Is ID a Religion?

A. What is Religion?

Throughout the history of our Republic courts have proposed or implied different definitions of religion, broadening their definitions as the country increased in religious diversity and the judiciary began to face new types of cases. Since the literature on "defining religion" constitutionally is vast,⁸⁸ it is not

87. See, e.g., Stephen Jay Gould, *Darwinism and the Expansion of Evolutionary Theory*, in PHILOSOPHY OF BIOLOGY (Michael Ruse ed., 1998). For a critical examination of Gould's theory, see Meyer et al., *supra* note 86; MICHAEL RUSE, THE DARWINIAN PARADIGM: ESSAYS ON ITS HISTORY, PHILOSOPHY, AND RELIGIOUS IMPLICATIONS 118-45 (1989).

88. See, e.g., MICHAEL W. MCCONNELL ET AL., RELIGION AND THE CONSTITUTION 869-905 (2002); THOMAS C. BERG, THE STATE AND RELIGION IN A NUTSHELL (1998); ARLIN M. ADAMS & CHARLES J. EMMERICH, A NATION DEDICATED TO RELIGIOUS LIBERTY: THE CONSTITUTIONAL HERITAGE OF THE RELIGION CLAUSES 90-91 (1990); H. Wayne House, *A Tale of Two Kingdoms: Can There Be Peaceful Coexistence of Religion with the Secular State?*, 13 BYU J. PUB. L. 203, 251-59 (1999); Dmitry N. Feofanov, *Defining Religion: An Immodest Proposal*, 23 HOFSTRA L. REV. 309 (1994); Steven D. Smith, *Symbols, Perceptions, and Doctrinal Illusions: Establishment Neutrality and the "No Endorsement" Test*, 86 MICH. L. REV. 266 (1987); George C. Freeman, III, *The Misguided Search for the Constitutional Definition of "Religion"*, 71 GEO. L.J. 1519 (1983); Jesse H. Choper, *Defining 'Religion' in the First Amendment*, 1982 U. ILL. L. REV. 579; Steven D. Collier, *Beyond Seeger/Welsh:*

possible to conduct a thorough study in this essay. For this reason, I will focus on a few important cases and theoretical insights that I believe will be helpful in assessing ID.

Although it is true that "the Supreme Court has been reluctant to elaborate an authoritative definition of religion, it has addressed the issue in a number of cases stretching back to the nineteenth century."⁸⁹ Religion was defined in early decisions "as an organized body of believers employing religious ceremony and having a faith in and commitment to a supernatural Supreme Being."⁹⁰ In an 1890 case, *Davis v. Beason*,⁹¹ the Supreme Court first attempted to give content to the constitutional meaning of religion: "The term 'religion' has reference to one's views of his relations to his Creator, and to the obligations they impose of reverence for his being and character, and of obedience to his will."⁹²

The modern trend in the courts toward a broader and more global view of religion began in a Second Circuit court case.⁹³ The court denied an atheist status as a conscientious objector because his refusal to serve in the military was based exclusively on political grounds. However, in writing for the court, Judge

Redefining Religion Under the Constitution, 31 EMORY L.J. 973 (1982); William W. Van Alstyne, *Constitutional Separation of Church and State: The Quest for a Coherent Position*, 57 AM. POL. SCI. REV. 865, 873-75 (1963); Eduardo Peñalver, Note, *The Concept of Religion*, 107 YALE L.J. 791 (1997); Richard O. Frame, Note, *Belief in a Nonmaterial Reality—A Proposed First Amendment Definition of Religion*, 1992 ILL. L. REV. 819; Note, *Toward a Constitutional Definition of Religion*, 91 HARV. L. REV. 1056 (1978).

89. Peñalver, *supra* note 88, at 795. For a brief overview of the areas in which the Supreme Court has addressed this issue, see ERWIN CHEMERINSKY, *CONSTITUTIONAL LAW: PRINCIPLES AND POLICIES* 972-77 (1997). Chemerinsky argues that the Court has dealt with the issue in three contexts: conscientious objector exemption, whether a court may inquire into the sincerity of one's beliefs, and whether sincere personal beliefs are protected even if they are unconnected to an established dogma or group.

90. Joel Incorvaia, *Teaching Transcendental Meditation in Public Schools: Defining Religion for Establishment Purposes*, 16 SAN DIEGO L. REV. 325, 336-37 (1979).

91. 133 U.S. 333 (1890).

92. *Id.* at 342. Incorvaia points out that:

Davis involved the criminal prosecution of a member of the Mormon religion under an Idaho statute disenfranchising persons from voting or holding elected office if they belonged to any organization practicing or advocating bigamy or polygamy. The Court upheld the statute's constitutionality against a free exercise challenge. It refused to recognize that a belief in bigamy or polygamy could be a tenet of a bona fide religious faith, saying: "To call their advocacy a tenet of religion is to offend the common sense of mankind."

Incorvaia, *supra* note 90, at 337 n.51 (quoting *Davis*, 133 U.S. at 341-42).

93. *United States v. Kauten*, 133 F.2d 703 (2d Cir. 1943).

Augustus Hand, in dictum, denied that belief in God was a necessary condition of "religious training and belief" under the Congressional statute in question.⁹⁴ That is to say, he held that conscientious objection prodded by conscience and grounded in firmly held beliefs that are not conventionally religious could nonetheless be considered "religious," even though Hand believed "[I]t is unnecessary to attempt a definition of religion; the content of the term is found in the history of the human race and is incapable of compression into a few words."⁹⁵

The courts continued to broaden their definition of religion, accepting as religious many belief-systems and practices that may not initially strike one as religious. For instance, in *Torcaso v. Watkins*⁹⁶ the Supreme Court held that it was unconstitutional for the Commonwealth of Maryland to make belief in God a requirement for becoming a notary public. The Court affirmed that a belief-system can be religious without being theistic: "[A]mong religions in this country which do not teach what would generally be considered a belief in the existence of God are Buddhism, Taoism, Ethical Culture, Secular Humanism and others."⁹⁷ In *United States v. Seeger*⁹⁸ the Court ruled that a belief is religious if it is a "sincere and meaningful belief which occupies in the life of its possessor a place parallel to that filled by" traditional belief in God.⁹⁹

In *Seeger* the Court cited as an authority the work of theologian Paul Tillich¹⁰⁰ who has argued that all human beings, including atheists, have an ultimate commitment of one sort or another, something that serves as a unifying center for their personality and consciousness. This ultimate concern is "religious."¹⁰¹ It is evident, therefore, why the Court defined religion as a sincere belief "based upon a power or being or upon a faith, to which all else is subordinate or upon which all else is ulti-

94. *Id.* at 708.

95. *Id.*

96. 367 U.S. 488 (1961).

97. *Id.* at 495 n.11 (1961).

98. 380 U.S. 163 (1965).

99. *Id.* at 176.

100. *Seeger*, 380 U.S. at 180, 187 (citing PAUL TILlich, 2 SYSTEMATIC THEOLOGY 12 (1957); PAUL TILlich, THE SHAKING OF THE FOUNDATIONS 57 (1948)).

101. D. MACKENZIE BROWN, ULTIMATE CONCERN: TILlich IN DIALOGUE 4-5 (1965). Similarly, philosopher John Dewey, who considered his own espousal of humanism "religious," defined religion in the following way: "Any activity pursued in behalf of an ideal end against obstacles and in spite of threats of personal loss because of conviction of its general and enduring value is religious in quality." JOHN DEWEY, A COMMON FAITH 27 (1934).

clear and convincing to the court that SCI/TM is a religion. In the other Ninth Circuit cases, in which the court rejected claims of Establishment, these claims were rejected not because the court did not apply PPT, but rather, *because* the court applied the test and concluded that the policy in question did not advance a religion.¹⁰⁹ Granted, it is fair to ask whether the courts' opinions in those two cases—*Pelosa II* and *Alvarado*—were well-reasoned and/or rightly decided. It is clear, however, that courts apply the same test in both Free Exercise and Establishment cases.

This is why commentators are mistaken when they claim that there are two different definitions of religion, one for the Free Exercise Clause and another for the Establishment Clause.¹¹⁰ In fact, "the Supreme Court never has accepted this position."¹¹¹ In *Everson* Justice Wiley B. Rutledge unequivocally rejected the notion of a dual definition of religion, "'Religion'" appears only once in the Amendment. But the word governs two prohibitions and governs them alike. It does not have two meanings, one narrow to forbid 'an establishment' and another, much broader, for securing 'the free exercise thereof.'"¹¹²

In order to better understand how modern courts have come to their conclusions about what constitutes a religion, let us engage in a brief thought experiment by trying to answer the philosophical question, "What is a religion?". This question has been given many answers. For instance, some have said that a religion is some sort of belief system that necessarily includes a belief in a god and/or life after death. But, as the courts have come to appreciate, one problem with this definition is that it excludes beliefs, such as Taoism and Theravada Buddhism, that

109. For example, in *Alvarado*, if the city of San Jose had installed a sculpture of Jesus of Nazareth rather than the Aztec god, Quetzalcoatl, the city might have run afoul of the Establishment Clause, for belief in Jesus does address ultimate questions, it is comprehensive in nature, and its presence is recognized by certain external and formal signs. See, e.g., *County of Allegheny v. ACLU*, 492 U.S. 573 (1989) (ruling that a nativity display on city property, not surrounded by secular symbols, is unconstitutional because it sends the message that the county promotes and supports Christianity).

110. See, for example, Laurence Tribe's comments in which he argues that "all that is 'arguably religious' should be considered religious in a free exercise analysis . . . ; anything 'arguably non-religious' should not be considered religious in applying the establishment clause." LAURENCE TRIBE, *AMERICAN CONSTITUTIONAL LAW* 828 (1st ed. 1978). Tribe, however, has since retreated from this position, arguing that having two definitions of religion "presents a number of problems, most importantly the first amendment's text." LAURENCE TRIBE, *AMERICAN CONSTITUTIONAL LAW* 1186 (2d ed. 1988).

111. CHEMERINSKY, *supra* note 89, at 973.

112. *Everson v. Bd. of Educ.*, 330 U.S. 1, 32 (1947) (Rutledge, J., dissenting).

are generally thought of as religions but do not include a belief in God or gods.¹¹³ Other religions do not have a full fledged belief in life after death, as in the cases of early Greek religion and Unitarianism,¹¹⁴ though no one doubts that they are religions. There are other belief-systems, such as Humanism, whose creeds put forth answers to most of the questions traditional religions try to answer.¹¹⁵ This is why the Supreme Court has said that forms of non-theism can be religion for both Free Exercise¹¹⁶ and Establishment purposes.¹¹⁷ Although no courts, to my knowledge, have made this point, it is worth mentioning that some philosophers have argued that belief in God may not even be a sufficient condition for a belief to be religious if "God" is employed as an explanatory postulate rather than worshiped as an object of devotion.¹¹⁸ Admittedly, in one federal district court creation/evolution case, *McLean v. Arkansas*,¹¹⁹ the judge rejects this notion,¹²⁰ but it is certainly not because he tried and failed to extend his philosophical imagination; he just did not even try.¹²¹

113. See, e.g., *Torcaso v. Watkins*, 367 U.S. 488, 495 n.11 ("Among religions in this country which do not teach what would generally be considered a belief in the existence of God are Buddhism, Taoism, Ethical Culture, Secular Humanism and others.")

