

UPDATED EDITION

BUT IS IT  
SCIENCE?

THE PHILOSOPHICAL QUESTION IN THE  
CREATION/EVOLUTION CONTROVERSY

EDITED BY  
ROBERT T. PENNOCK  
AND MICHAEL RUSE



"Is creationism science? This book is a powerful collection of essays examining this explosive debate. . . . By combining a thoughtful and balanced set of essays with illuminating introductions and suggestions for further reading, [this book] offers both professionals and interested readers an opportunity to assess the arguments and to reach an informed opinion."

BOOKWATCH

"An engaging . . . look at both sides of the so-called creation-evolution debate and the legal mechanisms at work in trying to wedge creationism into school curricula."

TAMPA TRIBUNE

The emotionally charged debate pitting creationism against evolution has been swirling since the publication of Charles Darwin's *Origins of Species* in 1859. The primary locus of controversy in the United States has been the courts, which have stepped in repeatedly to rule on the constitutionality of laws and policies regarding how each may be taught in the public schools.

In 1981 the US Supreme Court ruled in *McLean v. Arkansas* that so-called creation science was not science but religion and therefore should not be taught in public schools. But proponents of this theory did not accept defeat, and creationism was resurrected almost immediately in the form of intelligent design (ID), which claimed to be a new and truly scientific view. But on December 20, 2005, a US district court in Harrisburg, Pennsylvania, ruled in *Kitzmiller et al. v. Dover Area School Board* that ID is "creationism relabeled" and does not belong in science classes. In each case a central issue dealt with philosophy of science, namely, whether creationism could qualify as real science.

This fully updated anthology will inform readers about the history of the debate and bring philosophical clarity to the complex arguments on both sides. The editors, both of whom served as expert witnesses in these high-profile cases (Ruse in *McLean* and Pennock in *Kitzmiller*), begin by chronicling the intense discussion that surrounded the publication of Darwin's famous work regarding its status as science. They move on to articles that continue this discussion as it relates to modern evolutionary theory. The second major section discusses creation science, focusing on the philosophical questions arising from the *McLean* case. In the final section, the philosophical distinction between religion and science is brought up to date as it is resolved with respect to ID in the *Kitzmiller* case.

This captivating overview of one of America's most hotly contested social issues shows the vital role philosophy plays in laying bare the best competing arguments in an effort to reach objective decisions affecting education and interpretations of science and religion.

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## PREFACE

Since at least the time of Saint Augustine in the fourth and fifth centuries of the Common Era, it has been part of Christian tradition that parts of the Bible—Old Testament and New—have to be interpreted metaphorically. A literal reading just will not do. The great Reformers, Luther and Calvin, urged a return to a more scripture-based religion, but they too recognized that sometimes one must go beyond the literal words of the text. God “accommodates” his language to the common people. For various reasons, however, in the nineteenth century, American Protestantism developed into a religion that urged a much more direct and uninterpreted approach to the sacred text. In part, this was because a people building a new land needed direct guides to action and everyday living, and the preachers told them that the answers lay close at hand, in the Bible. In part, particularly in the South, this was because a literal reading of the Bible confirmed opinions and prejudices already held. Above all, a literalist reading of scripture justified slavery for its supporters. Saint Paul did not free the runaway slave but told him to return to his master and to obey!

The Civil War hardened positions and divisions that had grown in the land. In the North, the last part of the nineteenth century was an age of progress, of science and technology and industry, of advances in medicine and

other human-related endeavors, of new German-style universities, and above all in religion of the embrace of “modernism”—a belief that much in Christianity is metaphorical at best and that actions should be directed toward social improvements. In the South, and increasingly in the West as the national moved out across the plains, a Bible-based, evangelical Christianity ruled supreme. Far from seeing defeat in the war as a refutation of such a religion, sermon after sermon stressed that God most oppresses those whom he loves most. Frequent analogies were drawn between the American losers and the Israelites in captivity.

Evolution was always part of this divide, perhaps less in its own right—one doubts that many actually lay awake at night worrying about gaps in the fossil record—and more as a kind of litmus test for other, deeper concerns. To the Northern modernist, evolution was a mark of science’s triumph over old prejudices, and people almost took pride in pointing to simian aspects of their own natures. To the Southern literalist, evolution was the epitome of a false doctrine that went against scripture and that stood for lax living and godlessness. North and South agreed that evolution is incompatible with a literalist Bible-based Christianity, although North and South differed over the consequences to be drawn.

Things continued this way right through the first half of the twentieth century. Showing that what troubled people was the symbolism of evolution rather than the actual science, we find indeed considerable flexibility in its Christian opponents. The most famous public confrontation between creationism and evolution was the trial in Dayton, Tennessee, in 1925 when a young school teacher, John Thomas Scopes, was accused of teaching evolution to the young charges in his classroom. He was defended by the noted free-thinking lawyer Clarence Darrow who, on being denied the opportunity to present his own scientific witnesses, put on the stand the prosecuting attorney, William Jennings Bryan, the Great Commoner, three-time presidential candidate for the Democratic party, and sometime cabinet minister for Woodrow Wilson. Bryan, who was certainly considered by himself and by others to be an orthodox Bible Christian, calmly denied that he thought the six days of creation were six days of twenty-four-hour limits. As he said, a thousand years are as but a day in the eye of the Lord, and a day is as a thousand years.

Although Scopes was found guilty, America laughed so much at the case

that the literalist movement—now known as fundamentalism, after a series of pamphlets attacking modernism (but surprisingly, though it was soon forgotten by fundamentalists, finding no necessary opposition between scripture and evolution) that had been published between 1910 and 1915—rather faded from sight. But it was sleeping, not dead. Textbook manufacturers took note of the opposition to evolution, and it practically disappeared from the curriculum. The paradox is that this was precisely the time (the 1930s and ’40s) when evolutionary theory itself was undergoing massive changes, as the new Mendelian genetics was blended with the achievements of Charles Darwin, author in 1859 of *On the Origin of Species* and discoverer of the mechanism of natural selection (or the survival of the fittest). Just at the time when evolution finally had a fully functioning paradigm, it was disappearing from the classrooms!

Things changed in the late 1950s, thanks primarily to the Cold War and Russia’s success in launching a satellite, *Sputnik*. Rightly or wrongly, America saw itself as losing the battle with Communism and started to pour money into science and technology, including science education. New textbooks were written that made it clear that evolution was one of the truly fundamental theories of science. Evolution was back in public schools, and fundamentalists awoke to challenge what they took to be the teaching of godlessness. After the 1968 *Epperson v. Arkansas* decision in which the US Supreme Court ruled that Scopes-era laws banning the teaching of evolution were unconstitutional, supporters of creationism attempted at first to mandate that evolution not be presented as a scientific fact but just a theory and that texts also give equal emphasis to the alternative creationist account in the Bible. But such laws were immediately struck down, particularly in the 1975 *Daniel v. Waters* case, for the preferential treatment they gave to the biblical religious view over the scientific view and over the creation beliefs of other religions. Fundamentalists’ next move was inspired by a 1961 book, *The Genesis Flood*, co-written by a biblical scholar and a hydraulic engineer, that was to become the bedrock work of the invigorated literalist movement.

John C. Whitcomb and Henry M. Morris’s *The Genesis Flood* was no mere restatement of past ideas and beliefs. Deeply influenced by the thinking of Ellen G. White, the mid-nineteenth-century founder of the Seventh-day Adventists, Whitcomb and Morris endorsed a “young-earth” creationism.

Going beyond the more flexible creationism of the 1920s that Bryan exemplified and that allowed for an old earth, they stood firm for a literal six-day creation about six thousand years ago (as calculated from the genealogies given in the Bible). They were also premillennial dispensationalists, believing that earth history is divided into periods, each ended by some awful catastrophe. The end will come in the near future, when the forces of evil clash with the forces of good in the battle of Armageddon. Because Noah's Flood marked the end of the first dispensation, its proof became a key point in the creationist scenario, more so even than such things as the expulsion from Eden or the Jews' travails in Egypt. Most important, they claimed that these views were supported by science without the need for any reference to the Bible. Thus was born a new form of creationism, what they called creation science or scientific creationism. Morris built a grassroots ministry upon this idea—the Institute for Creation Research—but more politically active fundamentalists pushed it as a way to get creationism back in the schools by portraying it as science.

Matters came to a head in 1981 in Arkansas. The state's Republican governor, Frank D. White, signed into law a bill that demanded "balanced treatment," meaning that if evolution was to be taught in biology classes, then the same courtesy had to be extended to creation science. Immediately, seeing a gross violation of the United States Constitution's separation of church and state, the American Civil Liberties Union sprang into action with the 1982 *McLean v. Arkansas* case, opposing the law on the grounds that creation science, despite its name, was not science but disguised religion. The federal judge trying the case agreed with the ACLU, and it was thrown out. Subsequently, in the state of Louisiana, a similar law was declared unconstitutional, and, having been appealed unsuccessfully right up to the US Supreme Court in the 1987 *Edwards v. Aguillard* case, that seemed to be the end of creation science in the public domain.

However, like the Hydra that grows two heads for each one struck off, evangelical biblicalism was far from finished. At the beginning of the 1990s, a new version of creationism appeared that was renamed and tailored to get around the 1987 *Edwards* decision. Much more user-friendly, it avoided specific statements designed to bring science into harmony with Genesis read literally—some of its supporters were not interested in such harmony, others most certainly were but realized that for the moment a policy of silence was

golden. So-called intelligent design theory was, however, continuous with older thinking in many respects, but especially in its keystone belief that a purely naturalistic—lawbound—evolutionary theory is simply impossible and that some intelligence beyond nature had to have been responsible for the design of creation. Arguing that aspects of the organic world exhibit "irreducible complexity," that simply cannot be explained by regular science, its supporters claimed that at certain periods of life history it is necessary to suppose that an intelligence—a nonnatural designing agent—got involved to move along the development and unfurling of life here on earth. In such works as *Darwin on Trial* by the Berkeley lawyer Phillip Johnson, *Darwin's Black Box* by the Lehigh University biochemist Michael Behe, and *The Design Inference* by William Dembski, who now teaches philosophy and theology at Southwestern Baptist Theological Seminary, the case was made for the incorporation of infusions of design by a nonnatural intelligent being in the history of life. Although, like the scientific creationists, the intelligent design enthusiasts did not want publicly to identify their thinking too closely with Christian theology—there is the separation of church and state to be evaded—in truth they made little secret that they believed the designer was the God of the Bible. A particularly favorite identification was with God as described at the beginning of Saint John's Gospel.

Once again the drama moved to the law courts. In the town of Dover, Pennsylvania, the school board declared that intelligent design must be introduced into the biology classrooms of the district. Once again, the ACLU, together with Americans United for Separation of Church and State, sprang into action, arguing that such a move is unconstitutional. Once again, a federal judge agreed, dismissing the case of the school board in even more withering terms than the judge had used more than twenty years earlier in Arkansas. In *Kitzmiller et al. v. Dover Area School District et al.*, intelligent design theory was thrown on the same garbage dump as was creation science. However, it would be a person optimistic to the point of naiveté who argued that we shall never again see the rise and force of some form of creationism—whether it be called literalism, fundamentalism, creation science, intelligent design theory, or what have you.

It is with this last point in mind that this collection has been developed. It is the second edition of a work with the same title that was put together

twenty years ago by one of the present editors, Michael Ruse, who was an expert witness for the ACLU in Arkansas. He is now joined by Robert T. Pennock, who was an expert witness for the ACLU in Pennsylvania. We are both professional philosophers (Pennock also does scientific research in experimental evolution) and it was this that got us involved in the two trials, for both times it became obvious to all that although these events demanded knowledge of science and of theology, another significant part of the division between evolutionists and their opponents was philosophical. There were questions of methodology and of evaluating evidence, for example. Most importantly, given that the United States Constitution bars the teaching of religion and not of bad science, there was the task of showing that while evolutionary theorizing and experimentation is scientific, creation science or intelligent design theory are not. They are religious.

It seemed important twenty years ago, and it seems equally important now, given that we surely have not seen the end of this debate, that the philosophical elements in the creationism wars be given a full airing. Accordingly, this volume has several aims. First, at a historical and conceptual level, to see how philosophy got involved and what contributions it could make. Second, to bring the material up to date and to deal with not only the new bottles into which creationism has put its old wine but also the ways that science and philosophy of science have evolved. Third, to learn from the errors of the past so that we might try to avoid or at least mitigate such controversies in the future. If the job was not done as well as it might have been the first time, then let us see why and consider how arguments and policies may be improved to maintain the integrity of science and science education. Finally, at a more pedagogical level, to introduce students to these issues through actual cases, so that they can grasp philosophical points of great interest and importance in the rough, as it were—not sanitized in conventional textbooks, but out in the real world where decisions matter. For these reasons, we offer a new edition of *But Is It Science?*

We have significantly revised the earlier edition. The aims are the same, but the content has been updated. We eliminated some outdated or redundant pieces and added newer ones. For pedagogical reasons, we reduced the number of general secondary sources and expanded the length of the primary sources. We have kept portions of the earlier sections that provide key back-

ground information on the religious and scientific perspectives that led to the conflict over evolution and that show how philosophical issues have been important right from the start. We have also, in a somewhat revised form, retained the most significant material on the Arkansas trial, both the trial itself and the philosophical discussions about the nature of science to which it led. To this we have now added much new material on the *Kitzmiller* trial, trying to give enough information that the reader can understand the history linking the two cases, and can grasp how the philosophical issues were no less important in Pennsylvania than they were in Arkansas for answering the salient questions about the relationship between creationism and science.

We hope that you enjoy this collection and learn from it. We hope sincerely that in twenty years it will not be necessary to bring out a third edition.