114. ALAN GOMES, *UNITARIANISM/UNIVERSALISM* (1998).

115. Among these questions are the following. What is the nature of ultimate reality? What is the nature of humanity? Are there moral norms that I must follow and what are their source? How do I come to know these things (i.e., revelation, natural reason, or both)? See, e.g., CURTIS W. REESE, *HUMANIST RELIGION* (1931); CHARLES FRANCIS POTTER, *HUMANISM: A NEW RELIGION* (1930); *HUMANIST SERMONS* (Curtis W. Reese ed., 1927); CURTIS W. REESE, *HUMANISM* (1926).

116. See *supra* note 113; see also *Seeger*, 380 U.S. 176.

117. "[T]he State may not establish a 'religion of secularism' . . . thus preferring those who believe in no religion over those who do believe." *Sch. Dist. v. Schempp*, 374 U.S. 203, 225 (1963) (quoting *Zorach v. Clauson*, 343 U.S. 306, 314 (1952)).

118. For example, J.P. Moreland argues that the concept "God," for Aristotle and Isaac Newton, served the same function as "quark" and "continental plate" serve in contemporary science: an explanatory entity and not an object of worship. J.P. MORELAND, *SCALING THE SECULAR CITY* 209-11 (1987).

119. 529 F. Supp. 1255 (E.D. Ark. 1982).

120. "The argument advanced by defendants' witness, Dr. Norman Geisler, that teaching the existence of God is not religious unless the teaching seeks a commitment, is contrary to common understanding and contradicts settled case law." *McLean*, 529 F. Supp. at 1266 (citing *Stone v. Graham*, 449 U.S. 39 (1980); *Sch. Dist.*, 374 U.S. 203 (1963)).

121. Professor Geisler's account of his own testimony reveals a much more sophisticated argumentation than Judge Overton lets on. Geisler and his co-authors write:

In sum, one thing is clear about the courts and religion: they have provided us with no clear definition of religion. Nevertheless, they have provided us with some general guidelines which we can extract from the above analysis:

Conventional religions—e.g., Christianity, Judaism, Buddhism—are paradigm cases of religion.

Whether other belief systems are religious ought to be evaluated by the parallel position test (PPT): does the disputed belief function in the life of the individual in a way parallel to the way in which conventional religion functions in the life of the believer?

The parallel position test is applied in both Free Exercise and Establishment Clause cases.

If we combine these guidelines with the standard for teaching origins set down in *Edwards*, we are prepared to answer the question of whether ID is religion.

B. *Is ID a Religion?*

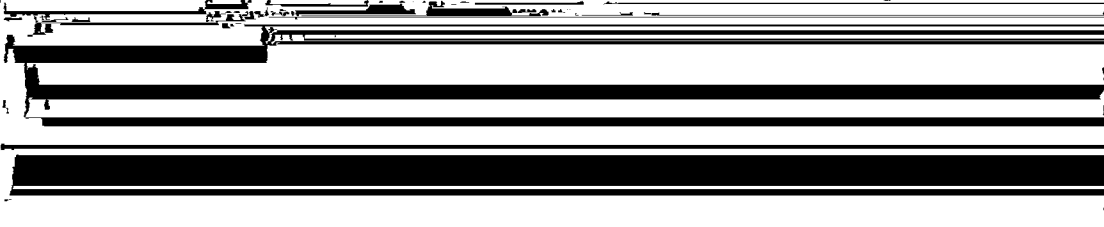
We will first apply the above guidelines to ID, then we will apply the standard put forth by the Supreme Court in *Edwards*, and conclude with one final objection to the teaching of ID in public schools.

1. Applying the General Guidelines

a. *Is ID a Conventional Religion?*

ID is not a conventional religion and thus is not a paradigm case of a religion. Rather, it is a point of view based on philosophical and empirical arguments. The purpose of ID is to provide answers to the same questions for which the evolutionary paradigm is said to provide answers. That is, design theory and evolution are two contrary perspectives about the same subject. Admittedly, if the ID arguments are plausible, they do lend support to the metaphysical claims of some conventional religions such as Christianity, Judaism, and Islam. However, as Justice

Geisler said that you cannot reject the Creator just because He is an object of religious worship for some. He illustrated this in two ways: (1) Jesus is an object of religious worship. It is historically verifiable that He lived. Do we reject His historicity just because He is an object



Powell wrote in his *Edwards* concurrence, "a decision respecting the subject matter to be taught in public schools does not violate the Establishment Clause simply because the material to be taught 'happens to coincide or harmonize with the tenets of some or all religions.'" ¹²² Dembski claims that the inference to a disembodied intelligence that can account for specified complexity in nature "is compatible with" an array of metaphysical points of view such as "pantheism, panentheism, Stoicism, Neoplatonism, deism, and theism. It is incompatible with naturalism." ¹²³ Consequently, if a point of view is religious because its plausibility lends support to a religion or a religious point of view, then we would have to conclude that evolution is as much a religion as ID, for, as we have seen, it lends support to some nontheistic and anti-religious perspectives recognized as religions by the Court. ¹²⁴ Perhaps this is why atheist and skeptic groups are the most vociferous opponents of ID, for they see ID as a possible defeater to evolution, a viewpoint whose truth is essential to the veracity of their worldview, philosophical naturalism. ¹²⁵

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, ¹²⁶ a violation of state neutrality on matters of relig-

122. *Edwards v. Aguillard*, 482 U.S. 578, 605 (1987) (Powell, J., dissenting) (quoting *Harris v. McRae*, 448 U.S. 297, 319 (1980); *McGowan v. Maryland*, 366 U.S. 420, 442 (1961)).

123. NO FREE LUNCH, *supra* note 20, at 334.

124. "[T]he State may not establish a 'religion of secularism' . . . thus 'preferring those who believe in no religion over those who do believe.'" *Sch. Dist.*, 374 U.S. at 225 (quoting *Zorach*, 343 U.S. 306, 314 (1952)). In *Torcaso v. Watkins*, the Court writes: "Among religions in this country which do not teach what would generally be considered a belief in God are Buddhism, Taoism, Ethical Culture, Secular Humanism and others." 367 U.S. 488, 495 n.11 (1961).

125. See, for example, the essays on The Secular Web, at <http://infidels.org/> (last visited Feb. 12, 2003) (on file with the Notre Dame Journal of Law, Ethics & Public Policy); Atheism Awareness, at <http://atheismawareness.home.att.net/> (last visited Feb. 12, 2003) (on file with the Notre Dame Journal of Law, Ethics & Public Policy); and the special ID issue of 8.4 SKEPTIC (2000).

126. See, e.g., *Rosenberger v. Univ. of Va.*, 515 U.S. 819 (1995) (ruling that it was a denial of students' free speech rights, as well as a risk of nurturing hostility toward religion, to prohibit the students from using student-funds for a religiously-oriented publication); *Lamb's Chapel v. Ctr. Moriches Union Free Sch. Dist.*, 508 U.S. 384 (1993) (ruling that it does not violate the establishment clause for a public school district to permit a church to show, after school hours and on school property, a religiously-oriented film on family life); *Widmar v. Vincent*, 454 U.S. 263 (1981) (finding that a religious student group's free

ion,¹²⁷ and/or the institutionalizing of a metaphysical orthodoxy,¹²⁸ for ID and evolution are *not* two different subjects (the first religion, the second science) but two different answers about the same subject.

Jay Wexler disagrees with this analysis. He asserts that "evolution in pure form addresses only the question of how living creatures change over time."¹²⁹ "It does not address the question of origins nor does it postulate the meaning of life. It deals only with proximate causes, not ultimate ones."¹³⁰ Thus, evolution and design are not two answers to the same question, but two different subjects. Ironically, in defense of these assertions Wexler cites several works including ones by Monroe Strickberger¹³¹ and Douglas J. Futuyama.¹³² But Wexler takes these citations out of context. For both authors in fact claim that evolution and design are different and incompatible answers to the same subject and that ID is mistaken. Consider first the following claims made by Strickberger in the same text cited by Wexler:

The presently accepted view . . . suggests that at a distant time in the past the whole universe was a small sphere of concentrated energy/matter. This substance then exploded in a big bang to form hydrogen first and then eventually all the galaxies and stars.¹³³

speech and association rights were violated when it was prohibited by a state university from meeting on campus).

127. According to the Court,

[the g]overnment . . . must be neutral in matters of religious theory, doctrine, and practice. It may not be hostile to any religion or to the advocacy of nonreligion; and it may not aid, foster, or promote one religion or religious theory against another or even against the militant opposite. The First Amendment mandates governmental neutrality between religion and religion, and between religion and nonreligion.

Epperson v. Arkansas, 393 U.S. 97, 103-04 (1968). In the footnote following this quote, the Court cites a series of prior cases that are well known for their call for government neutrality on matters of religion: *Torcaso*, 367 U.S. 488; *Fowler v. Rhode Island*, 345 U.S. 67 (1953); *Zorach*, 343 U.S. 67; *McCullum v. Bd. of Educ.*, 333 U.S. 203 (1948); *Everson v. Arkansas*, 330 U.S. 1 (1947).

128. The Court writes in *Epperson*: "[T]his Court said in *Keyishian v. Board of Regents* [385 U.S. 589, 603 (1967)], the First Amendment 'does not tolerate laws that cast a pall of orthodoxy over the classroom.'" 93 U.S. at 105.

129. Jay D. Wexler, Note, *Of Pandas, People, and the First Amendment: The Constitutionality of Teaching Intelligent Design in the Public Schools*, 49 STAN. L. REV. 439, 462 n.212 (1997).

130. *Id.*

131. *Id.* (citing MONROE W. STRICKBERGER, *EVOLUTION* 598 (1996)).

132. *Id.* at 469 n.268 (citing DOUGLAS J. FUTUYAMA, *SCIENCE ON TRIAL: THE CASE FOR EVOLUTION* 10-14 (1983)).

133. STRICKBERGER, *supra* note 131, at 71.

The variability on which selection depends may be random, but adaptations are not; they arise because selection chooses and perfects only what is adaptive. In this scheme a God of design and purpose is not necessary.¹³⁴

The following are claims made by Futuyama in the book cited by Wexler:

The implications [in arguing that life came from inorganic matter] are so daunting that Darwin himself was reluctant to commit his beliefs to paper. In *The Origin of Species* he limited himself to saying that "probably all organic beings which have ever lived on earth, have descended from one primordial form, into which life was first breathed"—a phrase which is certainly open to theological interpretation.¹³⁵

We will almost certainly never have direct fossil evidence that living molecular structures evolved from nonliving precursors. Such molecules surely could not have been preserved without degradation. *But a combination of geochemical evidence and laboratory experiment shows that such evolution is not only plausible but almost undeniable.*¹³⁶

By providing materialistic, mechanistic explanations, instead of miraculous ones, for the characteristics of plants and animals, Darwin brought biology out of the realm of theology and into the realm of science. For miraculous spiritual forces fall outside the province of science; *all of science* is the study of material causation.¹³⁷

[O]rder in nature is no evidence of design.¹³⁸

Wexler is mistaken, for evolution in fact provides an answer to the *very same* question ID provides an answer: What is the origin of apparent design in biological organisms and/or other aspects of the natural universe? Evolution answers the question by appealing to the forces of unguided matter, the latter to intelligent agency. Same question, different answers.

Wexler makes another point that's worth addressing, since it has been employed in a few court cases:¹³⁹ "[B]elief in evolution

134. *Id.* at 67.

135. FUTUYAMA, *supra* note 132, at 95 (quoting DARWIN, *supra* note 48, at 484).

136. *Id.* (emphasis added).

137. *Id.* at 37 (emphasis added).

138. *Id.* at 114 (emphasis added).

139. In *McLean*, for example, the court writes: "The idea that belief in a creator and acceptance of the scientific theory of evolution are mutually exclusive is a false premise and offensive to the religious views of many. . . . Dr. Francisco Ayala, a geneticist of considerable renown and a former Catholic

and belief in religion are not mutually exclusive, as evidenced by the many generations of devout religious believers who have also believed in evolution."¹⁴⁰ This is hardly persuasive, for at least two reasons.

(a) The fact that people claim that beliefs they hold are consistent with one another is not the same as providing an argument that they are in fact consistent. By appealing to people's subjective perceptions of their own beliefs rather than to the content of the beliefs themselves, Wexler commits a category mistake. For internal consistency is a property had by systems of belief that contain numerous propositional claims. Those *claims* and not those *who believe* those claims are the appropriate objects of analysis. After all, if Wexler were a criminal defense attorney confronted with an apparently friendly witness who testified in deposition that Wexler's client was not at the scene of the crime but at trial testified that the defendant was at the scene of the crime, Wexler would not get very far with the jury by claiming that the witness's inconsistent testimonies are in fact consistent because *she believes* they are consistent.

(b) If Wexler is talking about design theory and evolution, they are, as we have seen, not compatible beliefs but two answers to the *same* question. This is what one continually finds in the literature published by leading evolutionists.¹⁴¹ For if all that is meant by evolution is that biological species adapt over time to changing environments and pass on those adaptations genetically to their offspring, not even most creationists would disagree with that modest definition of evolution. Thus, what Wexler proposes as a definition of evolution is vague enough to refer to either microevolution, macroevolution, or both. But that is not what many citizens find objectionable about evolution, and it is not what is actually defended by proponents of evolutionary theory. What these citizens find objectionable, and what is actually

priest who has the equivalent of a Ph.D. in theology, pointed out that many working scientists who subscribed to the theory of evolution are devoutly religious." 529 F. Supp. 1255, 1266 n.23 (E.D. Ark. 1982). Also, in *Pelozo II*, the court asserts that evolution "has nothing to do with whether or not there is a divine Creator (who did or did not create the universe or did or did not plan evolution as part of a divine scheme)." 37 F.3d 517, 521 (9th Cir. 1994).

140. Wexler, *supra* note 129, at 462 n.212.

141. See, e.g., STRICKBERGER, *supra* note 131; ANTHONY FLEW, *DARWINIAN EVOLUTION* 1-72 (1997); JAMES RACHELS, *Created from Animals: The Moral Implications of Darwinism* 110 (1990); MICHAEL RUSE, *THE DARWINIAN PARADIGM: ESSAYS ON ITS HISTORY, PHILOSOPHY, AND RELIGIOUS IMPLICATIONS* (1989); RICHARD DAWKINS, *THE BLIND WATCHMAKER* 5-6 (1986); FUTUYAMA, *supra* note 132; GEORGE GAYLORD SIMPSON, *THE MEANING OF EVOLUTION: A STUDY OF THE HISTORY OF LIFE AND OF ITS SIGNIFICANCE FOR MAN* 279 (1967).

affirmed in the literature, is the methodological naturalism that evolution presupposes and the ontological materialism it entails. Granted, *belief* in the existence of God is not *logically* inconsistent with materialism, but the *existence* of God—if God is defined as the immaterial self-existent Creator of all that contingently exists—is *inconsistent* with materialism, the view that the natural universe is all that exists and all the entities in it can be accounted for by strictly material processes without resorting to any designer, Creator or non-material entity as an explanation for either any aspect of the natural universe or the universe as a whole. Given the fact that materialist explanations, according to the naturalists who dominate the academy, are the only ones accorded the privilege of being called “knowledge” (the others are pejoratively called “supernatural” or “miraculous” and are never permitted to count against materialist explanations), to say that belief in God’s existence is not inconsistent with evolution is to imply that God is not really an object of knowledge. For if it were, the existence of a God (and/or any other non-material reality, e.g., mind, moral properties, numbers), if one had good reasons to believe in it, would be allowed to count against methodological naturalism and ontological materialism and not provoke the ridicule and derision¹⁴² and/or the intellectual segregation suggested by the newest “friends” of God who nevertheless do not believe in him.¹⁴³ The question then is whether non-materialist claims to knowledge really can be knowledge. If they can not, then ID and evolution are consistent, since the first is a *belief* (in the popular sense of unproven opinion) and the latter is knowledge. However, if they both can be claims of

142. See, for example, Phillip Kitcher’s particularly condescending assessment of ID. Phillip Kitcher, *Born-Again Creationism*, in INTELLIGENT DESIGN CREATIONISM, *supra* note 3, at 257.

143. For example, Stephen Jay Gould suggests what he calls the NOMA principle, “non-overlapping magisterial.”

Each subject [science and religion] has a legitimate magisterium, or domain of teaching authority—and these magisteria do not overlap The net of science covers the empirical universe; what it is made of (fact) and why does it work this way (theory). The net of religion extends over questions of moral meaning and value.

Stephen Jay Gould, *Nonoverlapping Magisteria*, 106 NATURAL HISTORY 16 (Mar. 1997). But to what magisterium does NOMA belong? It seems to be a philosophical principle by which Gould assesses the nature of science and religion, and thus Gould is implying that *philosophy* is *logically prior* to science and thus the appropriate discipline by which to assess questions of the nature of science. If that’s what he is implying, then it is not clear on what grounds he could object to or not seriously consider ID arguments against methodological naturalism, for they are typically philosophical challenges to the prevailing view of the nature of science.

knowledge—that is, contrary answers to the same question—then they are inconsistent claims. Thus, Wexler can coherently claim that the existence of God (if this is what Wexler means by “belief in religion”),¹⁴⁴ a non-material reality, is consistent with the truth of evolution only if (1) he defines evolution in such a modest fashion that it is unobjectionable to even hard-line creationists or (2) he takes evolution to entail materialist metaphysics and defines belief in God in such a subjective fashion that God is not a proper object of knowledge.

b. Applying the Parallel Position Test to ID

Because ID is not a conventional religion, could someone challenge the teaching of it in public schools on establishment grounds¹⁴⁵ and legitimately argue that it is a “religion” on the basis of the parallel position test (PPT)? Does ID function in the life of its proponents in a way parallel to the way in which conventional religion functions in the life of the believer? In order to assess whether a purported belief is constitutionally a religion, the Ninth Circuit developed a tripartite application of PPT, which it extracted from prior opinions in the Third Circuit:¹⁴⁶

First, a religion addresses fundamental and ultimate questions having to do with deep and imponderable matters. Second, a religion is comprehensive in nature; it consists of a belief-system as opposed to an isolated teaching. Third, a religion often can be recognized by the presence of certain formal and external signs.¹⁴⁷

(i) ID does not “address fundamental and ultimate questions having to do with deep and imponderable matters.”¹⁴⁸ Rather, it addresses the same question raised by Darwinists: What

144. “Belief in religion” is so vague it may include everything from Unitarian/Universalism (some branches of which are indistinguishable from full-blooded atheistic materialism) to Animism. Since Wexler does not define precisely what he means by “belief in religion” I will take it to mean something that includes belief in the existence of an immaterial ultimate reality, God, which may be a pantheistic, monotheistic, Platonic, Aristotelean, or panentheistic God, a being whose existence would be a defeater to materialism as a worldview.

145. See, e.g., Wexler, *supra* note 129.

146. See *Peloza v. Capistrano Unified Sch. Dist.*, 37 F.3d 517, 520 (9th Cir. 1994); *Africa v. Pennsylvania*, 662 F.2d 1025, 1031 (3d Cir. 1981) (prisoner denied Free Exercise benefits on the grounds that the group affiliation to which he appealed, MOVE, was not a religion); *Malnak v. Yogi*, 592 F.2d 197, 200–15 (3d Cir. 1979) (Adams, J., concurring).

147. *Alvarado v. City of San Jose*, 94 F.3d 1223, 1229 (9th Cir. 1996) (quoting *Africa*, 662 F.2d at 1032).

148. *Id.*

is the origin of apparent design in biological organisms and/or other aspects of the natural universe? Of course, as I pointed out above, design theory lends plausibility and support to theism, but that is not enough for it to meet this test. For evolution lends plausibility and support to some nontheisms and thus addresses the same questions as ID but provides different answers. In other words, if one claims that ID meets this test, then one must claim that evolution does as well. In addition, to cite Justice Powell yet again, a public school curriculum "does not violate the Establishment Clause simply because the material to be taught 'happens to coincide or harmonize with the tenets of some or all religions.'"¹⁴⁹ Federal court interference with the policy decisions of local and state educational authorities is warranted "only when the purpose for their decisions is *clearly* religious."¹⁵⁰

(ii) ID is not "comprehensive in nature" and it is not a "belief-system."¹⁵¹ Rather it is an example of "an isolated teaching,"¹⁵² something that is consistent with certain religious belief-systems but is itself not a "religion," for one can logically hold to ID without accepting the comprehensive belief system of any conventional religion. In this sense ID is similar to a moral claim. For example, believing that human beings have intrinsic dignity by nature (a moral claim) is a rationally defensible belief that is consistent with many religious belief-systems even though one may logically hold to the position while denying the truth of every religious belief-system.

Moreover, design theorists do not defend their position by appealing to esoteric knowledge, special revelation, or religious authority. They make philosophical and scientific arguments whose merits should be assessed by their soundness rather than because their conclusions are inconsistent with philosophical naturalism.

(iii) ID does not have the "presence of certain formal and external signs" such as "formal services, ceremonial functions, the existence of clergy, structure and organization, efforts at propagation, observance of holidays and other similar manifestations associated with traditional religions."¹⁵³ Although ID pro-

149. *Edwards v. Aguillard*, 482 U.S. 578, 605 (1987) (Powell, J., dissenting) (quoting *Harris v. McRae*, 448 U.S. 297, 319 (1980); *McGowan v. Maryland*, 366 U.S. 420, 442 (1961)).

150. *Edwards*, 482 U.S. at 605 (Powell, J., dissenting) (emphasis added).

151. *Alvarado*, 94 F.3d at 1229 (quoting *Africa*, 662 F.2d at 1032).

152. *Id.* (quoting *Africa*, 662 F.2d at 1032).

153. *Id.* (quoting *Africa* 662 F.2d at 1032, 1035-36) (internal quotations omitted).

ponents "have formed organizations and institutes, . . . these resemble other academic or professional associations rather than churches or religious institutions."¹⁵⁴

Thus, according to the general guidelines laid down by the courts, ID is not a religion, and thus to teach it in public schools would not violate the Establishment Clause.

2. The Edwards Standard

Suppose someone agrees that according to the above guidelines ID is not a religion, but contends that those guidelines are not the appropriate standard by which to evaluate ID. Rather, the proper test is found in *Edwards*, the case that set the standard by which public school curricula on origins should be evaluated.

The statute assessed in *Edwards* was struck down for four reasons: (1) its historical continuity with *Scopes*, (2) its textual connection to the Genesis-inspired statutes struck down in *Epperson* and *McLean*, (3) the religious motivation of its supporters, and (4) its illegitimate means (i.e., advancing religion, limiting what teachers may teach) to achieve appropriate state ends (i.e., academic freedom), though the Court concluded that the statute's purported purpose (or end) was "a sham,"¹⁵⁵ and thus the statute had no real secular purpose. Thus, the Court concluded that the Louisiana statute advanced religion and thus violated the first prong of the *Lemon* test.¹⁵⁶

154. DeWolf et al., *supra* note 21, at 86-87.

155. *Edwards*, 482 U.S. at 587.