Robert T. Pennock  
Michael Ruse

5. A. G. Guest, "Logic in Law," *Oxford Essays in Jurisprudence* (Oxford: Oxford University Press, 1961), p. 188.
  6. Donald L. Horowitz, *The Courts and Social Policy* (Washington, DC: Brookings Institution, 1977).
  7. This was the *Napolitano* case: Docket A-4364-81-T1, Superior Court of New Jersey, Appellate Division.
  8. Larry Laudan, *Progress and Its Problems*, p. 14; author's italics.
  9. *Ibid.*, p. 22; author's italics.
  10. *Ibid.*, pp. 24, 25; author's italics.
  11. *Ibid.*, pp. 27-30.
  12. Guest, "Logic in Law," *Oxford Essays in Jurisprudence*, p. 193.
  13. John Wisdom, "Gods," in *Logic and Language*, ed. Antony Flew (Oxford: Basil Blackwell, 1961), p. 195.
  14. John Ziman, *Public Knowledge* (New York: Cambridge University Press, 1968), p. 13.
  15. *Ibid.*
  16. Neil MacCormick, "Legal Reasoning and Practical Reason," in *Social and Political Philosophy, Midwest Studies in Philosophy* 7, ed. Peter A. French, Theodore E. Uehling Jr., and Howard K. Wettstein (Minneapolis: University of Minnesota Press, 1982), p. 273.
  17. *Ibid.*
  18. Edward Levi, "Judicial Reasoning," in *Law and Philosophy*, ed. Sidney Hook (New York: New York University Press, 1964), p. 273. See also Levi's masterly *Introduction to Legal Reasoning* (Chicago: University of Chicago Press, 1949).
  19. Gene Lyons, "Repealing the Enlightenment," *Harper's* (April 1982): 78.
  20. See Frances Fitzgerald, *America Revised* (New York: Little, Brown, 1979).
  21. For example, giants like IBM, ITT, Xerox, and CBS have entered the field. The tactics used for even small adoptions are fierce. On this point, I am indebted to Raymond English, especially for his references to his article, "The Politics of Textbook Adoption," *Phi Delta Kappan* (December 1980), and to that of Sherry Kieth, "Politics of Textbook Adoption," Project Report 81-A7, Institute For Research on Educational Finance and Governance, School of Education, Stanford University.
- Nor should one underestimate the inanities of which state legislatures and school boards are capable. After World War I, Oregon required all students to attend only public schools, and Nebraska, Iowa, and Ohio banned the teaching of foreign languages. See Diane Ravitch, "The New Right and the Schools," *American Educator* (Fall 1982): 10.

PART III

## INTELLIGENT DESIGN CREATIONISM AND THE *KITZMILLER* CASE

## INTRODUCTION TO PART III

The first article in this section was written especially for this volume to document the early transition from the “creation science” of the 1981 *McLean* trial to the “intelligent design” (ID) of the 2005 *Kitzmilller* trial. Nicholas J. Matzke, then on the staff of the National Center for Science Education, was a consultant to the plaintiff attorneys in the latter case. The *Kitzmilller* case involved the use of the ID textbook *Of Pandas and People*. It was in the production of *Pandas* that the ID terminology, in its present use, was born. Matzke’s historical detective work during the trial’s discovery process unearthed previously unknown manuscript drafts of *Pandas* that were then subpoenaed for the trial, and these helped establish a direct paper trail between creation science and ID. The article functions as a continuation of the history of creationism presented in the excerpt from Ronald Numbers in chapter 11. In addition to reviewing some of the documentation he uncovered for the trial, Matzke introduces many of the key pioneering figures who formulated the ID arguments to try to overcome the legal defeats scientific creationism suffered in the *McLean* case and the *Edwards v. Aguillard* case. This is currently the only article available anywhere that covers this critical transitional period in the modern history of creationism.

The second piece is by law professor Phillip Johnson who is recognized by

all as the pivotal leader who hammered out a new legal strategy for ID and who brokered a truce between young-earth and old-earth creationists, making ID a unified movement. Because of his importance to the movement, it is worth taking extra space here to provide some additional background information about his thinking. It was Johnson's 1991 book, *Darwin on Trial*, that put ID on the map. The article we include here was originally given as a talk at Hillsdale College in the year after his book was published and provides a clear overview of its main theses—ideas that became the ID movement's recurring themes. It was Johnson who organized many of the key players one now recognizes as the core of the ID movement. One of the most significant events was a 1992 symposium organized around Johnson's book that was held at Southern Methodist University. Organized with the help of *Pandas* publisher Jon Buell, the symposium included Michael Behe, William Dembski, and Steven Meyer, who would subsequently all be slated as expert witnesses to defend the Dover ID policy in the *Kitzmiller* trial. (By strange coincidence, both of us were also at that symposium—Ruse as the invited evolutionist to face Johnson on stage and Pennock in the audience doing research on the nascent movement for what would become a series of articles and his book *Tower of Babel: The Evidence against the New Creationism*.) For the next decade Johnson was the central leader of the movement and was known as “the cutting edge of the wedge,” though he was forced to scale back his work following a stroke in 2001 and another in 2004. In 2003 Johnson was lauded for his efforts by being named *World Magazine's* “Daniel of the Year.” In an interview upon accepting the award he explained his thinking regarding how to search for an alternative to evolution:

“I looked for the best place to start the search,” Mr. Johnson says, “and I found it in the prologue to the Gospel of John: ‘In the beginning was the Word.’ And I asked this question: Does scientific evidence tend to support this conclusion, or the contrary conclusion of the materialists that ‘in the beginning were the particles?’” (*World Magazine* 18, no. 48 [December 13, 2003])

He concluded:

If we start with the Gospel's basic explanation of the meaning of creation, we see that it is far better supported by scientific investigation than the con-

trary... [A]ll I really want to do with the scientific evidence is to clear away the obstacle that it presents to a belief that the creator is the God of the Bible. (*World Magazine* 18, no. 48 [December 13, 2003])

Just as Duane Gish and the creation scientists did, Johnson claimed that his conclusions were made scientifically without reference to the Bible. One also sees the same dual-model argument, in which creation is purportedly proven necessarily if Darwinian evolution is false.

“...I thought if Darwinism is not true, what is? If you can't do the creating without an Intelligent Designer, a creator, then there must be a creator.” In subsequent books... Mr. Johnson argued persuasively that a supernatural power or Intelligent Designer had to have guided the creation and development of life. (*World Magazine* 18, no. 48 [December 13, 2003])

Johnson goes on to say how his biggest surprise and disappointment was the resistance his movement encountered from some Christians.

The more frustrating thing has been the Christian leaders and pastors, especially Christian college and seminary professors. The problem is not just convincing them that the theory is wrong, but that it makes a difference. What's at stake isn't just the first chapter of Genesis, but the whole Bible from beginning to end, and whether or not nature really is all there is. (*World Magazine* 18, no. 48 [December 13, 2003])

One will notice echoes of Charles Hodge from chapter 6 in Johnson's piece; indeed, Johnson gives his article the same title as Hodge's book on Darwinism to emphasize the connections. Hodge's views about the relationship of evolution to Christianity were very influential to the ID movement. ID leader Jonathan Wells wrote his theology dissertation on Hodge and William Dembski founded a student group he called the Charles Hodge Society while a student at Princeton Theological Seminary. Like Hodge, ID theorists view Darwinism as equivalent to atheism. They explicitly reject what is known as theistic evolution, the mainstream Christian position that accepts evolution in its scientific form and does not take it to be incompatible with Christianity.

The next piece is an excerpt from an important law review article about the legal prospects for ID written by biologist Matthew Brauer, philosopher Barbara Forrest, and law professor Steven Gey. Written a couple of years prior to the *Kitzmiller* case, the article considers ID in light of the *McLean* case. This short excerpt from the long full article focuses on the question of whether ID could pass muster as science given the revised legal standards set by the Supreme Court in the 1993 *Daubert v. Merrell Pharmaceutical, Inc.* case, which some ID proponents had argued supported their claim to be recognized as scientific. The authors suggest that some theories are so inconsistent with current scientific understandings of the world that they cannot be reasonably construed as scientifically valid and that in the end it is irrelevant whether one calls such theories unscientific or merely “bad science.” However, they also point out that *Daubert* speaks directly of what is to count as scientific knowledge and makes reference to testability, falsification, and general acceptance by the scientific community. This would rule out ID for much the same reasons that creation science was ruled out in *McLean*. Forrest later served as an expert witness in *Kitzmiller*, providing key testimony on the history of the ID movement and the ID textbook *Of Pandas and People*.

Starting with chapter 23, we turn to the *Kitzmiller* trial itself and how our philosophical question played out for ID when its proponents had their chance to present their case in court. We begin with excerpts from the testimony of the lead defense expert witness, Michael Behe. Next to Phillip Johnson, Behe is certainly the most important figure in the ID movement. His scientific credentials as a professor of biochemistry at Lehigh University made him the most credible public face for a movement that was dominated by law professors, philosophers, and others who did no scientific research. More substantively, his “irreducible complexity” argument against Darwinian or any natural mechanism of evolution (which the reader will recognize as a variation of Paley’s watchmaker argument from part I) is the core ID argument and figured prominently in the case. The excerpts we include are the key parts of Behe’s direct oral testimony in which he offers a definition of science that he argues should include ID as legitimately scientific. It is also interesting to see how Behe brings up Paley’s design argument for the existence of God and argues that it, too, is scientific, and how he appeals to Richard Dawkins’s views to try to support this claim. We also include a brief excerpt from Behe’s

testimony under cross-examination in which ACLU attorney Eric Rothschild questions him about the differences between Behe’s definition of science and that of the National Academy of Sciences, and asks him about the implications of his more liberal definition, which would also license astrology as science. These excerpts cover the main portions of Behe’s testimony that deal directly with the question of what science is, but readers are encouraged to examine his complete testimony, which is available online starting at [http://www2.ncseweb.org/kvd/trans/2005\\_1017\\_day10\\_am.pdf](http://www2.ncseweb.org/kvd/trans/2005_1017_day10_am.pdf) and continuing through...2005\_1018\_day12\_pm.pdf to get the full context and for other indirect aspects of Behe’s testimony that bear on the question. His written expert report is available at <http://www2.ncseweb.org/kvd/experts/behe.pdf>.

Next comes my (Pennock’s) written testimony as an expert witness for the plaintiffs in which I lay out the argument that ID is not science but rather is a sectarian religious view. For my expert report I drew from the extended discussion of these topics in my book *Tower of Babel* and in various prior and subsequent articles, and supplemented this with additional evidence and arguments. The core of my written testimony dealt with methodological naturalism (MN), the scientific ground rule restricting science to natural explanations. Supernaturalism is not ruled out dogmatically, but rather for good reasons having to do with requirements of testability. I also presented evidence to document that ID is a form of creationism and does appeal substantively to the supernatural (though its advocates sometimes try to deny or obscure these facts). The element of supernatural design also independently established that ID is a religious view, and I also presented additional evidence to show how ID is not just a generic theistic view, but a sectarian one. Finally, I briefly described some of my experimental evolution research, which allows one to directly observe how evolution by natural selection can produce irreducible complexity. To see how I defended my written report from challenges by the defense attorney, one may read a transcription of my daylong deposition, which is available online at [http://www2.ncseweb.org/kvd/depo/2005-06-14\\_deposition\\_Pennock.pdf](http://www2.ncseweb.org/kvd/depo/2005-06-14_deposition_Pennock.pdf). The transcript of my direct oral testimony and cross-examination in court may be found at [http://www2.ncseweb.org/kvd/trans/2005\\_0928\\_day3\\_am.pdf](http://www2.ncseweb.org/kvd/trans/2005_0928_day3_am.pdf).

In chapter 25, University of Warwick sociologist of science Steve Fuller explains the argument he made as an expert witness for the defendants. Although he had not previously been much involved in the ID debate, he was

known as a supporter of the movement in a general way, as described by ID proponent Tom Woodward (personal communication) and in comments in several articles. For instance, in a 2002 article he had written:

[W]hile I support the teaching and research of intelligent design theory in mainstream universities, it is not in the spirit of the establishment of departments of Creation and Darwinian Science in “separate but equal” facilities on opposite sides of the campus. Rather, I would expect the cross-listing of courses and collaboration of faculty that one normally finds between any two intellectually overlapping disciplines. Among other things, I would hope that creationists come to see that some of their concerns better are addressed by Darwinists than if left to their own devices—and vice versa. (Fuller, “Demystifying Gnostic Scientism,” *Rhetoric & Public Affairs* [2002]: 718–26)

In the article we reproduce here, one written after the trial, Fuller explains how his role was similar to that of Michael Ruse in the *McLean* trial, though he saw himself as providing the perspective of science studies to the question of whether ID counts as science. Fuller explains why he rejects methodological naturalism, arguing that “the history of science is full of hypotheses of ‘supernatural’ inspiration.” The operative word here is “inspiration”; Fuller is making use of the distinction between what is known as the *context of discovery*, in which scientists generate hypotheses, and the *context of justification*, in which those hypotheses are tested. This defense turned out not to be especially helpful to ID, which makes a stronger claim that supernatural notions should be accepted as substantive explanations and not merely as a possible element of someone’s inspiration. Again, the reader should seek out the online trial transcript of the trial for Fuller’s complete testimony, which is available at [http://www2.ncseweb.org/kvd/trans/2005\\_1024\\_day15\\_am.pdf](http://www2.ncseweb.org/kvd/trans/2005_1024_day15_am.pdf) and ... 2005\_1024\_day15\_pm.pdf.

The next article, chapter 26, is by University of Wisconsin philosopher of biology Elliott Sober, who was a philosophy consultant during the preparation of the *Kitzmiller* case, standing ready to serve as a rebuttal witness had that been required. In this piece he steps back from the details of the ID position and considers only its most minimal thesis—what he calls “mini-ID”—namely, that complex adaptations that biological organisms display were crafted by an intel-

ligent designer. Reviewing the notions of testability and falsifiability, he explains the role that auxiliary propositions play in any scientific test and how there are no independently attested auxiliary propositions available that allow mini-ID to make any differentiating observational prediction. Even in its most minimal form, he concludes, ID fails as a serious alternative theory.