156. In *Lemon v. Kurtzman*, the Supreme Court provided a three-part test which is used by many courts to determine whether or not a given public policy or law runs afoul of the establishment clause. 403 U.S. 602 (1971). The Court believed that this test is based on the history of the Court's decisions on the matter of Church and State. Thus, if a challenged policy or law passes this test, it is constitutional. However, it need only fail one prong of the test in order to be declared unconstitutional:

Every analysis in this area [church/state cases] must begin with consideration of the cumulative criteria developed by the Court over many years. Three such tests may be gleaned from our cases. First, the statute must have a secular legislative purpose; second, its principle or primary effect must be one that neither advances nor inhibits religion, finally, the statute must not foster "an excessive government entanglement with religion."

Id. at 612-13 (citations omitted).

It should be noted that some scholars as well as some post-*Lemon* opinions by Supreme Court Justices have criticized and questioned certain aspects of the *Lemon* Test. See, e.g., *Edwards*, 482 U.S. at 636-37 (Scalia, J., dissenting) (criticizing the "purpose" prong of the *Lemon* test); *Wallace v. Jaffree*, 472 U.S. 38, 112 (1985) (Rehnquist, J., dissenting) (arguing that the *Lemon* test is "a constitutional theory [that] has no basis in the history of the amendment it seeks to

a. *Reasons 1 and 2*

Concerning reasons (1) and (2), ID is neither historically connected to *Scopes* nor is its literature replete, as is creationist literature, with "science" and recommended curricula that are transparently derived directly from the Book of Genesis. ID's intellectual pedigree is of a different order than the creation-science the Court repudiated in *Edwards*. Although most design theorists are theists, there is a wide range of opinion within the ID camp.¹⁵⁷

Wexler argues that because ID has *some* historical connection to the creation/evolution controversy, it would not pass the *Edwards* standard.¹⁵⁸ But that seems patently unreasonable. It would make the genetic fallacy¹⁵⁹ a principle of constitutional

interpret, it is difficult to apply, and yields unprincipled results"); *Lynch v. Donnelly*, 465 U.S. 668, 687–94 (1984) (O'Connor, J., concurring) (suggesting an "endorsement test."); *Marsh v. Chambers*, 463 U.S. 783 (1983) (upholding "the Nebraska Legislature's practice of opening each legislative session with a prayer by a chaplain paid by the State," but not applying the *Lemon* test); *Mueller v. Allen*, 463 U.S. 388 (1983) (upholding Minnesota's policy that allowed taxpayers to deduct from gross income actual expenses incurred for textbooks, tuition, and transportation for dependents attending elementary and secondary schools whether public or nonpublic, maintaining that *Lemon* is settled law but is "no more than a signpost"); *Meek v. Pittenger*, 421 U.S. 349, 374 (1975) (Brennan, J., dissenting) (finding a fourth prong to the *Lemon* Test: "four years ago, the Court, albeit without express recognition of the fact, added a significant *fourth factor* to the test: 'A broader base of entanglement of yet a different character is presented by the divisive political potential of these state programs.'"); STEVEN V. MONSMA, *POSITIVE NEUTRALITY: LETTING RELIGIOUS FREEDOM RING* (1993); ROBERT CORD, *THE SEPARATION OF CHURCH AND STATE: HISTORICAL FACT AND CURRENT FICTION* 169–211 (1982); Carl H. Esbeck, *Equal Treatment: Its Constitutional Status, in EQUAL TREATMENT IN A PLURALISTIC SOCIETY* (Stephen V. Monsma & J. Christopher Soper eds., 1998); Michael W. McConnell, *Should Congress Pass Legislation Restoring the Broader Interpretation of Free Exercise of Religion?*, 15 HARV. J.L. & PUB. POL'Y 181 (1992); Michael W. McConnell, *Accommodation of Religion: An Update and a Response to the Critics*, 60 GEO. WASH. L. REV. 685 (1992).

157. H. Wayne House, for instance, points out that "various contributors to the seminal volume, *Mere Creation*, represent diverse theological beliefs, e.g., John Mark Reynolds (Eastern Orthodox), Jonathan Wells (the Unification Church), David Berlinski (Judaism), and Michael Behe (Roman Catholic)." H. Wayne House, *Darwinism and the Law: Can Non-Naturalistic Scientific Theories Survive Constitutional Challenge?*, 13 REGENT U. L. REV. 355, 403 (2000–2001).

158. Wexler, *supra* note 129, at 465.

159. The genetic fallacy occurs when the origin of a viewpoint or argument, rather than its merits, is employed to dismiss it out of hand. Although the origin of an idea may play a part in assessing its merits, the genetic fallacy is committed when the idea is dismissed based on its origin even though the origin of the idea is not a necessary condition for the soundness of the arguments for it.

jurisprudence. It is hard to imagine why anyone would find that acceptable. After all, if an historical connection of any sort, no matter how distant or loose, is sufficient to prohibit the teaching

prohibited from public school classrooms since they have their historical origin in the religiously-oriented practices of astrology and alchemy.

The Court's historical problem with the Creationism curriculum required in the statute struck down in *Edwards* was its transparent connection to the Book of Genesis and the contents of previously repudiated statutes in *Epperson* and *McLean*. The

(G) MN and OM have been challenged in other significant ways including their apparent inability to provide the epistemological and metaphysical resources to account for immaterial entities that it seems rational to believe exist, e.g., human beings are unified substances, the universe has a first cause, moral properties, and rationality itself.

(H) Therefore, given (F) and (G), we have good reason to reject both the epistemological presupposition of evolution (methodological naturalism) as well as its entailment (ontological materialism).

No doubt ID has implications for the veracity of evolution: if its arguments work, then ID is a defeater to evolution. But such arguments propose conclusions whose premises do not contain the Book of Genesis and its tenets as explicit or implicit propositions. These premises and their propositions, unlike the ones of Creationism, are not derived from, nor are they grounded in, any particular religion's interpretation of its special revelation. They are, rather, the result of empirical facts (e.g., the information content of DNA, the structure of the cell), well-grounded conceptual notions (e.g., SC, IC), and critical reflection. These subsequently serve as the basis from which one may infer that an intelligent agent is likely responsible for the existence of certain apparently natural phenomena. Granted, the conclusions inferred by these premises may be consistent with, and lend support to, a tenet or tenets of a particular belief system. But that, in itself, would not make ID *ipso facto* Creationism or even constitutionally suspect. After all, the Big Bang theory, the most widely accepted theory of the universe's origin, is more consistent with, and lends support to, theism in comparison to other metaphysical rivals such as atheism.¹⁶¹ Yet, no one is suggesting that the Big Bang theory ought not to be taught in public schools because it has metaphysical implications friendly to theism and may serve as an impetus for some students to abandon naturalism as a worldview.¹⁶² Therefore, if ID is to be declared unconstitutional, it cannot be on the grounds that it is the Creationism repudiated by the courts.¹⁶³

161. See, e.g., CRAIG & SMITH, *supra* note 20.

162. See David K. DeWolf, *Academic Freedom After Edwards*, 13 REGENT U. L. REV. 447, 480-81 (2000-2001).

163. In a 1997 case a district court committed an unfortunate gaffe that seems to some to define ID as synonymous with Creationism (sometimes called "Creation Science"): "Creation Science, as the term shall be used herein, is the theory that the universe, including all forms of life, was created literally in the manner described in the Bible by a higher Being, or, as alternately described, the theory of intelligent design or creation by a Divine Creator." Freiler v.

b. *Reasons 3 and 4*

If an ID statute is to pass constitutional muster, it will be judicially assessed in light of reasons (3) and (4), as well as reasons (1) and (2), of the *Edwards* standard. Because, as of the completion of this essay, no ID law has been challenged in court, (3) and (4) will be analyzed with a bit of speculation and critique. We will cover two general areas: (i) secular reasons, and (ii) religious motivation and the statute's means-end relationship.

Tangipahoa Parish Bd. of Ed., 975 F. Supp. 819, 821 (E.D. La. 1997). Although this statement lacks clarity and rigor, it nevertheless has been employed by a number of ID opponents to dismiss ID as nothing more than "Creation Science." For example, the National Center for Science Foundation (NCSF) writes that Freiler "is also noteworthy for recognizing that curriculum proposals for 'intelligent design' are equivalent to proposals for teaching creation science." It went on to say that "the Fifth Circuit Court of Appeals affirmed the ruling." Niles Eldrige, *Seven Significant Court Decisions on the Issue of Evolution and the Failure of Creationism*, in *THE TRIUMPH OF EVOLUTION AND THE FAILURE OF CREATIONISM* 182 (2000). There are several problems with this argument. First, although it is true that the Fifth Circuit affirmed the ruling of the district court, it does not follow that it affirmed the appropriateness of the lower court's use of the term "Intelligent Design," since Creation Science has a definitive meaning in the federal court cases that addressed the teaching of it in public schools. Second, at best the district court is saying that Creation Science is *sometimes* called Intelligent Design. It does not follow from this, however, that every claim of affirming Intelligent Design is *ipso facto* a claim of affirming Creation Science. For example, what if the state of Louisiana, by statute, were to rename Evolution "Intelligent Design" and require all its teachers and textbooks to do likewise? Would it now mean that Evolution (at least in Louisiana) is the same as Creation Science and that "Intelligent Design" (alias "Evolution") must be banned from classrooms, since, after all, the district court said that ID is the same as Creation Science (at least according to the NCSE)? This is, of course, silly. For one must examine the content of the view defended, e.g., Michael Behe's argument for irreducible complexity, rather than dismissing it by semantic fiat not held in appeal. Because we already know the meaning of Creation Science from prior federal court cases, therefore, when the district court says Creation Science may "be alternately described [as] the theory of intelligent design," Freiler, 975 F. Supp. at 821, it is simply informing us of what should be obvious to any rational mind committed to legal principle: renaming curriculum that has already been repudiated in prior court cases does not now make the unconstitutional curriculum constitutional (as if renaming slavery "employment" bypasses the requirements of the 13th Amendment). But since this truth is based on legal *principle*, the inverse follows inexorably: renaming Intelligent Design "Creation Science," as the NCSE has tried to do in its misuse of a quote

i. *Secular Reasons*

Any government body that seeks to require or permit ID to be taught in its public schools would have to justify it by appealing to secular reasons. Although having a religious motivation or reason would not invalidate the statute, the absence of a secular reason would.¹⁶⁴ The following are four possible secular reasons such a body could employ.

(A) *The Endorsement Test*

It could offer an endorsement test justification of the statute. In *Lynch v. Donnelly*, Justice O'Connor proposed an "endorsement test" as an alternative to the *Lemon* Test, and some recent opinions seem to have either explicitly or implicitly embraced it as well.¹⁶⁵ According to this test, if a government action creates a *perception* that it is either endorsing or disfavoring

164. The *Edwards* Court rejected the Louisiana Act, not because it had a religious purpose, but because it was entirely devoid of a secular one. In *Edwards*, Justice Powell concedes that even if the Louisiana Balanced-Treatment Act has a religious purpose, that "alone is not enough to invalidate" it. "The religious purpose must predominate." *Edwards v. Aguillard*, 482 U.S. 578, 599 (1987) (Powell, J., concurring). The Court in *Lemon* asserts that "the statute must have a secular legislative purpose," *Lemon v. Kurtzman*, 403 U.S. 602, 612 (1971) (emphasis added) (implying that it may have a religious purpose as well).

165. 465 U.S. 668 (1984); see, e.g., *Zelman v. Simmons-Harris*, 536 U.S. 639 (2002) (a school voucher program in Cleveland that gives vouchers directly to students, who may then choose to use the funds to attend a private school including a religious one, does not offend the establishment clause); *Mitchell v. Helms*, 530 U.S. 793 (2000) (direct funding to private schools including religious schools does not violate establishment clause; since the distribution is even-handed and the use of the money to indoctrinate in religious schools cannot reasonably be attributed to government and there is no evidence that funds given to religious schools were used to indoctrinate); *Rosenberger v. Rector & Visitors of Univ. of Va.*, 515 U.S. 819 (1995) (it was a denial of students' free speech rights, as well as a risk of nurturing hostility toward religion to prohibit the students from using student funds for a religiously-oriented publication); *Capitol Square Rev. & Advisory Bd. v. Pinette*, 515 U.S. 753 (1995) (it was content-based discrimination for the government to prohibit a controversial organization from sponsoring a religious display in a public park); *Zobrest v. Catalina*, 509 U.S. 1 (1993) (a school district may not refuse to supply a sign-language interpreter to a student at a religious high school when such government benefits are neutrally dispensed to students without regard to the public-nonpublic or sectarian-nonsectarian nature of the school); *Lamb's Chapel v. Ctr. Moriches Union Free Sch. Dist.*, 508 U.S. 384 (1993) (it does not violate the establishment clause for a public school district to permit a church to show, after school hours and on school property, a religiously-oriented film on family life); *Widmar v. Vincent*, 454 U.S. 263 (1981) (a religious student group's free speech and association rights were violated when it was prohibited by a state university from meeting on campus).

a religion, the action is unconstitutional. The court said:

[the] government . . . must be neutral in matters of religious theory, doctrine, and practice. It may not be hostile to any religion or to the advocacy of nonreligion; and it may not aid, foster, or promote one religion or religious theory against another or even against the militant opposite. The First Amendment mandates governmental neutrality between religion and religion, and between religion and nonreligion.¹⁶⁹

Thus, an ID statute could be justified on the basis of neutrality by arguing that to teach only one theory of origins (evolution)—that presupposes a controversial epistemology (methodological naturalism), entails a controversial metaphysics (ontological materialism), and is antithetical to traditional religious belief—the state is in fact advocating, aiding, fostering, and promoting irreligion, which it is constitutionally forbidden from doing. The state is not *merely* teaching what some religious people find antagonistic or offensive to their faith, which would not be unconstitutional.¹⁷⁰ Rather, it is promoting a point of view—a metaphysical perspective—that “occupies in the life of its possessor a place parallel to that filled by” traditional belief in God.¹⁷¹

Perhaps this is why Justice Black, in his *Epperson* concurrence, raised the question: “If the theory [of evolution] is considered anti-religious, as the Court indicates, how can the State be bound by the Federal Constitution to permit its teachers to advocate such an ‘anti-religious’ doctrine to schoolchildren?”¹⁷² According to Justice Black, “this issue presents problems under the Establishment Clause far more troublesome than are discussed in the Court’s opinion,”¹⁷³ for “[t]he very cases cited by the Court as supporting its conclusion that the State must be neutral” assert that the State should not favor “one religious or anti-religious view over another.”¹⁷⁴ As Michael McConnell points out:

In the marketplace of ideas, secular viewpoints and ideologies are in competition with religious viewpoints and ideol-

169. *Epperson v. Arkansas*, 393 U.S. 97, 103–04 (1968).

170. The Court has argued that the Constitution “forbids alike the preference of a religious doctrine or the prohibition of a theory which is deemed antagonistic to a particular dogma.” *Id.* at 106–07. The Court has also said that “the state has no legitimate interest in protecting any or all religions from views distasteful to them” *Id.* (quoting *John Burstyn, Inc v. Wilson*, 343 U.S. 495, 505 (1952)).

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

172. *Epperson*, 393 U.S. at 113 (Black, J., concurring).

173. *Id.*

174. *Id.*

ogies. It is no more neutral to favor the secular over the religious than it is to favor the religious over the secular. It is time for a reorientation of constitutional law: *away* from the false neutrality of the secular state, *toward* a genuine equality of rights.¹⁷⁵

According to the Court in *Planned Parenthood v. Casey*, "[a]t the heart of liberty is the right to define one's own concept of existence, of meaning, of the universe, and of the mystery of human life. Beliefs about these matters could not define the attributes of personhood were they formed under compulsion of the State."¹⁷⁶ Thus, when government schools, whose attendance is generally compulsory, delve into matters epistemological and metaphysical—matters that touch on the scope of human knowledge, the ultimate nature of things, and who and what we are—and imply or affirm an "orthodox" position on such matters,¹⁷⁷ they define the attributes of personhood in a particular sectarian way, and consequently, violate what the Court maintains is a fundamental liberty.

In this regard, one may employ Justice Kennedy's coercion test, which he applied in *Lee v. Weisman*, a case in which the Court ruled unconstitutional a public middle school's invitation to a local clergyman to perform an invocation and benediction at its graduation ceremony.¹⁷⁸ According to Justice Kennedy, "[t]he Establishment Clause was inspired by the lesson that in the hands of government what might begin as a tolerant expression of religious views may end in a policy to indoctrinate and coerce. Prayer exercises in elementary and secondary schools carry a particular risk of indirect coercion."¹⁷⁹ Even though a student who objects to such prayers is technically free to opt out of her graduation ceremony, according to Justice Kennedy, it does not mean

175. Michael W. McConnell, *Equal Treatment and Religious Discrimination*, in *EQUAL TREATMENT IN A PLURALISTIC SOCIETY*, *supra* note 156, at 33.

176. *Planned Parenthood v. Casey*, 505 U.S. 833, 851 (1992).

177. The Court in *Keyishian v. Bd. of Regents* writes, "[T]he First Amendment does not tolerate laws that cast a pall of orthodoxy over the classroom . . ." 385 U.S. 589, 603 (1967). The Court asserts in *School District v. Schempp*: The wholesome "neutrality" of which this Court's cases speak thus stems from a recognition of the teachings of history that powerful sects or groups might bring about a fusion of governmental and religious functions or a concert of dependency of one upon the other to the end that official support of the State or Federal Government would be placed behind the tenets of one or of all orthodoxies.

374 U.S. 203, 222 (1963).

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

179. *Id.* at 578; *see also Sch. Dist.*, 374 U.S. 203; *Engel v. Vitale*, 370 U.S. 421 (1962).

that she is not being coerced to attend, for the student's absence from her graduation "would require forfeiture of those tangible benefits which have motivated the student through youth and all her high school years."¹⁸⁰ Thus, "a school rule which excuses attendance is beside the point."¹⁸¹

The coercion test is important to the legal case for permitting or requiring the teaching of ID in public schools, for it rests on the same principle from which Justice Kennedy reasoned in *Lee*: the state may not use the coercive power of government to enforce a particular religious or antireligious orthodoxy. This principle applies to the curricular case for ID for the following two reasons (combined, not separate).

First, school attendance—in virtually every jurisdiction—is mandatory, an act of government coercion. Although parents may choose to send their children to private secular or religious schools, they may only do so if they are financially able, for public schools do not charge tuition to their students. Thus, public school attendance—though not formally or directly coercive—is practically and indirectly coercive, for families are financially burdened if they choose to send their children to private secular or religious schools. Therefore, to paraphrase Justice Kennedy, absence from the public school would require a student's family to forfeit those tangible resources that could go to the purchase of other important familial benefits that the student will not have the opportunity to enjoy (e.g., a larger home, better computers, better foods, better vacations, better health care).

Second, if a public school curriculum teaches students one point of view on origins—evolution—"it may appear to the nonbeliever or dissenter," i.e., the believer in ID, "to be an attempt to employ the machinery of the State to enforce a religious [or antireligious] orthodoxy."¹⁸² Thus, both of the components the Court found troubling in *Lee* are present here: mandatory attendance (i.e., coercion) and instruction in an orthodoxy.

Although *Lee* dealt with a graduation prayer and not a curriculum, its guiding principle is clearly applicable to the case for teaching ID in public schools: the state may not use the coercive power of government to enforce a particular religious or antireligious orthodoxy. Therefore, permitting or requiring public schools to teach the alternative to evolution—Intelligent

180. *Lee*, 505 U.S. at 595.

181. *Id.*

182. *Id.* at 592.

Design—would be a way to ensure that the Establishment Clause is not violated via the coercion test.

One objection to this analysis is that the coercion test was applied by the Court to a formal religious exercise, e.g., a benediction or invocation prayer, and thus, may not apply to a curriculum.¹⁸³ This objection, however, misses the point of principle that Justice Kennedy was trying to convey. His point, it seems to me, does not depend on the particular type of activity for which government coercion is employed, but rather, whether that activity is a case in which the state is employing its coercive powers to enforce a particular orthodoxy. After all, if a public school, as part of a new relaxation and meditation curriculum, were teaching its students, who were forbidden from opting out of the class, how to pray to the Christian God—though never actually requiring its teachers to lead their students in prayer—it is difficult to see why this required curriculum would not violate the coercion test. Admittedly, the Court may not want to extend the coercion test in this direction, for it has other tests at its disposal that have worked just as well when applied to school curriculum. However, it seems to me that applying the coercion test to public school curricula is defensible and its case persuasive, especially given the principle on which the test is based.

Public education is special and parents in a liberal democracy have certain expectations of religious neutrality and fairness when they send their children to public schools. Parents, according to the Court, have a pre-political right to educate their children, reflected in the First Amendment and the Fourteenth Amendment's due process clause.¹⁸⁴

183. According to this interpretation, an activity sponsored by a public school violates the First Amendment when "(1) the government directs (2) a formal religious exercise (3) in such a way as to oblige the participation of the objectors." *Jones v. Clear Creek Ind. Sch. Dist.*, 277 F.2d 963, 970 (5th Cir. 1992).

184. See, e.g., *Planned Parenthood v. Casey*, 505 U.S. 833, 851 (1992). Our law affords constitutional protection to personal decisions relating to marriage, procreation, contraception, family relationships, child rearing, and education . . . These matters, involving the most intimate and personal choices a person may make in a lifetime, choices central to personal dignity and autonomy, are central to the liberty protected by the Fourteenth Amendment. *Id.*; *Griswold v. Connecticut*, 381 U.S. 479, 482 (1965) (the right to educate one's children is not literally in the Bill of Rights, but rather, is a fundamental pre-political liberty protected by the First Amendment); *Pierce v. Soc'y of the Sisters*, 268 U.S. 510, 535 (1925) ("The child is not the mere creature of the State; those who nurture him and direct his destiny have the right, coupled with the high duty, to recognize and prepare him for additional obligations."); *Meyer v. Nebraska*, 262 U.S. 390, 400 (1923) (the Fourteenth Amendment's

(C) *Exposing Students to New and Important Scholarship*

A state could appeal to the importance of exposing students to reputable scholarship that critiques the methodological naturalism behind evolution and the ontological materialism entailed by it. The *Edwards* Court maintains that its holding does "not imply that the legislature could never require that scientific critiques of prevailing scientific theories be taught."¹⁸⁵ The Court asserts that "teaching a variety of scientific theories about the origins of humankind to schoolchildren might be validly done with the clear secular intent of enhancing the effectiveness of science instruction."¹⁸⁶ In addition, the Court points out, with apparent approval, that the unconstitutional Balanced-Treatment Act was unnecessary because the state of Louisiana already did not prohibit teachers from introducing students to alternative points of view.¹⁸⁷

After all, as noted above, ID proponents have had their works published by prestigious presses and in academic journals, have aired their views among critics in the corridors of major universities and other institutions, and have been recognized by leading periodicals, both academic and non-academic. Moreover, there are published peer-reviewed works (1986–2001) by non-ID scientists that raise questions about, and pose challenges to, aspects of evolution in three areas of study from which some ID proponents begin their case:¹⁸⁸ questions of

due process clause guarantees parents' right to perform their duty to educate their children: "Corresponding to the right of control, it is the natural duty of the parent to give his children education suitable to their station in life . . .").