Chapter 27 is an excerpt from the final ruling in *Kitzmiller*. We unfortunately did not have the space to include the entire text of the court’s opinion issued by Judge John E. Jones III. The unusually detailed 139-page *Kitzmiller* opinion summarizes the wealth of evidence that both sides presented over weeks of testimony and a careful account of the legal reasoning behind the verdict that found the teaching of ID to be unconstitutional. The excerpted material includes a short section that lays out the background of the case and two longer sections that deal with the reasoning behind the court’s findings that ID was a form of creationism and not science. The Dover board’s introduction of ID in the schools as though it were science, the judge concluded in probably the most oft-quoted phrase from the ruling, was “breathtaking inanity.” *Kitzmiller* has already been hailed as a legal landmark and we encourage readers to seek out and read the complete version of the ruling, which is available online at [http://www2.ncseweb.org/kvd/all\\_legal/2005-12-20\\_Kitzmiller\\_decision.pdf](http://www2.ncseweb.org/kvd/all_legal/2005-12-20_Kitzmiller_decision.pdf).

This is a good place to point out that readers who wish to delve further into the details of the *Kitzmiller v. Dover* case have a wealth of online material they may examine. The most complete set of documents is hosted by the National Center for Science Education, which was a consultant to the plaintiff attorneys in the case. The center’s *Kitzmiller* materials are indexed at <http://www2.ncseweb.org/kvd/> and one can find additional background information including a timeline with news articles about the case at [http://www2.ncseweb.org/wp/?page\\_id=5](http://www2.ncseweb.org/wp/?page_id=5).

ID creationists were, of course, dismayed by the *Kitzmiller* verdict, which was a devastating defeat for their movement. In attempting to downplay its significance, they labeled Judge Jones an “activist judge” with “delusions of grandeur” who overstepped by inappropriately ruling on the question of whether ID was science. Taking us back to philosophical debate about demarcation from the previous section, they cited Larry Laudan to say that it was illegitimate for Judge Jones to have ruled on the question of whether ID is or

is not science because Laudan had shown that demarcating science from non-science was a dead pseudoproblem. In the final chapter, I (Pennock) revisit the demarcation problem, arguing that Luadan and other anti-demarcationists were mistaken not only in many of their key pronouncements but also in how they framed the question. The problem of demarcation in the creation controversy is not the search for a set of necessary and sufficient defining conditions that draws a pinline border between science and anything else. Rather, the relevant notion is a more modest notion of demarcation that gives a ballpark ruling—creationism fails to be scientific because it violates a basic ground rule that science takes for granted. I conclude: “We do not need to precisely delimit the boundaries of science any more than we need the precise boundaries of a pin to conclude that it is not science to ask how many angels can dance on its head.” If philosophers of science are not able to tell the difference between science and pseudoscience or religion even in cases such as creationism, then they have lost touch not only with their subject but also with the natural world itself.

## CHAPTER 20

## BUT ISN'T IT CREATIONISM? THE BEGINNINGS OF “INTELLIGENT DESIGN” IN THE MIDST OF THE ARKANSAS AND LOUISIANA LITIGATION

NICK MATZKE

In 1981, the state of Arkansas adopted Act 590, which mandated “balanced treatment” for creation science in the public schools. An ACLU-led coalition filed a constitutional challenge, producing the case *McLean v. Arkansas*. A two-week trial was held in December, and on January 5, 1982, the law was overturned in a forceful, detailed decision issued by Judge William Overton.<sup>1</sup> A similar law was passed in Louisiana, also in 1981, but it would not take effect until 1983. A complex series of litigations over the Louisiana law followed, eventually resulting in a summary judgment (decision without a trial) against its constitutionality in 1985, which creationists then appealed up to the Supreme Court.<sup>2</sup> On June 19, 1987, the Supreme Court issued a 7–2 decision upholding the rulings of the lower courts. Even without a trial, the Court said, the legislative record showed that the Louisiana law violated the Constitution by “advancing the religious belief that a supernatural being created humankind.”<sup>3</sup>

These cases, their history, and their impact, have been discussed extensively, as have some of the issues that arose during their litigation.<sup>4</sup> Critics of “intelligent design” (ID) almost universally claim that ID is a form of creationism that was relabeled in an attempt to get around the *Edwards* decision.

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The label “intelligent design creationism” (IDC) is often applied to make the connection explicit. Promoters of ID, on the other hand, go to great lengths to deny connections between ID and the creationism that the creationists were defending in the *McLean* and *Edwards* cases.

“Intelligent design,” defined as the ID terminology plus the distinctive body of claims typically put forward by the ID movement, was not an invention of Phillip Johnson, Michael Behe, the Discovery Institute, or others who became prominent promoters of ID in the 1990s. The 1990s were important for ID, as the period in which its rhetoric solidified, the “Wedge Strategy” was constructed, and ID migrated from the outskirts of creationism to the headlines. But before the expansion of ID in the 1990s was its origin in the 1980s. The ID advocates of the 1990s were able to adopt with only minor variations a preexisting ID platform that had emerged fully formed in 1989 with the publication of the textbook *Of Pandas and People: The Central Question of Biological Origins*. The actual label “intelligent design” was adopted in a decision made by the editors of the *Pandas* books, in direct response to the Supreme Court’s 1987 *Edwards* decision that ruled “creation science” unconstitutional. However, ID’s distinctive body of claims was not assembled after 1987, but between 1982 and 1984: salvaged from the ruins of the creation scientists’ spectacular collapse in the *McLean* trial, and retooled in preparation for the hoped-for and expected trial in the *Edwards* case, and a potential victory in that case. The ID claims are nothing more than a stripped-down version of the set of claims put forward under the “creation science” label in the *McLean* case, and are essentially identical to the set of claims put forward by the creationists in the *Edwards* case.

This picture is substantially different, at least in its details, than any history of ID currently available, either from ID critics, who have tended to focus on Phillip Johnson, the Discovery Institute, and the Wedge Strategy, all of which actually postdate the origin of ID; or from ID promoters, who indignantly deny any substantive connection between ID and creationism.<sup>5</sup> Numbers and Larson, the prominent historians of creationism, seem to have taken intermediate positions. However, neither has conducted a detailed study of the origins of ID in the 1980s. To help the reader see how I arrived at the present position, it is worth reviewing some recent discoveries about the origins of ID.

## THE GREAT RELABELING EVENT OF 1987

Court cases have a remarkable way of focusing the mind. I say this from personal experience. As an employee of the National Center for Science Education (NCSE), I served as a researcher and advisor for the plaintiffs’ legal team in the 2005 *Kitzmiller v. Dover* case on the constitutionality of “intelligent design” (ID). The Dover Area School District’s ID policy recommended the supplementary textbook *Of Pandas and People* for “an understanding of what intelligent design actually involves.”<sup>6</sup> And *Pandas*, first published in 1989, was the first book to systematically use terms like “intelligent design,” “design proponents,” and “design theory.” It is true that occasional instances of the concatenation “intelligent design” or “intelligent Design” can be found in the creationist literature, and even (rarely) going back to Darwin and before, in discussions of teleology and the classical argument from design for the existence of God. But *Pandas* is the first work to enshrine the term “intelligent design” in a glossary, and the first work to disavow a connection between “intelligent design” and creationism. Before the *Kitzmiller* case made the fact embarrassing, Jon Buell,<sup>7</sup> in a 2004 preface to the third edition of *Pandas*,<sup>8</sup> noted proudly that *Pandas* was “the first place where the phrase ‘intelligent design’ appeared in its present use.”<sup>9</sup>

For these reasons, it was apparent from the filing of the *Kitzmiller* case in December 2004 that it would be important to connect the “intelligent design” of *Pandas* to the creationism ruled unconstitutional in the 1987 Supreme Court case *Edwards v. Aguillard*. Initially, the plaintiffs’ plan was to make this argument based only on the published text of *Pandas*. (A second edition of *Pandas* was published in 1993; this was the edition used in *Dover*.) This is an easy enough argument to make. The arguments in *Pandas* against biological evolution are mostly indistinguishable from claims previously made by the “creation science” movement of the 1980s—assertions about gaps in the vertebrate fossil record, the Cambrian explosion, the unacceptability of “macroevolution” as opposed to “microevolution,” the improbability of the origin of life, and the evolution of biological complexity, etc.<sup>10</sup> Similarly, *Pandas* regularly makes use of the old creationist tactic of “quote-mining” from evolutionary biologists; virtually every quote in *Pandas* had been previously exploited endlessly by the creation scientists.<sup>11</sup>

In addition, despite several explicit denials, various passages in *Pandas* make it unambiguously clear that the view the book advocates is not some intangible “guidance” of evolution, or intervention by space aliens, but the biblical doctrine of special creation. For example, *Pandas* describes the two longstanding creationist positions, young-earth and old-earth creationism, only mildly disguised in design terminology:

An additional issue concerns the matter of the earth’s age. While design proponents are in agreement on these significant observations about the fossil record, they are divided on the issue of the earth’s age. Some take the view that the earth’s history can be compressed into a framework of thousands of years, while others adhere to the standard old earth chronology.<sup>12</sup>

Another passage states that “[d]esign proponents point to the role of intelligence in shaping clay into living form.”<sup>13</sup> This seems like an extremely odd passage, until it is realized that this is a not-so oblique reference to Genesis 2:7, which reads, “And the LORD God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.”<sup>14</sup> Moreover, *Pandas* clearly refers to special creation of different “kinds” of life in various passages. A good example, regularly cited at the *Kitzmiller* trial, occurs on pages 99–100:

Intelligent design means that various forms of life began abruptly through an intelligent agency, with their distinctive features already intact—fish with fins and scales, birds with feathers, beaks, and wings, etc.<sup>15</sup>

Faced with evidence of this sort, ever since 1989, critics of *Pandas* and its “intelligent design” proposal have been sure they smelled a creationist rat. Paleontologist Kevin Padian denounced the work as “straight fundamentalist creationism.”<sup>16</sup> Eugenie C. Scott, executive director of the NCSE, said, “It is a classic ‘equal time’ tract.”<sup>17</sup> Michael Ruse cited *Pandas* as the fulfillment of a prophecy that an ACLU attorney issued after the *McLean* case: “Don’t think the creationists will go away. They won’t! They’ll just regroup and be smarter and sneakier next time.”<sup>18</sup> In his *Tower of Babel: The Evidence against the New Creationism*, Robert Pennock even wrote that *Pandas* “substitutes the term

‘designer’ or ‘master intellect’ for ‘Creator,’”<sup>19</sup> a prescient remark given subsequent discoveries. Other notable examples of the argument that ID is merely creationism relabeled include *Creationism’s Trojan Horse: The Wedge of Intelligent Design*, by Barbara Forrest and Paul Gross,<sup>20</sup> and Leonard Krishtalka’s pithy description of ID as “nothing more than creationism dressed in a cheap tuxedo.”<sup>21</sup>

In the early stages of the *Kitzmiller* case, the general arguments connecting ID to creationism were incorporated into the expert witness reports and testimony of the *Kitzmiller* experts.<sup>22</sup> But one more argument was added to the plaintiffs’ arsenal in *Kitzmiller*, and it turned out to be particularly devastating.

Here is where the mind-focusing aspect of court cases came into play. Could the argument that ID was creationism relabeled be made even more strongly? In early 2005, I began to look carefully into the origins of the *Pandas* book. The full story is told elsewhere,<sup>23</sup> but in short, an examination of creationist newspapers and other documents from the 1980s in the NCSE’s archives revealed that the 1989 *Pandas* had been under development since 1981 or before—and, crucially, that the book had originally been on the topic of “creation” rather than “intelligent design.” Furthermore, a draft version of *Pandas*, titled *Biology and Origins*, had been produced in substantial quantities around 1987 and distributed to reviewers and potential publishers.

This indicated that a physical draft of *Pandas* might still exist, using explicitly creationist terminology instead of “intelligent design” terminology. In April 2005, I summarized this information for the *Kitzmiller* lawyers, who promptly issued a subpoena to the Foundation for Thought and Ethics (FTE) for any drafts or any other material relating to the origins of the book. FTE filed a motion to quash the subpoena, but the motion was denied, and in July 2005 the requested documents were produced for the plaintiffs. Amid the documents were five distinct drafts of *Pandas*. They were eventually introduced into evidence in the *Kitzmiller* case as shown below. The two published versions of *Pandas* were also introduced into evidence, as was a chapter from the unpublished third edition, *The Design of Life*.<sup>24</sup>

Exhibit #	Title	Date
P-563	<i>Creation Biology</i> Textbook Supplement	1983 (based on file dates on the manuscript)
P-560	<i>Biology and Creation</i>	1986 (copyright page)
P-561, P-001, P-002	<i>Biology and Origins</i>	1987 (copyright page)
P-562	<i>Of Pandas and People</i> , version 1	1987 (copyright page)
P-652	<i>Of Pandas and People</i> , version 2	1987 (copyright page)
P-652	<i>Of Pandas and People</i> , published, first edition	1989 (copyright page)
P-652	<i>Of Pandas and People</i> , published, second edition	1993 (copyright page)
P-775	<i>The Design of Life</i> (draft of chapter 6)	2005 (unpublished)

As revealed during Barbara Forrest's testimony at the *Kitzmiller* trial, between the two 1987 drafts titled *Of Pandas and People*, the creationist terminology was expunged, and replaced with "intelligent design" terminology. For example, the previously quoted statement that "intelligent design means that various forms of life began abruptly..." reads as follows in a previous draft:

Creation means that various forms of life began abruptly through the agency of an intelligent Creator with their distinctive features already intact—fish with fins and scales, birds with feathers, beaks and wings, etc.<sup>25</sup>

Similar changes occurred over one hundred times between the two 1987 drafts, as illustrated in charts presented in the *Kitzmiller* case.<sup>26</sup> As if this evidence wasn't remarkable enough, while examining the drafts, Forrest discovered a peculiar sentence in the second 1987 draft of *Pandas*: "Evolutionists

think the former is correct, cdesign proponentsists [*sic*] accept the latter view."<sup>27</sup> Apparently, an editor was replacing the word "creationists" with the phrase "design proponents," but in the course of this tedious procedure the "c" and "ists" of "creationists" were accidentally left in the text. This has since been dubbed "the missing link" by critics of ID, and is now gleefully included in virtually every anti-ID talk and lecture.