185. *Edwards v. Aguillard*, 482 U.S. 578, 593 (1987).

186. *Id.* at 594.

187. According to the Court, Louisiana's Balanced-Treatment Act did not give teachers any more academic freedom than what they already had in supplanting "the present science curriculum with the presentation of theories, besides evolution, about the origin of life." *Id.* at 587. Because "[t]he Act provides Louisiana school teachers with no new authority[,] . . . the stated purpose is not furthered by it." *Id.* The Court of Appeals made a similar observation. See *Aguillard v. Edwards*, 765 F.2d 1251, 1257 (5th Cir. 1985) (*Aguillard III*).

188. The citations in the following three notes come from a list of publications and their summaries submitted on March 11, 2002 by Stephen C. Meyer and Jonathan Wells to the Ohio Board of Education in support of the modifications of its science curriculum. DISCOVERY INST., BIBLIOGRAPHY OF SUPPLEMENTARY RESOURCES FOR OHIO SCIENCE INSTRUCTION (2002), available at <http://www.discovery.org/viewDB/index.php3?/program=crSC%20Responses&command=view&id=1127> (on file with the Notre Dame Journal of Law, Ethics & Public Policy). Meyer and Wells are careful to say that "the publications are not presented either as support for the theory of intelligent design, or as indicating that the authors cited doubt evolution." *Id.*

pattern,¹⁸⁹ questions of process,¹⁹⁰ and questions about the

189. According to the Discovery Institute staff, pattern "concerns the large-scale geometry of biological history: how are organisms related to each other, and how do we know that?" DISCOVERY INST., *supra* note 188; see Peter J. Lockhart & Sydney A. Cameron, *Trees for Bees*, 16 TRENDS ECOLOGY & EVOLUTION 84 (2001); Kenneth Weiss, *We Hold These Truths to Be Self-Evident*, 10 EVOLUTIONARY ANTHROPOLOGY 199 (2001); W. Ford Doolittle, *The Nature of the Universal Ancestor and the Evolution of the Proteome*, 10 CURRENT OPINION IN STRUCTURAL BIOLOGY 355 (2000); W. Ford Doolittle, *Uprooting the Tree of Life*, SCI. AM., Feb. 2000, at 90; Trisha Gura, *Bones, Molecules . . . or Both?* 406 NATURE 230 (2000); Simon Conway Morris, *Evolution: Bringing Molecules into the Fold*, 100 CELL (2000); W. Ford Doolittle, *Phylogenetic Classification and the Universal Tree*, 284 SCIENCE 2124 (1999); Michael S.Y. Lee, *Molecular Clock Calibrations and Metazoan Divergence Dates*, 49 J. OF MOLECULAR EVOLUTION 385 (1999); Michael S.Y. Lee, *Molecular Phylogenies Become Functional*, 14 TRENDS IN ECOLOGY & EVOLUTION 177 (1999); Detlef F. Leipe et al., *Did DNA Replication Evolve Twice Independently?*, 27 NUCLEIC ACIDS RES. 3389 (1999); Ying Cao et al., *Conflict Among Individual Mitochondrial Proteins in Resolving the Phylogeny of Eutherian Orders*, 47 J. OF MOLECULAR EVOLUTION 307 (1998); David P. Mindell et al., *Multiple Independent Origins of Mitochondrial Gene Order in Birds*, 95 PROC. OF THE NAT'L ACAD. OF SCI. 10693 (1998); Arcady R. Mushegian et al., *Large-Scale Taxonomic Profiling of Eukaryotic Model Organisms: A Comparison of Orthologous Proteins Encoded by the Human, Fly, Nematode, and Yeast Genomes*, 8 GENOME RES. 590 (1998); Gavin P. Naylor & Wesley M. Brown, *Amphioxus Mitochondrial DNA, Chordate Phylogeny, and the Limits of Inference Based on Comparisons of Sequences*, 47 SYSTEMATIC BIOLOGY 61 (1998); Kensal E. van Holde, *Respiratory Proteins of Invertebrates: Structure, Function and Evolution*, 100 ZOOLOGY: ANALYSIS OF COMPLEX SYSTEMS 287 (1998); Carl Woese, *The Universal Ancestor*, 95 PROC. OF THE NAT'L ACAD. OF SCI. 6854 (1998); Michael K. Richardson et al., *There Is No Highly Conserved Embryonic State in the Vertebrates: Implications for Current Theories of Evolution and Development*, 196 ANATOMY & EMBRYOLOGY 91 (1997); W. Ford Doolittle, *At the Core of the Archaea*, 93 PROC. OF THE NAT'L ACAD. OF SCI. 8797 (1996); W. Ford Doolittle, *Tempo, Mode, the Progenote, and the Universal Root*, in TEMPO AND MODE IN EVOLUTION 3 (W. Fitch & F. Ayala eds., 1995); Douglas H. Erwin, *Early Introduction of Major Morphological Innovations*, ACTA PALAEONTOLOGICA POLONICA 38 (1994); Colin Patterson et al., *Congruence Between Molecular and Morphological Phylogenies*, 24 ANN. REV. OF ECOLOGY & SYSTEMATICS 153 (1993); Paul Morris & Emily Cobabe, *Cuvier Meets Watson and Crick; the Utility of Molecules as Classical Homologies*, 94 BIOLOGICAL J. OF THE LINNEAN SOC'Y 307 (1991).

190. Process "concerns the mechanisms of evolution, and open problems in that area." DISCOVERY INST., *supra* note 188; see Scott F. Gilbert et al., *Morphogenesis of the Turtle Shell: The Development of a Novel Structure in Tetrapod Evolution*, 3 EVOLUTION & DEV. 47 (2001); Olivier Rieppel, *Turtles as Hopeful Monsters*, 23 BIOESSAYS 987 (2001); Bärbel M.R. Stadler et al., *The Topology of the Possible: Formal Spaces Underlying Patterns of Evolutionary Change*, 213 J. THEORETICAL BIOLOGY 241 (2001); Günther P. Wagner, *What is the Promise of Developmental Evolution? Part II: A Causal Explanation of Evolutionary Innovations May Be Impossible*, 291 J. EXPERIMENTAL ZOOLOGY 305 (2001); Robert L. Carroll, *Towards a New Evolutionary Synthesis*, 15 TRENDS ECOLOGY & EVOLUTION 27 (2000); Douglas Erwin, *Macroevolution is More Than Repeated Rounds of Microevolution*, 2 EVOLUTION & DEV. 78 (2000); Neil H. Shubin & Charles R. Marshall, *Fossils, Genes, and the Origin of Novelty*, in DEEP TIME 324 (Douglas H. Erwin & Scott L. Wing eds., 2000); Scott F. Gilbert et al., *Resynthesizing Evolutionary and Developmental Biology*, 173 DEVEL-

central issue (i.e., the origin and nature of biological complexity).¹⁹¹

(D) *Furthering and Protecting Academic Freedom*

A state could also make the argument that an ID statute enhances and protects the academic freedom of teachers and students who may suffer marginalization, hostility, and public ridicule because of their support of ID and/or doubts about the veracity of the evolutionary paradigm.¹⁹² This is not as far-fetched as one may think. Consider just the following examples.

(1) Historian Ronald L. Numbers relates how “one annoyed critic no doubt captured the feelings of many when he described [ID] as ‘the same old creationist bullshit dressed up in new clothes.’”¹⁹³ Numbers cites a few more examples:

When the Jewish magazine *Commentary* in 1996 published a version of ID theory by the mathematician and novelist David Berlinski, letters of protest poured onto the editor’s desk. [Daniel] Dennett ridiculed Berlinski’s stylish essay as

OPMENTAL BIOLOGY 357 (1996); George L. Gabor Miklos, *Emergence of Organizational Complexities During Metazoan Evolution: Perspectives from Molecular Biology, Palaeontology and Neo-Darwinism*, MEM. ASS. AUSTRALAS. PALAEONTOLS 15 (1993); Keith Stewart Thomson, *Macroevolution: The Morphological Problem*, 23 AM. ZOOLOGIST 106 (1992).

191. Biological complexity “concerns the origin of what makes organisms distinctively what they are: the source of the specified complexity of biological information.” DISCOVERY INST., *supra* note 188. See MICHAEL J. KATZ, *TEMPLATES AND THE EXPLANATION OF COMPLEX PATTERNS* (1986) (first usage of the term “irreducible complexity” 10 years prior to Behe’s use of it); Philip Ball, *Life’s Lessons In Design*, NATURE 409 (2001); Rodney Brooks, *The Relationship Between Matter And Life*, NATURE 409 (2001); Scott N. Peterson & Claire M. Fraser, *The Complexity of Simplicity*, GENOME BIOLOGY 2 (2001); Eugene V. Koonin, *How Many Genes Can Make a Cell: The Minimal-Gene-Set Concept*, ANN. REV. GENOMICS AND HUMAN GENETICS 1 (2000); Leslie E. Orgel, *Self-Organizing Biochemical Cycles*, 97 PROC. NAT’L ACAD. SCI. 12,503 (2000); Eörs Szathmáry, *The Evolution of Replicators*, 355 PHIL. TRANSACTIONS ROYAL SOC’Y LONDON 1669 (2000); Clyde A. Hutchison et al., *Global Transposon Mutagenesis and a Minimal Mycoplasma Genome*, SCIENCE 286 (1999); David W. Deamer, *The First Living Systems: A Bioenergetic Perspective*, MICROBIOLOGY & MOLECULAR BIOLOGY REV. 61 (1997); Jack Maniloff, *The Minimal Cell Genome: ‘On Being the Right Size’*, 93 PROC. NAT’L ACAD. SCI. 10,004 (1996); Arcady R. Mushegian & Eugene V. Koonin, *A Minimal Gene Set For Cellular Life Derived By Comparison of Complete Bacterial Genomes*, 93 PROC. NAT’L ACAD. SCI. 10,268 (1996); Claire M. Fraser et al., *The Minimal Gene Complement of Mycoplasma genitalium*, SCIENCE 270 (1995).

192. Justice Scalia, in his *Edwards* dissent, makes this argument in reference to Creationists. See *Edwards v. Aguillard*, 482 U.S. 578, 630–36 (1987) (Scalia, J., dissenting).

193. NUMBERS, *supra* note 2, at 20 (quoting David K. Webb, *Letter to the Editor*, 5 ORIGINS & DESIGN 5 (1996)).

"another hilarious demonstration that you can publish bull[shi]t at will—just as long as you say what an editorial board wants to hear in a style it favors." Another reader characterized Berlinski's "intuitions about the Design of the World as neither more nor less reliable than those of flat-earthers, goat entrail-readers, or believers in the Oedipus complex."¹⁹⁴

(2) In 1999 the state board of education in Kansas revised its standards for the teaching of evolution in its public schools.¹⁹⁵ The revisions included the modest, and defensible, claims that natural selection adds no new genetic information¹⁹⁶ and that science is defined as the "human activity of seeking *logical explanations* for what we observe in the world around us."¹⁹⁷ The standards also implied that microevolution does not entail macroevolution.¹⁹⁸ The board did not require the teaching of Creationism or Intelligent Design. It merely *suggested* that science teachers present the deliverances of their disciplines, on the matter of evolution, with tentativeness and modesty. It did not, for example, mandate that the state's teachers instruct their students that microevolution entails macroevolution, though teachers

194. *Id.* (quoting Daniel Dennett & Karl F. Wessel, *Denying Darwin: David Berlinski and Critics*, COMMENTARY 6, 11 (Sept. 1996)).

195. For an analysis sympathetic to the school board's revisions, PHILLIP E. JOHNSON, *THE WEDGE OF TRUTH: SPLITTING THE FOUNDATIONS OF NATURALISM* 63–83 (2000). For an analysis more critical and less polemical than Johnson's, see Marjorie George, Note, *And Then God Created Kansas?: The Evolution/Creationism Debate in America's Public Schools*, 149 U. PA. L. REV. 843 (2001).

196. KAN. STATE BD. OF EDUC., KANSAS CURRICULAR STANDARDS FOR SCIENCE EDUCATION 38 (Dec. 7, 1999) [hereinafter KANSAS I].

197. *Id.* at 71. This suggestion was intended to teach the lesson that science is fundamentally about arguments and evidence and not about excluding non-naturalistic points of view *a priori*. In other words, the board intended to exclude methodological naturalism as a necessary precondition of science and ontological materialism as an entailment. See JOHN H. CALVERT & WILLIAM S. HARRIS, INTELLIGENT DESIGN NETWORK, *TEACHING ORIGINS SCIENCE IN PUBLIC SCHOOLS* (2001), at <http://www.intelligentdesignnetwork.org/legalopinon.htm> (on file with the Notre Dame Journal of Law, Ethics & Public Policy).

198. KANSAS I, *supra* note 196, at 37, 69. *Macroevolution* is the view that the complex diversity of living things in our world, through small, incremental and beneficial mutations over long eons of time, are all the result of one bacterial cell. That is, all living beings share a common ancestor, giving the appearance of being designed though in reality engineered by the unintelligent forces of natural selection. *Microevolution* is the view that biological species adapt over time to changing environments and pass on those adaptations genetically to their offspring; evolution in this sense simply refers to "limited variation within fixed boundaries." DEMBSKI, *supra* note 25, at 113, which differs from macroevolution, "the unlimited capacity of organisms to transform beyond all boundaries." *Id.* at 250.

were free to do so if they wanted to. Moreover, these standards were "explicitly not binding on local school boards as an official curriculum," but were "designed to assist in the development of local curriculum by presenting the 'benchmarks' by which students will ultimately be evaluated on mandatory standardized tests."¹⁹⁹ But the board's suggestion did not sit well with many who saw the revisions as the first step in a slippery slope back to the Dayton, Tennessee of 1925. The following are a few of the comments made about and to the Kansas school board as well as the state's citizens.²⁰⁰

The editor of *Scientific American*, John Rennie, sounding like Tony Soprano giving orders to his lieutenants, instructed members of college or university admission boards to

please contact the Kansas State Board of Education or the office of [the] Governor . . . [and] [m]ake it clear that in light of the newly lowered education standards in Kansas, the qualifications of any students applying from that state in the future will have to be considered very carefully. Send a clear message to the parents in Kansas that this bad decision carries consequences for their children.²⁰¹

Washington Post columnist Gene Weingarten depicted God saying to the Kansas school board, "[t]hank you for your support" and then instructing them

to go forth and multiply. Beget many children. And yea, your children shall beget children. And their children shall beget children, and their children's children after them. And in time the genes that have made you such pinheads will be eliminated through natural selection. Because that is how it works.²⁰²

The British writer A. N. Wilson called the entire U.S. Midwest the "land of born again bone heads."²⁰³ "[N]early all" of the reasona-

199. Lisa D. Kirkpatrick, Note, *Forgetting the Lessons of History: The Evolution of Creationism and Current Trends to Restrict the Teaching of Evolution in Public Schools*, 49 *DRAKE L. REV.* 125, 126 (2000).

200. The Kansas school board's controversial revisions were removed in February 2001, as a result of a new election in which voters replaced members of the board that had supported the revisions. See *KAN. STATE BD. OF EDUC., KANSAS SCIENCE EDUCATION STANDARDS* (2001), available at <http://www.ksde.org/outcomes/science> (on file with the Notre Dame Journal of Law, Ethics & Public Policy) [hereinafter *KANSAS II*].

201. John Rennie, *A Total Eclipse of Reason*, *SCI. AM.*, Oct. 1, 1999, at 124.

202. Gene Weingarten, *And So God Says to Charles Darwin: Let There Be Light in Kansas*, *J. & COURIER*, Aug. 17, 1999, at A5.

203. A. N. Wilson, *Land of the Born Again Bone Heads*, *EVENING STANDARD*, Aug. 13, 1999, at 13, available at 1999 WL 23722898.

ble people in America are "living on the eastern seaboard and in the big cities," Wilson opines. But in places like Kansas

the stupidity and insularity of the people is quite literally boundless. . . . These are people who believe that Elvis Presley has risen from the dead or that President Clinton repented of his sins and never looked at another bimbo since Monica. Their simple, idiotic credulity as a populace would have been the envy of Lenin.²⁰⁴

(3) In 1999, a Burlington, Washington, high school biology teacher, Roger DeHart, was instructed by his superiors, as a result of a student complaint filed by the American Civil Liberties Union (ACLU), to "drop references to design and stick to the textbook."²⁰⁵ In 2001, "DeHart was told he could not even introduce materials questioning Darwin's theories,"²⁰⁶ something he had been doing for over nine years until the 1999 incident.²⁰⁷ Although no one disputes that Mr. DeHart taught the required curriculum correctly, and although he never mentioned God, he nevertheless was accused of the Socratic transgression of encouraging his pupils to think deeply and thoughtfully about the philosophical implications that flow from the Darwinian paradigm. According to a report in the *Los Angeles Times*, DeHart "dissected such scientific topics as bacterial flagella, fossil records and embryonic development. Examine the evidence, he told the students, and ponder the Big Question: Is life the result of random, meaningless events? Or was it designed by an intelligent force?"²⁰⁸

Mr. DeHart's story may be just the beginning of a political and legal melee about the nature of academic freedom in public schools and whether that liberty extends to those who embrace what a majority of their peers are convinced is metaphysical heresy. For instance, the 2001 Kansas science standards define science as "[t]he human activity of seeking *natural explanations* for what we observe in the world around us,"²⁰⁹ in contrast to the 1999 standards that define science as the "human activity of seeking *logical explanations*"²¹⁰ Of course, in the debate over origins, dem are fightin' words. Hence, in a press release issued by

204. *Id.*

205. Watanabe, *supra* note 23. For a less sympathetic narrative of Mr. DeHart's predicament, see John Gibeaut, *Evolution of a Controversy*, 85 A.B.A. J. 50 (1999).

206. Watanabe, *supra* note 23.

207. *Id.*

208. *Id.*

209. KANSAS II, *supra* note 200, at 97 (emphasis added).

210. KANSAS I, *supra* note 196, at 71 (emphasis added).

the Discovery Institute, Mark Edwards, an Intelligent Design spokesperson, replies that

[t]he [2001] Kansas decision to impose naturalism on students in the name of science will not end the new debate over life's origins. . . . What is heralded as the triumph of science is instead a victory for censorship and viewpoint discrimination. This is not what science, or America, is about; discussion of the dissenting scientific opinion on Darwinism should be allowed in science classrooms.²¹¹

(4) Some university professors, who have embraced ID, have tested the limits to which academic freedom will be extended at their open and tolerant institutions that celebrate diversity. Design theorist and Baylor University mathematician and philosopher, Dembski, whose academic credentials and publications are of the highest quality,²¹² "was stripped of his directorship of a new campus institute on intelligent design after holding a controversial conference on the issue,"²¹³ which included among its participants M.I.T. physicist Alan Guth, Berkeley philosopher John Searle, and University of Texas physicist Steven Weinberg, a Nobel Prize-winner.²¹⁴ The university alleges that Dembski was demoted because of his lack of collegiality.²¹⁵

In another case, Dean Kenyon, a senior biology professor at San Francisco State University and co-author of the well-known text on the origin of life, *Biochemical Predestination*,²¹⁶ "was removed from teaching biology by his department chairman in 1992 after criticizing Darwin's theories, but was reinstated by a vote of the Academic Senate."²¹⁷ According to an article in the *Los Angeles Times*, "other scientists report receiving correspon-

211. 'Kansas Decision on Evolution is Censorship,' Says Discovery Institute, *An Intelligent Design Think Tank*, U.S. NEWSWIRE, Feb. 15, 2001, available at 2001 WL 4140006.

212. See, e.g., *supra* notes 5, 20.

213. Watanabe, *supra* note 23; see also Tony Carnes, *Design Interference: William Dembski Fired From Baylor*, CHRISTIANITY TODAY, Dec. 4, 2000, available at 2000 WL 11062939.

214. Nancy Pearcey, *We're Not In Kansas Anymore*, CHRISTIANITY TODAY, May 22, 2000, available at 2000 WL 11062678.

215. "The university says Dembski was removed because of uncollegial behavior, not the content of his work; Dembski continues his design research at Baylor as an associate research professor." Watanabe, *supra* note 23.

216. DEAN KENYON & GARY STEINMAN, *BIOCHEMICAL PREDESTINATION* (1969). Kenyon has since repudiated the materialism he presupposed in this text. See PERCIVAL DAVIS & DEAN KENYON, *OF PANDAS AND PEOPLE: THE CENTRAL QUESTION OF BIOLOGICAL ORIGINS* (2d ed. 1993).

217. Watanabe, *supra* note 23.

dence from colleagues who confess doubts about Darwin's theories but are afraid to go public for fear of career setbacks."²¹⁸

The Supreme Court has affirmed that a teacher engages in *protected speech* under the rubric of academic freedom (and thus the First Amendment) when she brings into the classroom relevant material that is supplementary to the curriculum (and not a violation of any other legal duties) and she has adequately fulfilled all of her curricular obligations.²¹⁹ Given that, it seems to me that any government body that passed legislation to protect the academic freedom of teachers and students to discuss in the classroom scientific alternatives to evolution, including design theory, would simply be affirming by statute or written policy what is already a fixed point in Constitutional law.

ii. *Religious Motivation and the Statute's Means-End Relationship*

Since an ID statute likely would have citizen and legislative supporters whose public comments would sound like they are motivated exclusively by a desire to advance their own religious beliefs, this must be addressed in any proposed statute.

First, the statute can appeal to the secular reasons found elsewhere in the statute's text, such as the ones suggested above. As we have seen, the presence of a religious motivation or purpose is not fatal; but the absence of a secular purpose is.

218. *Id.*

219. For example, the Court writes,

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. "The vigilant protection of constitutional freedoms is nowhere more vital than in the community of American schools."

Keyishian v. Bd. of Regents, 385 U.S. 589, 603 (quoting *Shelton v. Tucker*, 364 U.S. 479, 487 (1960)). In *Epperson v. Arkansas*, the Court asserts:

Our courts . . . have not failed to apply the First Amendment's mandate in our educational system where essential to safeguard the fundamental values of freedom of speech and inquiry and of belief. By and large, public education in our Nation is committed to the control of state and local authorities. Courts do not and cannot intervene in the resolution of conflicts which arise in daily operation of school systems and which do not directly and sharply implicate basic constitutional values The Court . . . [has] acknowledged the State's power to prescribe the school curriculum, but it held [in *Meyer v. Nebraska*, 262 U.S. 390 (1923)] that these were not adequate to support the restriction upon the liberty of teacher and pupil.