For the foes of ID, the creationist terminology of *Pandas* seems to provide the final vindication of what they have always claimed: that ID is just warmed-over creationism. The argument was convincing in the *Kitzmiller* case—the judge called the evidence "astonishing" and drew the obvious conclusion: that the editors of *Pandas*, unwilling to abandon years of work on their creationist textbook, instead "re-branded" creationism after the 1987 *Edwards* decision. From the perspective of a federal judge in a district court, the legal implications are particularly compelling. Above all, the district court judge's job is to follow the precedents set down by the Supreme Court. The 1987 *Edwards* decision was clearly such a precedent. The *Pandas* drafts are the smoking gun that proves that the "intelligent design" label was adopted in response to the *Edwards* decision.

## THE PANDAS DRAFTS IN CONTEXT

The *Pandas* drafts, even taken in isolation, are compelling evidence that something is deeply erroneous about any claim that ID is not creationism relabeled. But they should not be viewed in isolation. An examination of the events of the early 1980s will show that the *Pandas* drafts were not an anachronism, but instead fit neatly into the creationist legal struggles to defend the "balanced treatment" laws and their "two model" "equal time" approach.

Previous works have covered in depth the origins and development of "creation science" in the 1960s and 1970s, including the influence of Henry Morris, Duane Gish, and their associates at the Institute for Creation Research (ICR) and the Creation Research Society (CRS), as well as the origins of the creation science two-model/equal-time legal strategy in the work of young-earth creationist attorney Wendell Bird.<sup>28</sup> A convenient point at which to pick up the story of the origin of ID is the *McLean* trial in 1981. On March 19, 1981,

Arkansas governor Frank White signed into law the Balanced Treatment of Creation Science and Evolution-Science Act. The law provided that if “evolution science” were taught, equal time would have to be given to “creation science,” which was defined as sudden creation of the universe, “kinds” of organisms, and humans; geological catastrophism including a worldwide flood and “a relatively recent inception of the earth and living kinds.” This is obviously just a literal reading of Genesis, known as “young-earth creationism,” given a pseudoscientific veneer; but Act 590 is full of assertions that creation science is a scientific view and not a religious doctrine, and the act explicitly forbade the use of “any religious doctrine or materials.”

The ACLU filed suit on May 27 on behalf of a group of plaintiffs that included Arkansas teachers and clergy. A frantic six-month preparation for trial ensued, with the ACLU recruiting several prominent academics (including biologist Francisco Ayala, paleontologist Stephen Jay Gould, geologist Brent Dalrymple, chemist Harold Morowitz, philosopher Michael Ruse, historian George Marsden, and theologian Langdon Gilkey) as expert witnesses, and dozens more as advisors. Attorney General Steve Clark defended the law. The defense assembled its own roster of experts to counter the plaintiffs, but, somewhat surprisingly, left out the two biggest names in creation science, Henry Morris and Duane Gish, probably because of obvious religious baggage.<sup>29</sup> Only two of the defense experts, Donald Chittick and Robert Gentry, testified primarily about evidence for a young earth and a global flood. The main thrust of the defense case, however, was that scientific evidence, mostly biological, showed that evolution didn’t work, and thus provided evidence for a scientific, nonreligious version of creation. It is now conventional wisdom on all sides that creation science is irrevocably derived from a literal reading of the Bible, but at the time, the whole point of creation science was to dodge this rap, at least in court. The defense presented creation science as being dramatically different from Bible-thumping fundamentalism.

The defense’s lead expert was Norman Geisler, an old-earth creationist theologian at Dallas Theological Seminary. Geisler was to testify on the definition of religion and its inapplicability to creation science. However, he himself was unable to deny the obvious: “I think in all honesty that the people who devised this [act] probably got their model from the book of Genesis.”<sup>30</sup> One might think this admission would sink the defense, but Geisler said, “the

source does not matter,” and argued at length that “belief in” God was religious, but “belie[f] that there is a God [has] no religious significance whatsoever.”<sup>31</sup> He then made several arguments that will seem eerily familiar to twenty-first-century observers of the intelligent design movement. Geisler said that science has a narrow and a broad definition. The narrow definition relies on repeatability and natural law but only “deals with the present.”<sup>32</sup> Creation is not science under this definition, but then, said Geisler, neither is evolution.<sup>33</sup> “Origins” topics were only science under Geisler’s broad definition, where, as in “forensic medicine,” “you can only make probable models,” and “when we’re talking about origins, we can’t talk about the fact of evolution or the fact of creation, because it’s really only an extrapolation . . . we can’t repeat or observe.”<sup>34</sup> Moreover, argued Geisler, “[Science about origins] has to take things we know to be true in the present and suppose that they were also true in the past[,] or argue from analogy.”<sup>35</sup> and biological creation was well supported by arguments from analogy, “a dictionary is normally produced by intelligent activity, not [an] explosion in a printing shop.”<sup>36</sup>

According to the description of the trial in *Science*, Geisler’s argument that a creator was not necessarily religious “was the defense’s principal thrust for being able to teach about the product of a creator without necessarily being religious. Judge Overton was clearly interested in this line of reasoning, until, under cross-examination, Geisler tarnished his credibility somewhat by declaring that UFOs “were agents of Satan.”<sup>37</sup> The UFO remark, solicited during Geisler’s cross-examination, made the headlines at the time and is now almost the only thing that anyone remembers about Geisler’s testimony. But it is clear that even in 1981, Geisler was arguing for something essentially identical to what would now be called intelligent design, but in defense of an undeniably “creation science” law.

Several other defense experts made standard creationist arguments that later became key planks of ID.<sup>38</sup> Biologist Wayne Frair, a young-earth creationist and board member of the Creation Research Society, testified that “the various kinds of life” were “genetically unrelated,” but that “kind” was a larger group than species, which could evolve “within limits.” Frair asserted that Arkansas was “on the very cutting edge of an educational movement” with its two-model approach to origins.<sup>39</sup> Agnostic biochemist William Scot Morrow stated that, although he was an evolutionist, the plaintiffs’ experts

were “close-minded,” that producing life or proteins “by chance” was “basically impossible,” and that the fossil record supported creation.<sup>40</sup> In response to a skeptical question by the judge about the lack of references supporting Morrow’s opinions, Morrow said that the scientific community practices “systematic censorship.”<sup>41</sup> Retired botanist Margaret Helder, vice president of the Creation Science Association of Alberta,<sup>42</sup> made an argument similar to Frair’s, but focused on plants. She claimed “[s]he never had to introduce any religious literature to discuss her creationist views.”<sup>43</sup>

Ariel Roth, the director of the Geoscience Research Institute (a young-earth creationist, Seventh-Day Adventist group based at Loma Linda University) invoked standard creationist improbability arguments, which rely on the utterly mistaken idea that evolution is a purely random process. His examples included the “high improbability of random formation of life” and “the near impossibility of the random formation of chromosomes” and genes.<sup>44</sup> Roth also made an argument identical to the one Michael Behe would produce fifteen years later:

Roth mentioned [the] difficulty of evolving complex integrated structures since each part of the integrated structure alone would be useless to the organism in which it first appeared and therefore would be weeded out by natural selection. ... As an example of the difficulty of evolving “complex integrated structures,” Roth noted the relationship of “the ear, the brain, and the auricular nerve,” and the respiratory system. Of the respiratory system, he said, “This system would not be functional until all of the parts were there. ... How did these parts survive during evolution as useless parts under natural selection?”

Asked if creation science could be taught only on scientific grounds without religious references, Roth said it could, since “origin by design” is a scientific idea. ...<sup>45</sup>

Harold Coffin, another employee of the Geoscience Research Institute, testified next. He argued that “sudden appearance of life in the ‘Cambrian’ rocks of the geological column indicates sudden creation instead of slow evolution.” Evolution was called into question by gaps in the fossil record, said Coffin, who asserted an “absence of ‘connecting links’ between basic kinds of animals and plants in the fossil record.” Coffin invoked the creationist “kinds” concept, asserting “the inability of scientists to cause or observe in modern life forms changes from one basic kind of life to another.”<sup>46</sup> The concept of a

created “kind” that can only evolve within strict limits is derived from the peculiar creationist exegesis of Genesis, where God commands various animals to reproduce “after their kind.” The “kinds” concept was later adopted wholesale by the ID movement with only cosmetic changes.<sup>47</sup>

Perhaps the oddest creationist expert was N. Chandra Wickramasinghe. Wickramasinghe, an “agnostic Buddhist” physicist from the United Kingdom, had just coauthored a book with famed physicist Fred Hoyle. Hoyle, a maverick in many areas, was the last prominent holdout against the big bang model for the origin of the universe, advocating instead an infinitely old universe in a “steady state.” In 1981 Hoyle and Wickramasinghe coauthored *Evolution from Space: A Theory of Cosmic Creationism*,<sup>48</sup> a book that proposed the natural origin of life on Earth and the major transitions in evolution were so improbable as to be effectively impossible. The book suggested instead that genetic material, apparently produced by some kind of cosmic intelligence embedded in the structure of the universe, rained down to Earth from space. This was supposed to have somehow produced the origin of life as well as the major evolutionary transitions.<sup>49</sup> In Arkansas, Wickramasinghe said

[t]hat the probabilities of upward change by chance combination of the new bacteria with current life forms was so infinitely tiny that he and Hoyle had to postulate the idea that the “intelligent designer” arranged the times and places at which the interstellar bacteria would arrive on earth so that it would cause upward change.

But Wickramasinghe’s testimony was a mixed blessing for the creation science advocates; apart from Geisler’s UFO statement, the most-remembered statement from a witness for the creation science side seems to be Wickramasinghe’s admission that “no rational scientist” would accept a young earth and a global flood.<sup>50</sup>

However, these “gotcha” moments were not key to Judge Overton’s conclusions in his decision. When the trial testimony and Judge Overton’s decision are reviewed, it becomes apparent that several points sunk the defense case. One was Overton’s definition of science,<sup>51</sup> but numerous other points were significant. Overton noted that the unusual ideas of Wickramasinghe and others had not been published in peer-reviewed journals, and that the

creationist tactic of using negative objections to evolution as positive evidence for creation constituted a “contrived dualism.”

These findings rebutted the defense’s positive argument that “creation science” was science and not religion. More important, though, was the plaintiffs’ positive argument that creation science was a specific religious view. This was established through testimony that noted that views like a young earth, global flood, and sudden creation of humans and other “kinds” of organisms were derived from a particular literalist reading of the book of Genesis that, as a historical matter, was closely tied to Christian fundamentalism.

A particularly severe problem for the creation scientists was the lack of religiously neutral educational materials that Arkansas teachers could use to teach creation science. The topic of educational materials comes up again and again in the briefs and trial testimony, and occupies a major section of Overton’s decision. There were only a few creation science texts even potentially usable in a classroom, and each had significant religious material and/or educational problems.<sup>52</sup> Overton concluded that educators were “unable to locate one genuinely scientific article or work which supported” creation science, that they rightly found “the creationists’ textbook material and teaching guides unacceptable,” and that “[t]he defendants did not produce any text or writing in response to this evidence which they claimed was usable in the public school classroom.” Overton, thus dismissing the creationists’ scientific/educational case, added this negative finding to the positive finding that creation science constituted a specific religious view, and concluded, “[s]ince creation science is not science, the conclusion is inescapable that the only real effect of Act 590 is the advancement of religion.”<sup>53</sup>

## THE BEGINNINGS OF ID

After the defeat in *McLean*, creationists took heart in the fact that they had a second chance in the courts: Louisiana’s Balanced Treatment for Creation Science and Evolution-Science in Public School Instruction Act. Many of the apparent mistakes that doomed the Arkansas litigation were avoided in Louisiana. For starters, on May 28, 1981—the day after the ACLU filed suit in Arkansas—the Louisiana legislature stripped from the bill references to a

young earth and global flood. Second, Wendell Bird was deputized by the Louisiana attorney general to be the attorney of record on the case, and was backed by the Creation Science Legal Defense Fund. Finally, Bird and the creationists “stole a march”<sup>54</sup> on the ACLU in Louisiana. On December 2, 1981—a day before the ACLU filed suit—Bird and the creationists filed their own lawsuit, as plaintiffs, to force the state to enforce Louisiana’s law.<sup>55</sup> These moves meant that the creationist lawsuit would have to be resolved first, putting the creationists in the plaintiffs’ driver’s seat and guaranteeing years of litigation during which the creationists could perfect their case.

It was in this heated atmosphere that we can begin to trace the origin of ID in its proper context. The first public announcement of the *Pandas* project I have found appears in the Fall 1981 issue of the creationist student newspaper *Origins Research*. Beneath a prominent headline discussing the then-ongoing litigation—“Lawsuit prospects dim in Arkansas, bright in Louisiana”—appears a short announcement, titled “Unbiased biology textbook planned.” It states, “[a] high school biology textbook is in the planning stages that will be sensitively written to ‘present both evolution and creation while limiting discussion to scientific data.’ Dr. Charles B. Thaxton is science advisor to the project. . . . The author selected is a teaching biologist with two McGraw-Hill books in print.”<sup>56</sup> This is clearly an early announcement of what would eventually become the “intelligent design” textbook *Of Pandas and People*. A similar announcement was published in the August/September 1981 newsletter of the American Scientific Affiliation (ASA):

Meanwhile, Charles B. Thaxton is beginning to work on the biology textbook situation. Charlie has just moved from Probe Ministries “down the road a piece” to the Foundation for Thought and Ethics, founded by Jon Buell, who had also been with Probe. The Foundation wants to produce “a sensitively written high school biology textbook that presents both evolution and creation while limiting discussion to scientific data.” Charlie, as science adviser to the project, hopes to draw together an editorial board made up of both creationists and evolutionists. The author selected is “a teaching biologist who is a committed Christian, with two McGraw-Hill books in print.”<sup>57</sup>

The players at this juncture will be introduced in turn.

## Probe Ministries and Jon Buell

Probe Ministries is a Dallas-based ministry founded in the fall of 1973 by Jon Buell and Jim Williams, both previously employees of Campus Crusade for Christ.<sup>58</sup> According to Williams, Probe's purpose was to address "the seemingly irreconcilable gap in the minds of most college students and between biblical Christianity and their class studies." Early projects included campus presentations and forums (over 1000 presented by 1976), and summer camps for students about to enter college, "to prepare conferees for the secular biases they will encounter in college... and to provide training in witnessing and how to act on biblical concepts."<sup>59</sup> Another early project was the Christian Free University Curriculum, a series of short books presenting conservative evangelical positions on the Bible, science, morality, miracles, and other topics. Noteworthy products of the series include Buell's first book, a 1978 apologetics work titled *Jesus: God, Ghost or Guru?*; the 1977 *Fossils in Focus* by J. Kerby Anderson and Harold Coffin (a young-earth creationist and future *McLean* witness); the 1980 book *The Mysterious Matter of Mind* by old-earth creationist anthropologist Arthur C. Custance; the 1981 *The Necessity of Ethical Absolutes* by Erwin Lutzer; Norman Geisler's 1982 *Miracles and Modern Thought*; and the 1984 *Natural Limits to Biological Change*, by Lane Lester (a young-earthier and CRS member) and Ray Bohlin (an old-earthier).<sup>60</sup>

## Charles Thaxton

In 1980, Charles Thaxton was on the staff of Probe Ministries, as well as on the faculty of the Center for Advanced Biblical Studies in Dallas.<sup>61</sup> His jobs at Probe included lecturing, as well as editing the above-mentioned books by Custance, Lutzer, and Geisler.<sup>62</sup> In August 1970, Thaxton earned a PhD in physical chemistry at Iowa State University for a dissertation on x-ray crystallography. According to Walter Hearn of the ASA, who was on Thaxton's committee, Thaxton "dumbfounded" some of his professors by immediately traveling to the L'Abri Fellowship in Switzerland to study with theologian Francis Schaeffer.<sup>63</sup> In 1981, *Newsweek* called Schaeffer "the guru of fundamentalists,"<sup>64</sup> and many evangelical thought leaders cite Schaeffer's works or visits to Switzerland as key steps in their own development: "It was Schaeffer who first made evangelicals

aware of the culture war... no writer did more to activate and politicize evangelicals."<sup>65</sup> A prominent theme of Schaeffer's theology was that "evangelicals should apply a biblical worldview to every department of life."<sup>66</sup>

Thaxton met his future wife at L'Abri, and upon returning to the United States he spent two years at Harvard as a postdoctoral researcher in the history of science. While there, the only piece he published was a letter in *Pensee on Velikovsky*, an infamous catastrophist journal reviled by the scientific community. Thaxton complained of the scientific community's bias toward uniformitarianism and the "quite disturbing question of why a man eminently qualified should be held in the highest form of contempt by being ignored."<sup>67</sup> In the fall of 1973 Thaxton was back doing a postdoc in physical chemistry,<sup>68</sup> but in the fall of 1976 he joined the staff of Probe Ministries. In 1977 Thaxton began work on a book discussing the origin of life,<sup>69</sup> originally intended for the Christian Free University Curriculum series.<sup>70</sup> The project, originally titled *Life: The Crisis in Chemistry*, grew beyond these boundaries and was taken up by FTE in 1981. This eventually became the 1984 book *Mystery of Life's Origin*, coauthored by Thaxton, Walter Bradley, and Roger Olsen—three old-earth creationists.<sup>71</sup>

## The Foundation for Thought and Ethics

The Foundation for Thought and Ethics (FTE), founded by Jon Buell, is the nonprofit think tank that gave birth to intelligent design. FTE was intended to be a Probe-like group that could produce materials that would be secular enough to get taken seriously in forums like universities and the public schools, whereas materials from a group with an obvious evangelism mission, like Probe Ministries, would experience difficulties.<sup>72</sup> However, Buell seems to have had trouble separating the secular from the sacred. According to FTE's "Articles of Incorporation," filed with the state of Texas on December 5, 1980,

The primary purpose [of FTE] is both religious and educational, which includes, but is not limited to, proclaiming, publishing, preaching, teaching, promoting, broadcasting, disseminating, and otherwise making known the Christian gospel and understanding of the Bible and the light it sheds on the academic and social issues of our day.<sup>73</sup>

When questioned during the *Kitzmiller* case, Thaxton and Buell seemed surprised to discover that these statements were in FTE's "Articles of Incorporation." Thaxton was not a founder of FTE, and might well have been ignorant, but Buell's legally binding signature is on the documents, submitted to the government to obtain the tax exemptions that accrue to a registered nonprofit. Buell responded that the statements were "boilerplate" and that the attorney and accountant who prepared the documents got it wrong. Eric Rothschild, the exasperated attorney for the plaintiffs, asked, "So the accountant got it wrong and the attorney got it wrong?" Buell responded, "It's true."<sup>74</sup>

Even if Buell's explanation of FTE's "Articles of Incorporation" is given the benefit of the doubt, other documents cannot be explained away as attorney-derived boilerplate. A promotional statement in FTE's nonprofit application to the IRS, titled "What Is the Foundation for Thought and Ethics?" describes FTE's goals:

Someone has rightly said, "If you wish to alter the destiny of a people, you have only to alter its ideas; actions are the blossoms of thought." The Foundation for Thought and Ethics has been established to introduce Biblical perspective into the mainstream of America's humanistic society, confronting the secular thought of modern man with the truth of God's Word.

Nearing completion, our first project is a rigorous scientific critique of the theory of prebiotic evolution. Next, we will develop a two-model high school biology textbook that will fairly and impartially give scientific evidences for creation side by side with evolution. (In this case Scripture or even religious doctrine would violate the separation of church and state.) A credentialed author team and a consulting editorial board of scholars are being assembled for the project. The manuscript will be placed with a secular textbook publisher for publication.

The Foundation's future projects will include publications on a wide range of topics, each vital to shaping the course of our nation's future. Operating primarily as a Christian think tank, the Foundation emphasizes first, publishing, and second, lectures and seminars. 95% of what the Christian press publishes is written to Christians. We've been talking to ourselves! Through the work of the Foundation, Christians are challenged to make their voice and view heard in the published arenas of discourse where the opinion leaders of society must give them genuine consideration.<sup>75</sup>

This document makes it clear that what was intended to be secular about FTE was not its mission, but its intended audience. With FTE, Buell wanted to escape the usual audience of evangelical ministries—evangelical Christians—and take the biblical evangelical worldview to secular audiences. Rather than "talking to ourselves," Buell wanted to talk to the "opinion leaders of society," secular academics and public school educators. *Mystery of Life's Origins* would do this for university audiences. The "two model high school biology textbook"—which became the 1989 *Of Pandas and People*—would do this through balanced treatment of creation and evolution.

### FTE and the Creation Science "Two-Model" Approach

After the 2005 discovery that creationist terminology had been used instead of "intelligent design" in early *Pandas* manuscripts, Buell and Thaxton claimed that FTE's usage of "creation" meant something substantially different than creationism or creation science. In his *Kitzmiller* deposition, Thaxton said, in a passage now widely quoted in Discovery Institute propaganda,

[W]e were trapped by the vocabulary that we were given, and the culture was talking about creation and evolution, God and the supernatural and natural. . . . We weren't comfortable—at least I wasn't comfortable with the typical vocabulary that for the most part creationists were using because it didn't express what I was trying to do. They were wanting to bring God into the discussion, and I was wanting to stay within the empirical domain and do what you can do legitimately there. . . .<sup>76</sup>

Buell also argued that the "creation" originally advocated by FTE was something very different from the creationism of creation scientists. During his testimony in the *Kitzmiller* case, Buell claimed that the term "creation" in the drafts of *Pandas* was "just a place holder term until we came to grips with which of the plausible two or three terms that are in the scientific literature we would settle on. And that was the last thing we did before the book was . . . sent to the publisher."<sup>77</sup> Buell added, "[t]here was a new position that was being determined through dense extensive interaction between scientists and philosophy [of] science. We knew that it was fundamentally different from

creation science." As evidence, Buell claimed that "we, on our own dime, flew to Little Rock, Arkansas, after *McClain* [*sic*] went down, and tried to appeal to the Attorney General not to appeal the verdict, because we felt that it was wrong—wrong minded."<sup>78</sup> Buell also claimed the same for the Louisiana bill: "[W]e flew to Atlanta, we met with the attorney, the lead attorney. We tried to persuade him to drop creation science."

Buell's claim about encouraging Arkansas attorney general Steve Clark not to appeal the *McLean* decision is corroborated by Geisler, who himself, though a major supporter of the creation science bills, thought that appealing *McLean* would just make the situation worse: "[f]ew creationists were ultimately disappointed that the decision was not appealed."<sup>79</sup> I have not been able to corroborate Buell's claim about FTE's lobbying against the *Edwards* case. The attorney in Atlanta is obviously Wendell Bird, who lived there at the time. It is possible that FTE lobbied against the Louisiana case at some point, perhaps when the legal situation became dire, but it seems extremely unlikely that it did so early on, or on the basis of a principled stand against creation science.<sup>80</sup> This conclusion is supported by Geisler's account:

The [*McLean*] case was never appealed, since Jon Buell of the Dallas-based Foundation for Thought and Ethics, which eventually produced a textbook (*Of Pandas and People*) for teaching creation alongside evolution in public schools, requested that the Arkansas attorney general not appeal the case. The Foundation believed that a similar law that had been enacted in Louisiana was better worded, had less baggage, could be better argued, and, therefore, had a better chance of success when appealed to the Supreme Court.<sup>81</sup>

At least in 1982, FTE was not against creation science generally, but only against appealing the hopeless Arkansas case, in the hopes that the Louisiana case would turn out better. And there is plenty of evidence that Buell and Thaxton initially favored the "two model" and "balanced treatment" approach that had been widely promoted by the creation scientists in the 1970s and early 1980s. Rather than exhibiting substantial disagreement with the creation science approach, they thought they could do a better job at producing something that would be viable in the courts. In the June/July 1982 *ASA Newsletter*,

which contained an extensive wrap-up on the *McLean* trial, comments from FTE were relayed:

Jon Buell and Charlie Thaxton at Foundation for Thought and Ethics in Richardson, Texas, are trying to put the pieces back together in yet another way. They are producing "a sound biology textbook to banish all the misconceptions about teaching creation by demonstrating how it can be taught rationally and with scientific and constitutional integrity." They think that if the textbook they have in mind had been written before the Little Rock trial, "it would have disarmed the ACLU of virtually all of their allegations."<sup>82</sup>

There is no indication here that Buell and Thaxton thought they were working on something "fundamentally different" from creation science. Instead, they were announcing to the world that they were supporting the two-model creation science approach by producing the constitutional two-model textbook the *McLean* defense had lacked. In a February 1982 essay, Thaxton tells the same story. After a byline explaining that Thaxton "is an advisor to a project to publish a high school biology textbook sensitive to both evolution and creationism," Thaxton writes,

I favor two-model creation/evolution teaching of origins, because I believe it is the best way to teach about events in the past which are unique and therefore, cannot now be observed, repeated or directly tested.<sup>83</sup>

There is no hint in the essay that Thaxton thinks that there is a problem with creation science—which certainly seems like it might be a pertinent topic if it was troubling him, given the litigation ongoing as the essay was being written. Instead, in the body of the essay, Thaxton offers a courtroom analogy for his two-model position. Essentially his argument is that origins events, like crimes, are unique and not replicable, and thus it is unfair for only one side to have a say. As in a courtroom, each side should be allowed to make its case, and the members of the jury (i.e., the students) can make up their own minds. This is the same sentiment expressed in Geisler's testimony about "forensic medicine." The courtroom analogy later reappeared in *The Mystery of Life's Origin* and the *Pandas* drafts. The essay concludes,

One need not share the creationists' view to be in favor of introducing a two-model approach into the classroom. Davis and Solomon sum it up as follows:

"We cannot imagine that the cause of truth is served by keeping unpopular or minority ideas under wraps. . . . Specious arguments can be exposed only by examining them. Nothing is so unscientific as the inquisition mentality that served, as it thought, the truth, by seeking to suppress or conceal dissent rather than by grappling with it." (P. William David [*sic*] and Eldra Pearl Solomon, *The World of Biology*, 2nd ed. [New York: McGraw-Hill, 1979], p. 610)<sup>84</sup>

Although Thaxton appears to be quoting just another standard biology textbook in his conclusion, this is not quite the case. The editions of *The World of Biology* coauthored by Percival William Davis (first edition 1974) were celebrated by creationists. They were unique in that the evolution section (pp. 409–17) is actually presented in a two-model style. The standard lines of evidence for evolution are put forward, but they are countered with standard creationist counterarguments, including a full-page picture of the bombardier beetle, a creationist favorite, complete with the irreducible complexity argument (from the caption: "Since neither the peroxide nor the catalyst is useful by itself, the creationist asks from what beginnings the beetle's present mechanism could have evolved"). Davis's textbook was celebrated as a rare success in creationist circles, cited widely in legal arguments for the two-model approach, and was exhibited by Wayne Frair at the 1974 meeting of the board of directors of the Creation Research Society.<sup>85</sup>

### Percival William Davis

Sharp readers may recall that the initial 1981 announcement of the *Pandas* project mentioned that the author was to be a McGraw-Hill textbook author. This is, of course, a reference to Davis. In proto-ID and ID literature, Davis is universally described as a textbook author and college instructor. What is left tactically unsaid is that Davis was a member of the Creation Research Society and a published contributor to its journal, the *Creation Research Society Quarterly*,<sup>86</sup> and that he is a strict young-earth creationist who to this day teaches flood geology at a fundamentalist Bible college in Florida.<sup>87</sup> Davis also coauthored several editions of a creation science book, *The Case for Creation*,

with *McLean* witness Wayne Frair.<sup>88</sup> Davis was an odd choice for FTE to make if it was deeply convinced that its textbook project was about something "fundamentally different" from creation science.