393 U.S. 97, 104-05 (1968); see Francis J. Beckwith, *A Liberty Not Fully Evolved?: The Case of Rodney LeVake and the Right of Public School Teachers to Criticize Darwinism*, 39 SAN DIEGO L. REV. 1311 (2002).

Second, the statute's drafters may want to address the question of motivation head on by making both a philosophical and case law argument against the use of it in evaluating a statute's purpose.²²⁰ Both Justice Black's concurring opinion in *Epperson*²²¹ as well as Justice Scalia's dissent in *Edwards*²²² are places in which one can find the case law and the jurisprudential arguments.²²³ Third, a legislature would have to be circumspect in its articulation and crafting of an ID statute so its means-end relationship is clear. For example, in *Edwards* the Louisiana legislature made the mistake of appealing to academic freedom when in fact the statute *limited* the freedom of teachers.²²⁴ A legislature can avoid such mistakes by carefully evaluating its proposed statute in light of criticisms of the statutes struck down in *Epperson*, *McLean*, and *Edwards*.

220. For example, my motivation for defending the Free Exercise Clause may be religious; that is, I support it because it affords me the opportunity to convert others to my faith. Nevertheless, I publicly announce to my fellow citizens, with all sincerity, that the *purpose* of the Free Exercise Clause is to allow religious liberty to people from all faiths including ones hostile to mine. Yet, it would seem foolish to argue that based on my motivation one may reasonably infer that the Free Exercise Clause's "real" purpose is to advance my sectarian beliefs and thus, paradoxically, one may conclude that the Free Exercise Clause violates the Establishment Clause.

In order to appreciate the logical fallaciousness of such reasoning, suppose that someone defends the Free Exercise Clause because she is motivated by a desire for religious liberty. And, like me, she publicly announces to her fellow citizens, with all sincerity, that the purpose of the Free Exercise Clause is to allow religious liberty to people from all faiths including ones hostile to hers. Her motivation, unlike mine, coincides with the clause's purpose. But since the text and announced purpose of the Free Exercise Clause in each scenario are identical to those found in the other, it would seem that the motivation of its supporters is at best a curiosity and at worst a logically fallacious basis for discarding a statute. It is interesting to note that "the distinction between motive and purpose is elementary in criminal law." Whether or not a defendant is guilty does not depend whether he was motivated by beneficence or malevolence, but rather, "whether he acted with the purpose of accomplishing a particular result." DeWolf, *supra* note 162, at 461.

221. *Epperson*, 393 U.S. 97, 109-14 (1968) (Black, J., concurring).

222. *Edwards*, 482 U.S. 578, 634-40 (1987) (Scalia, J., dissenting).

223. See also DeWolf's outstanding analysis on this matter. DeWolf, *supra* note 162, at 461-62.

224. "Under the Act's requirements, teachers who were once free to teach any and all facets of this subject are now unable to do so." *Edwards*, 482 U.S. at 588-89. Moreover, "[T]he Act fails even to ensure that creation science will be taught, but instead requires the teaching of this theory only when the theory of evolution is taught." *Id.* at 589.

3. One Final Objection

There is one final objection that one may raise against the teaching of ID in public schools:²²⁵ Because some ID theorists describe the designer in language that is explicitly theological,²²⁶ and others describe it in language that is implicitly theological,²²⁷ and because the courts have said that the concept of God is inherently religious,²²⁸ therefore, even if ID is scientifically sound,²²⁹ the Establishment Clause forbids the teaching of it in public schools.

There are at least three problems with this argument. First, one could agree that the courts have consistently held that the concept of God is inherently religious, but that they are simply mistaken. For the courts ignore the case made by some scholars

225. See, e.g., Wexler, *supra* note 129, at 457–68. According to *Aguillard v. Edwards*,

[The district court below] reasoned that the doctrine of creation-science necessarily entailed teaching the existence of a divine creator and the concept of a creator was an inherently religious tenet. The court thus held that the purpose of the Act was to promote religion and the implementation of the Act would have the effect of establishing religion.

765 F.2d 1251, 1254 (5th Cir. 1985). In *Edwards v. Aguillard*, the Court writes: "[T]he term 'creation science,' as contemplated by the [Louisiana] legislature that adopted this Act, embodies the religious belief that a supernatural creator was responsible for the creation of humankind." *Edwards*, 482 U.S. at 592.

226. For example, Moreland speaks of ID as "theistic science." See Moreland, *supra* note 27. Ross believes his design argument is an adequate proof for God's existence. See Ross, *Big Bang Refined by Fire*, *supra* note 67. Craig maintains that his kalamcosmological argument establishes the existence of a non-material, personal, all-powerful creator of the world. See Craig, *Naturalism and Cosmology*, in *NATURALISM: A CRITICAL ANALYSIS*, *supra* note 20. Johnson talks of "theistic realism" as an alternative to materialist science. See JOHNSON, *supra* note 26 at 89–110.

227. Davis and Kenyon maintain that they are not arguing for a "supreme being," but rather, for an "agent," "cause," or "designer" who "devised" the blueprint for "creating" life. DAVIS & KENYON, *supra* note 216. DeWolf, Meyer and DeForrest assert that "[d]esign theory, unlike neo-Darwinism, attributes this appearance to a designing intelligence, but it does not address the characteristics or identity of the designing intelligence." DeWolf et al., *supra* note 21, at 85.

228. "The argument advanced by defendants' witness, Dr. Norman Geisler, that teaching the existence of God is not religious unless the teaching seeks a commitment, is contrary to common understanding and contradicts settled case law." *McLean v. Ark. Bd. of Educ.*, 529 F. Supp. 1255, 1266 (E.D. Ark. 1982) (citing *Stone v. Graham*, 449 U.S. 39 (1980); *Sch. Dist. v. Schempp*, 374 U.S. 203 (1963)).

229. "The First Amendment forbids the government from establishing religion; it does not require it to teach science. . . . [A]s a constitutional matter, the question of whether . . . [ID] is science ultimately turns out not to be a very important question at all." Wexler, *supra* note 129, at 468.

that "God" need not always be a religious concept, for "God" can be employed as a theoretical postulate without being an object of worship.²³⁰ Since the Supreme Court has shifted and expanded its view of religion over the past 150 years due to America's increasing religious diversity and new insights about the nature of religion, there is no reason why it could not change again. If the Supreme Court in Equal Protection cases can discard opinions on gender because they are anachronistic,²³¹ it certainly can do the same with outdated definitions of religion.

Second, even if one were to concede that the concept of God is inherently religious, and that the designer in ID is explicitly or implicitly theistic, it does not follow that ID cannot be taught in public schools. ID could be taught for any or all of the secular reasons listed above, for a religious belief is constitutionally barred from the classroom only if the teaching of it has *no* secular purpose.

Third, it seems reasonable to argue that ID is a research program whose inferences *support*, and are consistent with, some belief in a higher intelligence or deity; it is *not* a creed that contains belief in a specific deity as one of its tenets. To use an analogy, evolution is a research program whose inferences *support*, and are consistent with, atheism; it is not a creed that includes unbelief in God as one of its tenets. So, if a scientific research program is "religious" because it supports and is consistent with a belief in a higher intelligence or deity, it would follow that a research program is "irreligious" because it supports and is consistent with the non-existence of such a being.

In sum, if the concept of God is *not* inherently religious, then ID cannot be barred from public school classrooms for

230. See *supra* notes 118–21. Justice Scalia, in his dissent in *Edwards*, correctly points out that the notion of a designer or prime mover, as found in ancient Greek thought, was not religious. See *Edwards*, 482 U.S. at 629–30 (Scalia, J., dissenting).

231. For example, in *Goesaert v. Cleary*, the Court affirmed the constitutionality of a Michigan statute that did not permit female bartenders unless they were the male owner's wife or daughter. 335 U.S. 464 (1948). However, in *Craig v. Boren*, the Court held that an Oklahoma statute that had different minimal drinking ages for males and females violates equal protection. The Court writes in *Craig*, that

[i]nsofar as *Goesaert*, may be inconsistent, that decision is disapproved. Undoubtedly reflecting the view that *Goesaert's* equal protection analysis no longer obtains, the District Court made no reference to that decision in upholding Oklahoma's statute. Similarly, the opinions of the federal and state courts cited earlier in the text invalidating gender lines with respect to alcohol regulation uniformly disparaged the contemporary vitality of *Goesaert*.

429 U.S. 190, 210 n.23 (1976) (citations omitted).

establishment reasons merely because the designer is God; if the concept of God is inherently religious, and the designer in ID is implicitly or explicitly theistic, then ID may still be taught in public schools, based on the secular reasons listed above; and if ID is theistic and hence religious because it supports and is consistent with God's existence, then evolution is "irreligious" because it supports and is consistent with God's non-existence, but that would mean that the courts should treat evolution like ID.

III. CONCLUSION

The purpose of this article is to answer the question of whether Intelligent Design would pass constitutional muster if it were permitted or required to be part of a public school's curriculum. In order to answer this question, I first covered the rise of, and case for, ID, showing that ID—in contrast to the Creationism repudiated by the Supreme Court and other federal courts—is a serious challenge to the evolutionary paradigm. It is offered by well-credentialed scholars who have published their views in academic journals and monographs as well as in anthologies with prestigious university press imprints. I then assessed the question of whether ID is a religion, concluding that it is neither a conventional religion nor a religion according to the parallel position test (PPT). I also argued that ID would pass the *Edwards* standard, the test offered by the Supreme Court to forbid the required teaching of Creationism in public schools. For, unlike Creationism, ID is neither historically connected to *Scopes* nor is its literature replete with "science" and curricula that are transparent attempts to require that public schools offer to their students an account of origins derived from the Book of *Genesis*. I then offered four secular reasons to which a government body may appeal if it seeks to require or permit ID to be taught in its public schools: an endorsement test justification, a neutrality test justification, exposing students to new and important scholarship, and furthering and protecting academic freedom. I also suggested that any government body that entertained such legislation must be circumspect in presenting its case in a secular fashion with a clear and defensible means-end relationship. I concluded by addressing the objection that because the designer in ID is explicitly or implicitly theological, the Establishment Clause forbids it from being taught in public school science classes. Thus, given the above judgments, it is clear that Intelligent Design would pass constitutional muster if it were permitted or required to be part of a public school's curriculum. There may

be good public policy reasons not to teach ID in public schools, but there are no good constitutional reasons.

The debate over origins—from *Scopes* to *Edwards* to the present day—is one that touches on some deep and important philosophical and scientific questions about the nature of the universe, knowledge, religion, and liberty. In a society of contrary and contradictory religious and philosophical points of view, the law must address, with fairness and consistency, how public schools ought to deal with the question of origins without violating both the deliverances of science and the rights of the Nation's citizens.

The infusion of Intelligent Design into this debate has changed the legal landscape significantly. Unlike the Creationism repudiated by the Supreme Court in *Epperson* and *Edwards*, ID cannot be dismissed as a transparent attempt on the part of religious people to force their views on the public schools. Instead, ID advocates, if their case reaches our highest courts, will force even our most cerebral jurists, to carefully and conscientiously assess a jurisprudence that up until now could be—without fear of serious inspection—papered-over with the caricature of William Jennings Bryan trying to figure out where Cain found his wife. This quasi-official, “Inherit the Wind,” caricature has outlived its usefulness. It has, to enlist a bad pun, not evolved. ID is not your Daddy’s fundamentalism.

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