### Dean Kenyon

Buell and Thaxton soon recruited a second author for the *Pandas* project: Dean Kenyon. Kenyon, too, is an odd choice if FTE had something "fundamentally different" from creation science in mind. Starting in the 1990s, Kenyon has been described in ID circles as a top origin-of-life researcher who saw the light and became an early leader in the intelligent design movement with his authorship of a foreword to *Mystery of Life's Origin*, his contribution to *Pandas*, and his victory in a 1993 dispute at San Francisco State over his right to devote a portion of his courses to intelligent design, over the objections of the biology department.<sup>89</sup>

Again, selective omission has distorted the picture. Kenyon was indeed an origin-of-life researcher and coauthored a well-regarded book on the topic, *Biochemical Predestination*, in 1969. But when he changed his views in the mid-1970s, he didn't exactly become an advocate of a sophisticated ID view; he became a strict Bible-based young-earth creationist. According to a December 1980 article in the *San Francisco Examiner*, Kenyon's position was that "[i]n the relatively recent past—10,000 to 20,000 years ago—the entire cosmos was brought into existence out of nothing at all by supernatural creation." Kenyon added that there are "no errors in the Bible." Kenyon's department limited him to spending only 5 percent of his class on creationism, but Kenyon told the paper that "[i]f I were to dream about it, I would [want] a 50–50 split." The article includes a large photo of Kenyon holding up Henry Morris's *Scientific Creationism* (general edition).<sup>90</sup>

Another inconvenient fact that is systematically obscured in ID-sympathetic histories is Kenyon's interesting activity in the legal arena. During the *McLean* trial, Kenyon was scheduled to testify for the defense and probably would have been the creationists' star expert witness in the trial. Kenyon actually flew to Arkansas to testify but "fled town after watching the demolition of four of the state's witnesses on day 1 of the second week."<sup>91</sup> According to *Christianity Today*, Kenyon left under the encouragement of Wendell Bird, who told

several creationist experts, “I don’t think you should jeopardize your reputation with the way [the trial] is being handled.” Attorney General Clark said that he considered legal action against Bird for his interference.<sup>92</sup>

### The Louisiana Litigation

Bird clearly wanted to “save” Kenyon for the Louisiana case. In preparation for his then-expected trial, Bird listed Kenyon as an expert, as well as future *Mystery* author Walter Bradley and *McLean* experts Wickramasinghe and Morrow.<sup>93</sup> Experts were deposed in preparation for the trial.<sup>94</sup> Unfortunately, in June 1982, Bird’s lawsuit was dismissed,<sup>95</sup> giving the initiative to the ACLU’s lawyers. A complex sideshow delayed consideration of constitutional matters until 1984. At that point, the ACLU filed for a summary judgment against the Louisiana bill, arguing that no possible trial testimony could save the law. Bird assembled five expert witness affidavits and a massive supplementary brief, hundreds of pages long, in support of the contention that a trial was necessary to show that creation science was science and therefore teaching it did not have a primarily religious purpose or effect. Kenyon was again recruited, this time to write the lead affidavit.

Kenyon’s affidavit, signed on September 17, 1984, represented the essence of the “creation science” that Wendell Bird wanted to put before the court. Kenyon’s definition of creation science is slightly unusual:

Creation science means origin through abrupt appearance in complex form, and includes biological creation, biochemical creation (or chemical creation), and cosmic creation. [...] Creation science does not include as essential parts the concepts of catastrophism, a world-wide flood, a recent inception of the earth or life, from nothingness (ex nihilo), the concept of kinds, or any concepts from Genesis or other religious texts.<sup>96</sup>

The affidavit then argues for “abrupt appearance” along the lines of classic creation science objections to evolution—gaps in the fossil record, complexity and genetic information, the improbability of the origin of life, and the rest. Kenyon’s definition was concocted purely in order to make it difficult for a court to link the Louisiana bill to the Bible. As Kenyon’s 1980 inter-

view showed, he actually did believe that the various items denied in his affidavit were part of creation science. Wendell Bird, closely associated with the ICR, certainly believed these things as well. Nevertheless, for legal purposes, Bird, Kenyon, and the Creation Science Legal Defense Fund were all willing to disavow the usual tenets of creation science—up to a point. A close reading of the definition shows that while a young-earth, global flood, and the rest are not necessarily part of creation science, they are not necessarily excluded from creation science, either. Nowhere does Kenyon say the only scientific respectable thing in this situation, namely, “the young-earth, global flood view is as false as the view that the Earth is flat.” Instead, a studied agnosticism is maintained, at least in front of the courts.

Kenyon’s affidavit also mentions that creation science now can meet the objection the ACLU raised in the *McLean* case—the lack of educational materials appropriate for public schools:

[B]alanced presentation of creation science and evolution is educationally valuable, and in fact is more educationally valuable than indoctrination in just the viewpoint of evolution. Presentation of alternate scientific explanations has educational benefit, and balanced presentation of creation science and evolution does exactly that. Creation science can indeed be taught in the classroom in a strictly scientific sense, and a textbook can present creation science in a strictly scientific sense, either as a supplement or as part of a balanced presentation text.<sup>97</sup>

Conveniently enough, in 1984, Kenyon just happened to already be a coauthor on a supplemental textbook that allegedly offered just such a balanced presentation—the prototype of *Pandas*.

### THE PROTOTYPE PANDAS DRAFT

The first known draft of *Pandas*, titled *Creation Biology Textbook Supplement*, was produced by Davis and Kenyon in 1983.<sup>98</sup> In Buell’s response to *Kitzmilller*, he made some categorical statements about the *Pandas* drafts in support of his contention that ID was not creationism:

Was there a systematic replacement in *Pandas* manuscripts of the words “creationism,” “creationist,” and “creation” with the term “intelligent design,” as alleged? Let’s look at the three terms one at a time. Neither “creationism” nor its synonym, “Creation Science,” was ever used in any *Pandas* manuscript, as alleged. Although they differ by only one letter, “creationist,” is not a variant of “creationism”; it is a variant of “creation,” a modifier that means “of the viewpoint of creation.” When we began work on the book, we agreed that if we couldn’t make a convincing empirical case, we would not go forward. But during the roughly five years the manuscript was being written, we used the word “creation” and sometimes “creationist” as placeholder terminology. The complete absence of manuscripts or portions of manuscripts teaching the tenets of the six-part description of Creation Science is eloquent evidence that this and only this is why those two words are sprinkled throughout old drafts.<sup>99</sup>

The Discovery Institute’s Casey Luskin has echoed these arguments in a post-*Kitzmiller* campaign to try to explain away the creationist language in the *Pandas* drafts. According to Luskin, “When certain pre-publication drafts of *Pandas* used terms such as ‘creation’ and ‘creationist,’ they used them in a way that rejected ‘creationism’ as defined by the courts and popular culture.”<sup>100</sup>

Even if one has the saintlike innocence that would be required to believe that “creationists” advocating “creation” were talking about something “fundamentally different” from “creationism,” the evidence from *Creation Biology* does not match the *Pandas* apologists’ claims. Not only was *Creation Biology* written by two committed creation scientists, one of whom was at the time actively involved in defending creation science in court, but the draft textbook actually does refer to “creation science.” Some passages will illustrate:

- What does creation science make of all this?<sup>101</sup>
- If the conventional timetable of billions of years is correct (many creationist scientists do not accept this timetable) then life may have been on Earth for about 4 billion years, when abundant fossil life presumably began about 600 million years ago (the approximate beginning of the Cambrian Period).<sup>102</sup>
- Now let us assume that instead of being billions of years old, the Earth is actually only 10,000–20,000 years old as many creationist scientists have concluded.<sup>103</sup>

- We do hope your main textbook contained a discussion of crossing-over. It’s hard enough writing a creation science book without having to write an elementary biology book at the same time!<sup>104</sup>

The claim that the *Pandas* drafts avoided the six-part description of creation science used in the *McLean* case, which ID advocates represent as a “strict” definition of creationism—a global flood, young Earth, and so on—is also dubious. As the reader can see in the above quotes, *Creation Biology* actually does treat the young-earth view as if it had scientific validity. For that matter, so does the published, “intelligent design” version of *Pandas* (cited near the beginning of this chapter)! The term “creationism” and the “strict” creation science concept of “special creation” are also found in *Creation Biology*. For instance:

One of the criticisms advanced against creationism embodies this very point: which creation story shall we consider to be the true one? Yet it seems to us that if creation by an intelligent entity is taken to be the kernel of creationism, then the most fundamental postulate of creationism must be that species were originally created as species, which immediately raises the questions of just which ones, how many of them, and when?

One might think that some higher taxonomic category might have been the original unit of creation—the genus, perhaps, or the family or even the phylum. Yet this begs the question. Categories of classification are for the most part artificial; indeed the surprising thing is that there is as much agreement among taxonomists as does exist. As it is, there are minor invertebrate phyla all of whose contained species number scarcely more than a dozen. If there were but a single species that could be considered to belong to that phylum, still, a species it would be. There can therefore be no doubt that if, indeed, a creator produced phyla initially, those phyla would contain specially created species. The original species were created, if creationism is true at all.<sup>105</sup>

This passage may seem familiar to some readers. Compare it to the published version of *Pandas*:

With respect to the existence of a single, unified modern theory of intelligent design, holders of this view point out that, while there are difficulties that need to be worked out, all adhere to the same fundamental aspects. Most signifi-

cantly, all design proponents hold that major groups of organisms had their own origins. While there is diversity among design proponents, it is not unlike the diversity among Darwinists with respect to modern evolutionary theory.

What unit of classification was originally designed? Was it the species, or genus, or family, or even the phylum? Some Darwinists insist that those who hold true design must be able to answer this question. In point of fact, the question is irrelevant, because categories of classification are largely artificial, human groupings. [...] Indeed, it is surprising that taxonomists agree as much as they do. There are minor invertebrate phyla which contain not more than a dozen species. It is theoretically possible that a phylum and a species can be identical; a phylum could contain only a single species. [...] In any case, there can be no doubt that if a designer produced phyla initially, those phyla must contain specially fashioned representatives, or species.<sup>106</sup>

The creationists, and the intelligent design advocates, like to claim that evolution only occurs within strict limits. In biology, this is false; but in the evolution of creationism, it applies in spades.

## CONCLUSION

This chapter has only explored the beginnings of the story of the emergence of *Pandas* and intelligent design. Even so, it is apparent that various key features of ID, usually attributed to Phillip Johnson or other figures, were in place quite early. For example, the “big tent” for young-earthers and old-earthers was already in place by 1984. Indeed, the *Pandas* book was being written by two young-earth creationists, under the editorship of two old-earth creationists.

In light of this study, a reinterpretation of other pieces of ID mythology is clearly in order. Topping the list is *The Mystery of Life's Origins*. Was it really as revolutionary as modern ID advocates say? Briefly, my opinion is that it is yet another work within the two-model genre, and its primary “innovation” was to reincarnate the creationists’ hapless and much-ridiculed second law of thermodynamic argument in the form of an equally hapless technical argument about “information” and “specified complexity.”<sup>107</sup> The intuitive “information” argument was of course already present in Geisler’s *McLean* line about getting a dictionary from an explosion in a printshop.

The close intellectual relationship among Geisler, Thaxton, and proto-ID can be seen in many other places: another “new” concept in *Mystery*, the “origins science” versus “operation science” distinction, usually attributed to Thaxton, already existed in all but name in Geisler’s *McLean* testimony. Geisler expanded on the concept of “origins science” in the 1987 book *Origin Science: A Proposal for the Creation-Evolution Controversy*, after extensive discussions with Thaxton as well as Bradley, Kenyon, and Gish.<sup>108</sup> The “origins science” concept, relabeled as “historical science,” soon became a major plank in Stephen Meyer’s argumentation, for example, in his “Note to Teachers” in the second edition of *Pandas*.<sup>109</sup> From *McLean* through to *Pandas*, creationists/ID advocates have attempted to slice off a special “origins” category in order to create a kind of scientific ghetto where everything is speculative analogy, “theory not fact,”<sup>110</sup> and creation/design is just as good as evolution.

Appendix 1 of *Origin Science* is “Paley’s Updated Argument,” which closely paraphrases the famous watchmaker passage from *Natural Theology*, but substitutes Mount Rushmore for the watch. The appendix is essentially a reprint of Geisler’s 1983 article in *Creation/Evolution*, which attributes the Mount Rushmore argument to Thaxton.<sup>111</sup> (The “Mount Rushmore” argument is now an endlessly repeated ID talking point, even forming a central theme in the ID-skeptical documentary *Flock of Dodos* [Prairie Starfish Productions, 2006].) However, the earliest publication of the Mount Rushmore argument is actually in Geisler’s 1982 apologetics book on miracles.<sup>112</sup>

Continuing the theme of connection of proto-ID to the creation science litigation, appendix 4 of *Origin Science* reprints the dissenting opinion in the en banc appeal of the Louisiana Balanced Treatment Act, where the creationists lost by a narrow margin of 8 to 7 on December 12, 1985. Other connections between FTE and the *Edwards* litigation were investigated during *Kitzmiller*<sup>113</sup> and in other work, although much remains unexplored. Notably, the mysterious Ad Hoc Origins Committee, described in pro-ID histories as a academic group of “like-minded skeptics of evolution”<sup>114</sup> that formed the nucleus of the ID movement, actually originated because of the *Edwards* litigation. According to the *ASA Newsletter*, Thaxton’s 1988 proto-ID conference in Tacoma, Washington, sometimes described as where the theory of ID was founded,<sup>115</sup> actually “had its origin in a 1986 gathering of a group whose advice on scientific and educational matters was sought by members of the

Christian Legal Society being drawn into public policy disputes in the courts,” the “Ad Hoc’ meeting.”<sup>116</sup> On June 19, 1986, the Christian Legal Society and National Association of Evangelicals submitted an amicus brief to the Supreme Court in support of the Louisiana Balanced Treatment Act.<sup>117</sup> The Counsel of Record was Michael Woodruff, who was a member of the Ad Hoc Committee, and who would later write an eleven-page “legal scrutiny” of *Pandas* and determine that it was constitutional under *Edwards*.<sup>118</sup>

The evolution of *Pandas* between 1984 and 1989, and 1989 and 1993, also needs further exploration. After *Kitzmiller*, attempts to distance *Pandas* from creationism and ID from *Pandas* have been on the increase. However, these attempts are hopeless. For example, another author of *Pandas*, Nancy Pearcey, was brought on to the project around 1988 to write the overview chapter. Pearcey was a longtime editor of the *Bible-Science Newsletter*, a young-earth creationist newspaper considered unsophisticated even by other creationists;<sup>119</sup> in 1989 she published creationist versions of most of the overview chapter in three articles in the *Newsletter*.<sup>120</sup> Many other “Critical Reviewers” on *Pandas* were young-earth creationists: John Baumgardner, Harold Coffin (of *McLean* fame), L. James Gibson, Paul Nelson, and Kurt Wise. Many others were old-earth creationists. Notables include Ray Bohlin, Walter Bradley, Norman Geisler (of *McLean* fame), Stephen Meyer, Gordon Mills, J. P. Moreland, Alvin Plantinga, and John Wiester. As for distancing ID from *Pandas*, Stephen Meyer’s chapter of *Pandas* is posted in multiple locations on the Discovery Institute’s Web sites and various other ID sites; and six *Pandas* coauthors are ID fellows, including Kenyon, Thaxton, Pearcey, Meyer, and Hartwig. The sixth is Michael Behe, who is strangely enough not listed as an author on *Pandas*, even though he wrote pages 141–46 of the second edition of *Pandas* in 1993. The section is on blood-clotting and presents Behe’s irreducible complexity argument (but not the actual term). Behe’s coauthorship was unknown until the *Kitzmiller* case, when a close reading of *Pandas* turned up the extremely close textual similarities to chapter 4 of Darwin’s *Black Box*. All of the other major ID figures not already mentioned (including Phillip Johnson, William Dembski, and Jonathan Wells) have explicitly endorsed *Pandas* in print on FTE’s Web site or elsewhere.

These topics, dealing with matters after 1989, while interesting, are not going to change the big picture of the origins of ID. The political/legal

strategy of “creation science” collapsed suddenly in 1981–1982. The next legal strategy was to strip down creation science to make it appear even less sectarian than before. When the stripped-down creationism strategy failed in *Edwards*, a few creationists decided to try again with a new label, and that is why “intelligent design” is the term on our lips today.

## ACKNOWLEDGMENTS

I would like to thank Robert T. Pennock, Glenn Branch, and Barbara Forrest for help improving this essay through many comments; and Ted Davis and Susan Spath for useful discussions.

## NOTES

1. *McLean v. Arkansas Board of Education*, 529 F.Supp 1255 (E.D.Ark. 1982).
2. E. J. Larson, *Trial and Error: The American Controversy over Creation and Evolution* (New York: Oxford University Press, 2003).
3. *Edwards v. Aguillard*, 482 US 578 (S.Ct. 1987).
4. M. Ruse, *But Is It Science?: The Philosophical Question in the Creation/Evolution Controversy* (Amherst, NY: Prometheus Books, 1996).
5. For examples, see the various pages returned as results from a Google search of the Discovery Institute Web site on the phrase “Intelligent design is not creationism” (19 hits returned in April 2007). The argument over this issue can also be found throughout the *Kitzmiller* briefs and expert witness reports, available online at <http://www2.ncseweb.org/kvd/>.
6. Dover Area School District, “Biology Curriculum Press Release,” [http://www2.ncseweb.org/kvd/exhibits/DASD/2004-11-19\\_DASD\\_press\\_release\\_Biology\\_Curriculum.pdf](http://www2.ncseweb.org/kvd/exhibits/DASD/2004-11-19_DASD_press_release_Biology_Curriculum.pdf) (accessed March 30, 2007).
7. The president of the Foundation for Thought and Ethics (FTE), the think tank that produced *Pandas*. Buell and FTE will be introduced later in the essay.
8. The preface, along with several other sections of the book, was publicly posted on the Web site of ID leader William Dembski in 2004. The book, to be titled *The Design of Life: Discovering Signs of Intelligence in Biological Systems*, has been promised for several years, but has not yet been published. FTE fund-raising letters indicate

that the necessary funds are still being gathered. The 2004 version of *Design of Life* lists Behe, Davis, Dembski, Kenyon, and Wells as authors, however in his 2005 deposition for the *Kitzmiller* case, Behe denied being an author on the revised edition. New descriptions of the book posted at Dembski's overwhelmingevidence.com Web site in 2006 indicate that only Dembski and Wells are authors. Dembski has been FTE's academic editor since at least 2002, according to an FTE fund-raising letter.

9. J. Buell, preface, in *The Design of Life: Discovering Signs of Intelligence in Biological Systems*, ed. M.J. Behe, Percival Davis, William A. Dembski, Dean H. Kenyon, and Jonathan Wells (Richardson, TX: Foundation for Thought and Ethics, 2004), pp. iv–vi.

10. For documentation of parallels, see B. Forrest, Expert Witness Report, Plaintiffs, *Kitzmiller v Dover*, Middle District of Pennsylvania, 04-CV-2688: 1-49, [http://www2.ncseweb.org/kvd/all\\_legal/2005-03\\_expert\\_witnesses/2005-04-01\\_Forrest\\_Ps\\_expert\\_report\\_readable.pdf](http://www2.ncseweb.org/kvd/all_legal/2005-03_expert_witnesses/2005-04-01_Forrest_Ps_expert_report_readable.pdf); N.J. Matzke and P.R. Gross, "Analyzing Critical Analysis: The Fallback Antievolutionist Strategy," in *Not in Our Classrooms: Why Intelligent Design Is Wrong for Our Schools*, ed. E.C. Scott and G. Branch (Boston: Beacon Press, 2006), pp. 28–56; and B. Forrest, "From 'Creation Science' to 'Intelligent Design': Tracing ID's Creationist Ancestry" (2006), [http://www.creationismstrojanhorse.com/Tracing\\_ID\\_Ancestry.pdf](http://www.creationismstrojanhorse.com/Tracing_ID_Ancestry.pdf) (accessed April 2007).

11. F. Sonleitner, "What's Wrong with *Pandas*?" (1994), <http://www.ncseweb.org/article.asp?category=21> (accessed March 30, 2007).

12. P. W. Davis, D. H. Kenyon, and C. B. Thaxton, *Of Pandas and People: The Central Question of Biological Origins* (Dallas, TX: Haughton Publication Co., 1993), p. 92.

13. *Ibid.*, p. 77.

14. Genesis 2:7, King James Version.

15. Davis et al., *Of Pandas and People*, pp. 99–100.

16. K. Padian, "Gross Misrepresentation," *Bookwatch Reviews* 2, no. 11 (1989), [http://www.ncseweb.org/resources/articles/9767\\_22\\_padian\\_1989\\_gross\\_misr\\_10\\_26\\_2004.asp](http://www.ncseweb.org/resources/articles/9767_22_padian_1989_gross_misr_10_26_2004.asp).

17. E. C. Scott, "New Creationist Book on the Way," *NCSE Reports* 9, no. 2 (1989): 21, [http://www.ncseweb.org/resources/articles/2279\\_31\\_scott\\_1989\\_new\\_creation\\_11\\_23\\_2004.asp](http://www.ncseweb.org/resources/articles/2279_31_scott_1989_new_creation_11_23_2004.asp).

18. M. Ruse, "They're Here!" *Bookwatch Reviews* 2, no. 11 (1989), [http://www.ncseweb.org/resources/articles/2216\\_23\\_ruse\\_1989\\_they39re\\_10\\_26\\_2004.asp](http://www.ncseweb.org/resources/articles/2216_23_ruse_1989_they39re_10_26_2004.asp).

19. R. T. Pennock, *Tower of Babel: The Evidence against the New Creationism* (Cambridge, MA: MIT Press, 1999), p. 293.

20. B. Forrest and P. R. Gross, *Creationism's Trojan Horse: The Wedge of Intelligent Design* (Oxford: Oxford University Press, 2004).

21. L. Krishtalka, "Don't Let Creationists Corrupt Science Standards," *Pittsburgh Post Gazette*, 2001, <http://www.post-gazette.com/forum/20010107edkristalka9.asp>.

22. The experts' witness statements were submitted in the spring of 2005 and are available at <http://www2.ncseweb.org/kvd/index.php?path=experts/>.

23. N. J. Matzke, "Design on Trial: How NCSE Helped Win the *Kitzmiller* Case," *Reports of the National Center for Science Education* 26, nos. 1–2 (2006): 37–44.

24. The exhibit numbers are taken from Clerk of the Court, E. Rothschild, S. G. Harvey, A. H. Wilcox, C. J. Lowe, T. B. Schmidt III, W. J. Walczak, P. K. Knudsen, A. Khan, R. B. Katskee, and A. J. Luchenitser, Clerk's Exhibit Listing for Plaintiffs, *Kitzmiller v. Dover*, Middle District of Pennsylvania, 04-CV-2688: 1–57, [http://www2.ncseweb.org/kvd/all\\_legal/2005-12-08\\_Ps\\_exhibit\\_list.pdf](http://www2.ncseweb.org/kvd/all_legal/2005-12-08_Ps_exhibit_list.pdf).

25. Plaintiffs' Exhibit-562, chap. 2, p. 14; chap. 2, p. 15. Emphasis added. Similar versions of this sentence can be found back to the 1986 *Biology and Creation*.

26. The charts are available online at <http://www2.ncseweb.org/kvd/index.php?path=exhibits/>.

27. Plaintiffs' Exhibit-567, chap. 3, p. 41.

28. Larson, *Trial and Error: The American Controversy over Creation and Evolution*; R. L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design* (Cambridge, MA: Harvard University Press, 2006).

29. There was both conflict and cooperation between Clark and the ICR, and the details are hard to resolve, since Bird and the ICR blamed Clark for the loss after the trial. On the other hand, Gish attended the trial and passed notes to the defense, and some of the *McLean* experts were later used by Bird in the Louisiana case. See N. L. Geisler, *Creation and the Courts: Eighty Years of Conflict in the Classroom and the Courtroom (With Never before Published Eyewitness Testimony from the Scopes Trial)* (Wheaton, IL: Crossway Books, 2007) for a summary of the Clark/Bird dispute.

30. *Ibid.*, p. 179.

31. *Ibid.*, p. 159; italics added.

32. *Ibid.*, p. 168.

33. *Ibid.*

34. *Ibid.*

35. *Ibid.*, p. 169.

36. *Ibid.*; bracketed "an" original.

37. R. Lewin, "Creationism on the Defensive in Arkansas," *Science* 215, no. 4258 (1982): 33–34.

38. Court transcripts of the defense case were never completed, because the decision was issued before the transcripts were finished, and the decision was not

appealed. Therefore, only the plaintiffs' testimony (the first half of the trial) is currently available (see the *McLean* Documentation Project at [http://www.antievolution.org/projects/mclean/new\\_site/index.htm](http://www.antievolution.org/projects/mclean/new_site/index.htm)). For the defense testimony, N. L. Geisler, A. F. Brooke II, and M. J. Keough, *The Creator in the Courtroom "Scopes II": The 1981 Arkansas Creation-Evolution Trial* (Milford, MI: Mott Media, 1982) is the most detailed account available, with the addition of Geisler, *Creation and the Courts*, which published for the first time the text of Geisler's testimony.

39. Geisler et al., *The Creator in the Courtroom "Scopes II,"* pp. 139–41; Geisler's paraphrase.

40. Morrow's puzzling position seems to have been that of a general contrarian. When cross-examined and asked about the flat-earth theory, Morrow said it "would be a very interesting model to teach" (R. M. Baum, "Science Confronts Creationist Assault," *Chemical & Engineering News* 60, no. 3 [1982]: 20).

41. Geisler et al., *The Creator in the Courtroom "Scopes II,"* pp. 125–26; Geisler's paraphrase.

42. In one contemporary account of the trial in *Creation/Evolution* (F. Edwards, "Victory in Arkansas: The Trial, Decision, and Aftermath," *Creation/Evolution* 3, no. 1 [1982]: 36, [http://www.ncseweb.org/resources/articles/8661\\_issue\\_07\\_volume\\_3\\_number\\_1\\_3\\_4\\_2003.asp#Victory%20in%20Arkansas](http://www.ncseweb.org/resources/articles/8661_issue_07_volume_3_number_1_3_4_2003.asp#Victory%20in%20Arkansas)), Helder is described as the vice president of the CRS. However, a search of the *CRS Quarterly* for December 1981 and surrounding dates indicates that others held this position. In the 1990s, Answers in Genesis and other creationist organizations describe Helder, who is still writing creationist articles, as the vice president of the CSSAA.

43. Geisler et al., *The Creator in the Courtroom "Scopes II,"* p. 142; Geisler's paraphrase.

44. *Ibid.*, p. 146.

45. *Ibid.*; Geisler's paraphrase. The ellipsis before "How did" is original to Geisler.

46. *Ibid.*, p. 147; Geisler's paraphrase.

47. Matzke and Gross, "Analyzing Critical Analysis: The Fallback Antievolutionist Strategy," pp. 28–56.

48. F. Hoyle and N. C. Wickramasinghe, *Evolution from Space: A Theory of Cosmic Creationism* (New York: Simon & Schuster, 1982). The original edition, with only the short title, was published in England in 1981.

49. The speck of science behind the bacteria-in-space claim was spectroscopic evidence of organic molecules in interstellar dust clouds. The existence of these organic molecules, which can form through simple reactions, is well accepted. How-

ever, there are numerous problems for bacteria-in-space, including the fact that cosmic radiation will kill anything not well shielded—a particularly severe problem over the millions of years required for interstellar drifting.

50. *McLean v. Arkansas* (1982).

51. Barry Gross was one of the philosophers who consulted on the *McLean* case. His article (B. R. Gross, "Commentary: Philosophers at the Bar—Some Reasons for Restraint," *Science, Technology & Human Values* 8, no. 4 [1983]: 30–38) gives some useful background on the behind-the-scenes discussions that resulted in the philosophy testimony that was presented to Overton. Strangely, this article is almost never cited in the numerous subsequent discussions of Laudan's critique of Ruse and Overton.

52. R. B. Bliss, *Origins: Two Models: Evolution, Creation* (San Diego, CA: Creation-Life Publishers, 1976); J. N. Moore and H. S. Slusher, *Biology: A Search for Order in Complexity* (Grand Rapids, MI: Zondervan Publishing House, 1970); H. M. Morris, *Scientific Creationism* (San Diego, CA: Creation-Life Publishers, 1974); see also *McLean v. Arkansas* (1982) for Overton's assessment.

53. *McLean v. Arkansas* (1982); emphasis in original.

54. Larson, *Trial and Error: The American Controversy over Creation and Evolution*, p. 166.

55. *Ibid.* The lawsuit with creationists as plaintiffs was *Keith v. Louisiana Department of Education*. The ACLU lawsuit was initially *Aguillard v. Treen*. Governor Edwards eventually succeeded Governor Treen, and the names are reversed on appeal, so the Supreme Court case is known as *Edwards v. Aguillard*.

56. "Unbiased Biology Textbook Planned," *Origins Research* 4, no. 2 (1981): 1.

57. "Life in the Bias Sphere," *Newsletter of the American Scientific Affiliation* 23, no. 4 (1981), <http://www.asa3.org/ASA/topics/NewsLetter80s/AUGSEP81.html>.

58. As a Campus Crusade for Christ trainee, Buell shared a room with the visiting guest lecturer Henry Morris at one point in the 1960s. H. M. Morris, *A History of Modern Creationism* (San Diego, CA: Master Book Publishers, 1984), p. 159.

59. E. Hatfield, "Probing the Campus," *Christianity Today* 20, no. 16 (1976): 42–44.

60. L. P. Lester, R. G. Bohlin, and V. E. Anderson, *The Natural Limits to Biological Change* (Grand Rapids, MI: Probe Ministries International, 1984). This book contains several instances of the term "intelligent design" and makes some specific arguments later taken up in *Pandas*, for example, a rebuttal to Stephen Jay Gould's argument about the panda's thumb appears in the book. The panda's thumb argument became the source of the title of *Pandas*.

61. "Scholarly Opportunities Abound," *Newsletter of the American Scientific Affiliation* 22, no. 2 (1980), <http://www.asa3.org/ASA/topics/NewsLetter80s/APRMAY80.html>.

62. "Personals," *Newsletter of the American Scientific Affiliation* 23, no. 3 (1980), <http://www.asa3.org/ASA/topics/NewsLetter80s/JUNJUL81.html>.
63. "First-Order Reflections of an X-Ray Diffractionist," *Newsletter of the American Scientific Affiliation* 12, no. 5 (1980), <http://www.asa3.org/ASA/topics/NewsLetter70s/OCT70.html>.
64. J. Budziszewski and D. L. Weeks, *Evangelicals in the Public Square: Four Formative Voices on Political Thought and Action* (Grand Rapids, MI: Baker Academic, 2006), p. 73.
65. Ibid.
66. Ibid., p. 74.
67. C. B. Thaxton, "Presuppositions and Catastrophism," *Pensée* 2, no. 2 (1972), <http://www.catastrophism.com/online/pubs/journals/pensee/ivr01/index.htm>.
68. Thaxton's scientific output in the 1970s consisted of several coauthored articles on physical chemistry; see C. B. Thaxton, "Curriculum Vitae," <http://www3.ksde.org/outcomes/sceptcvthaxton.pdf> (accessed July 2005).
69. L. Witham, *By Design: Science and the Search for God* (San Francisco, CA: Encounter Books, 2003), p. 116.
70. Implied in L. Witham, *Where Darwin Meets the Bible: Creationists and Evolutionists in America* (New York: Oxford University Press, 2002), p. 220.
71. C. B. Thaxton, W. L. Bradley, and R. L. Olsen, *The Mystery of Life's Origin: Reassessing Current Theories* (New York: Philosophical Library, 1984).
72. C. Thaxton, A. C. Wilcox, D. E. Boyle, and E. L. White III, July 19, 2005 Deposition of Charles Thaxton, *Kitzmiller v. Dover*, Middle District of Pennsylvania, 04-CV-2688: 62, [http://www2.ncseweb.org/kvd/depo/2005-07-19\\_deposition\\_Thaxton\\_escript.pdf](http://www2.ncseweb.org/kvd/depo/2005-07-19_deposition_Thaxton_escript.pdf).
73. FTE, "Articles of Incorporation of the Foundation for Thought and Ethics," document submission to the Texas Secretary of State, *NCSE archives*: 1-4.
74. J. D. Spearing, E. J. Rothschild, T. B. Schmidt III, W. J. Walczak, P. T. Gillen, N. S. Benn, T. J. Barna, D. E. Boyle, L. G. Brown III, and J. A. Buell, Transcript of Oral Argument on July 14, 2005, on Reporters' Motion to Quash and FTE's Motion to Intervene, *Kitzmiller v. Dover*, Middle District of Pennsylvania, 04\_CV-2688: 86, [http://www2.ncseweb.org/kvd/all\\_legal/2005-05\\_FTE-related/2005-06\\_FTE\\_intervention/2005-07-14\\_transcript\\_pretrial\\_hearing\\_on\\_reporters\\_and\\_FTE-Buell.pdf](http://www2.ncseweb.org/kvd/all_legal/2005-05_FTE-related/2005-06_FTE_intervention/2005-07-14_transcript_pretrial_hearing_on_reporters_and_FTE-Buell.pdf).
75. FTE, "What Is the Foundation for Thought and Ethics?" document submission to Internal Revenue Service, *NCSE archives*: 1.
76. Thaxton et al., July 19, 2005 Deposition of Charles Thaxton, *Kitzmiller v. Dover*, pp. 52-53.

77. Spearing et al., Transcript of Oral Argument on July 14, 2005, on Reporters' Motion to Quash and FTE's Motion to Intervene, *Kitzmiller v. Dover*, p. 99.
78. Ibid., p. 101.
79. Geisler et al., *The Creator in the Courtroom "Scopes II,"* p. 194.
80. An e-mail to Wendell Bird asking for recollections on this point, sent in March 2007, was unanswered.
81. Geisler, *Creation and the Courts*, pp. 23-24.
82. *Newsletter of the American Scientific Affiliation* 24, no. 3 (1982), <http://www.asa3.org/ASA/topics/NewsLetter80s/JUNJUL82.html>.
83. C. B. Thaxton, "Creationism/Evolution: Contrasting Views (no. 3)," *Crossroads: Science Meets Society* 2 (1982): 7-8.
84. Ibid. Crossroads was a series of monographs edited by Robert C. Barkman, Springfield College, [rbarkman@spfldcol.edu](mailto:rbarkman@spfldcol.edu). A copy was obtained courtesy of Dr. Barkman, and it can now be found in the NCSE archives.
85. W. Frair, "Report of 1974 Board of Directors Meeting," *Creation Research Society Quarterly* 11, no. 2 (1974): 126-27.
86. P. W. Davis, "Land-Dwelling Vertebrates and the Origin of the Tetrapod Limb," *Creation Research Society Quarterly* 2, no. 1 (1965): 27-31; G. F. Howe and P. W. Davis, "Natural Selection Reexamined," *Creation Research Society Quarterly* 8, no. 1 (1971): 30-43, [http://creationresearch.org/crsq/abstracts/sum8\\_1.html](http://creationresearch.org/crsq/abstracts/sum8_1.html).
87. P. W. Davis, "Biographical Sketch," <http://www.clearwater.edu/faculty/BillDavis.pdf> (accessed February 2007).
88. W. Frair and P. W. Davis, *The Case for Creation* (Chicago: Moody Press, 1967; 1983).
89. E.g., S. C. Meyer, "Danger: Indoctrination. A Scopes Trial for the '90s," *Wall Street Journal*, 1993, <http://www.discovery.org/scripts/viewDB/index.php?command=view&cid=93>.
90. R. Salner, "Professor Teaches a Supernatural Creation of World," *San Francisco Examiner*, 1980, p. A9.
91. R. Lewin, "Creationism on the Defensive in Arkansas," *Science* 215, no. 4258 (1982): 33-34.
92. J. Weatherly, "Creationists Lose in Arkansas: Missing Witnesses and a Divided Defense Muddled the Issue," *Christianity Today* (1982): 29.
93. W. Bird, Plaintiffs' Summaries of Expert Testimony, Plaintiffs, *Keith v. Louisiana Department of Education*: 1-76. This document is not dated, but since the creationists were plaintiffs and the description of expert testimony is used to inform the parties of planned testimony at trial, the date must be 1982. The document was provided by the ACLU archives at Mudd Library, Princeton.

94. W. Bradley, foreword to *Origin Science: A Proposal for the Creation-Evolution Controversy* (Grand Rapids, MI: Baker Book House, 1987), p. 7.
95. Larson, *Trial and Error: The American Controversy over Creation and Evolution*, p. 168.
96. D. H. Kenyon, Affidavit of Expert Witness Dean Kenyon, *Edwards v. Aguillard*, Eastern District of Louisiana, Civil Action No. 81-4787.
97. Ibid.
98. For further analysis of the drafts, see B. Forrest, Supplement to Expert Witness Report, Plaintiffs, *Kitzmiller v. Dover*, Middle District of Pennsylvania, 04-CV-2688: 1-14, [http://www2.ncseweb.org/kvd/all\\_legal/2005-03\\_expert\\_witnesses/2005-07-29\\_Forrest\\_Ps\\_expert\\_supplemental\\_readable.pdf](http://www2.ncseweb.org/kvd/all_legal/2005-03_expert_witnesses/2005-07-29_Forrest_Ps_expert_supplemental_readable.pdf).
99. J. Buell, "Intelligent Design and the Dover Case," <http://www.fteonline.com/buell-dallas-blog.html> (accessed January 29, 2006).
100. C. Luskin, "Response to Barbara Forrest's *Kitzmiller* Account Part V: Phillip Johnson and *Of Pandas and People*," [http://www.evolutionnews.org/2006/09/response\\_to\\_barbara\\_forrests\\_k\\_4.html](http://www.evolutionnews.org/2006/09/response_to_barbara_forrests_k_4.html) (accessed April 5, 2006).
101. Plaintiffs' Exhibit-653, chap. 6, p. 28.
102. Ibid., chap. 2, p. 2 (insert).
103. Ibid.
104. Ibid., pp. 6-20.
105. Ibid., chap. 6, pp. 1-2; emphases added.
106. P. W. Davis et al., *Of Pandas and People*, p. 78.
107. Bradley is the key figure here; in various 1980s interviews he basically states that he performed this conversion in rebuttal to the evolutionist criticisms of the creation scientists' "Second Law" argument. He might have been doing this directly in response to the *McLean* plaintiffs' witness Harold Morowitz (whose main job was to rebut the Second Law argument), especially because Bradley was signed up as a creationist expert for the Louisiana case. However, I have not yet fully investigated this issue.
108. N. L. Geisler and J. K. Anderson, *Origin Science: A Proposal for the Creation-Evolution Controversy* (Grand Rapids, MI: Baker Book House, 1987), p. 11.
109. M. D. Hartwig and S. C. Meyer, "A Note to Teachers," in *Of Pandas and People: The Central Question of Biological Origins* (Dallas, TX: Houghton Publishing), p. 159. Meyer also made this argument in a paper given at the 1992 ID conference at Southern Methodist University (Robert T. Pennock, personal communication), published as S. C. Meyer, "Laws, Causes and Facts: Response to Michael Ruse. Darwinism, Science or Philosophy?" Proceedings of a symposium titled "Darwinism, Scientific

- Inference or Philosophical Preference?" Southern Methodist University, Dallas, TX, March 26-28, 1992, *Foundation for Thought and Ethics* (1994): 29-40.
110. For the origins and significance of this favorite snippet of rhetoric, used unblinkingly by all creationists including ID advocates, see E. C. Scott, Expert Witness Statement by Eugene C. Scott, Plaintiffs, *Selman v. Cobb*, Northern District of Georgia, 1:02-CV-2325-CC: 1-26, [http://www2.ncseweb.org/selman/2006-11-16\\_Scott\\_expert\\_report.pdf](http://www2.ncseweb.org/selman/2006-11-16_Scott_expert_report.pdf).
111. N. L. Geisler, "A Scientific Basis for Creation: The Principle of Uniformity," *Creation/Evolution* 4, no. 3 (1983): 1-6.
112. N. L. Geisler and R. C. Sproul, *Miracles and Modern Thought* (Grand Rapids, MI: Zondervan, 1982), p. 58. As noted previously, Thaxton was an editor on this book and so could still have suggested the Mount Rushmore idea to Geisler.
113. B. Forrest, Supplement to Expert Witness Report, Plaintiffs, *Kitzmiller v. Dover*; see also the revised edition of B. Forrest and P. Gross, *Creationism's Trojan Horse* (New York: Oxford University Press, 2007).
114. T. Woodward, *Doubts about Darwin: A History of Intelligent Design* (Grand Rapids, MI: Baker Books, 2003), p. 85.
115. E.g., by Stephen Meyer in an interview with Tony Snow of Fox News on August 6, 2005. Transcript available at [http://www.pandasthumb.org/archives/2006/04/my\\_encounter\\_wi.html](http://www.pandasthumb.org/archives/2006/04/my_encounter_wi.html).
116. "Some Summer Summary," *Newsletter of the American Scientific Affiliation* 30, no. 4 (1988), <http://www.asa3.org/ASA/topics/NewsLetter80s/AUGSEP88.html>.
117. M. J. Woodruff, K. W. Colby, S. E. Ericsson, and F. D. Montgomery, Brief of the Christian Legal Society and National Association of Evangelicals as Amici Curiae Supporting Appellants, *Edwards v. Aguillard*, US Supreme Court, No. 85-1513. This cannot be argued here, but the CLS/NAE amicus brief is another proto-ID document, citing Thaxton and even using the term "intelligent design" twice.
118. J. Cole. "More Patter of Little Pandas," *NCSE Reports* 15, no. 1 (1995): 21, [http://www.ncseweb.org/resources/articles/5844\\_41\\_cole\\_1995\\_more\\_patter\\_\\_11\\_24\\_2004.asp](http://www.ncseweb.org/resources/articles/5844_41_cole_1995_more_patter__11_24_2004.asp).
119. Numbers, *The Creationists*.
120. This is documented at [http://www.pandasthumb.org/archives/2005/09/why\\_didnt\\_they.html](http://www.pandasthumb.org/archives/2005/09/why_didnt_they.html).