

NOT IN OUR CLASSROOMS

Why Intelligent Design
Is Wrong for Our Schools

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1: The Once and Future Intelligent Design

EUGENIE C. SCOTT

In the Beginning

In the United States, evolution became widely accepted by the scientific community around the turn of the twentieth century. It thereafter began to be included in college and secondary school textbooks. The late nineteenth century was not a period of extensive religious hostility to evolution, partly because of the promotion of evolution by American scientists who were active church members. It was not until the twentieth century that the U.S. antievolution movement became organized, active, and effective. Three trends converged to produce the first major manifestation of anti-evolutionism in the twentieth century: the growth of secondary education, the appearance of Protestant fundamentalism, and the association of evolution with the ideas of social Darwinism and eugenics, which became unpopular after World War I.

MORE SECONDARY SCHOOL STUDENTS

Although textbooks at the turn of the century included evolution, few students were exposed to the ideas contained in these books: in the late nineteenth century, high school education was largely limited to urban dwellers and the elite. In 1890, for example, only 3.8 percent of children aged 14 to 17 attended school—about 202,960 students.¹ But high school enrollment approximately doubled during each subsequent decade, so that by 1920, there were almost 2

million students attending high school. The practical effect of this was that more students were being exposed to evolution—and parents who felt uneasy about the topic for religious or political reasons rallied around the politician William Jennings Bryan to protest the teaching of evolution to their children.

FUNDAMENTALISM

The fundamentalist movement in American Protestantism is named for a theological perspective developed during the first few decades of the twentieth century. It was encapsulated in a series of small booklets collectively called *The Fundamentals*, published between 1910 and 1915. Fundamentalists believed the Bible to be inerrant—that is, without error—and its passages were to be taken literally, not “interpreted.”

Financed by millionaires who had founded the Bible Institute of Los Angeles, now Biola University, millions of copies of *The Fundamentals* booklets were printed and distributed “free of charge, to every pastor, professor, and theology student in America.”² Some of the authors of the booklets rejected evolution, but some accepted various forms of theistic evolution, the view that evolution is the method used by God to bring about the current diversity of living things. However, the fundamentalist position hardened into anti-evolutionism fairly quickly. Fundamentalists became the ground troops for the campaign to rid schools of evolution. They were motivated by religious sentiments and also by a concern that evolution was the source of many negative and even corrosive social trends.

EVOLUTION AS A SOCIAL EVIL

The second decade of the twentieth century was a time of considerable social and psychological unrest. The appalling death, brutality, destruction, and devastation of World War I led many to conclude that civilization itself had failed. Conservative Christians sought a solution in a return to biblical authority. Their views were reinforced by the fact that Germany had been the main source of

both theological Higher Criticism (viewed as an attack on religion) and militarism (viewed as an attack on civilization).³

Conservative American Christians believed German militarism, theories of racial superiority, and eugenics arose from the acceptance of evolution by Germany at the end of the nineteenth century. In reality, German views of evolution were quite different from those of Darwin, largely rejecting natural selection as a mechanism of change, biological or societal. In the early twentieth century, evolution was also credited with providing the foundation for laissez-faire capitalism—as robber barons of the late nineteenth and early twentieth centuries sometimes claimed that natural selection justified their exploitative labor policies and cutthroat business practices.

Thus fundamentalists, led by the famous progressive politician and champion of the working man William Jennings Bryan, had many reasons to oppose the teaching of evolution to their children, whether or not these reasons were justified. Beginning in the early 1920s, several state legislatures took up Bryan's call to outlaw the teaching of evolution, and finally, on March 23, 1925, the Tennessee legislature passed the Butler Act. This set in motion events that would culminate in the Trial of the Century.

The Scopes Trial and Its Aftereffects

The Butler Act prohibited the teaching of “any theory that denies the Story of Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animal.” The American Civil Liberties Union advertised for a plaintiff to challenge the suit, and the citizens of Dayton, Tennessee, offered John Scopes, whose name is now forever tied to the American creationism/evolution controversy.

The Scopes trial is familiar Americana: the titanic battle between two legal giants, Clarence Darrow and William Jennings Bryan; the hucksterism of the Dayton businessmen; the vicious if entertaining accounts of the trial by H. L. Mencken; the image of a boyish John Scopes looking slightly bewildered before all the cam-

eras and microphones. What people sometimes overlook, however, is that Scopes lost: the Butler Act stayed on the books and it remained illegal to teach evolution in Tennessee for about forty more years.

The legal strategy of banning evolution by statute fell out of favor, however. Although Mississippi and Arkansas passed antievolution laws similar to the Butler Act in 1926, antievolution laws were defeated in Oklahoma, Missouri, West Virginia, Delaware, Georgia, Alabama, North Carolina, Florida, Minnesota, and California.⁴ But even without formal banishment, evolution disappeared from the secondary school curriculum because of economic pressure. In the South, teachers and parents who chose textbooks in local districts preferred ones that slighted evolution, so textbook publishers were quick to remove, downplay, or qualify evolution to make sales. Books tailored for the southern markets were of course also sold elsewhere, and evolution disappeared from textbooks all over the nation.⁵ The curriculum is shaped by textbook coverage, and since evolution was absent from the textbooks, it quickly disappeared from the classroom.

By 1930, only five years after the Scopes trial, an estimated 70 percent of American classrooms omitted evolution,⁶ and the amount diminished even further thereafter. From the 1930s until the late 1950s, there was no need for a creationist movement because evolution was not being taught. It was not until evolution returned to the high school classroom in midcentury that creationists were prodded into action, and the creationism/evolution controversy sprang back to life as creationists lashed back at the reintroduction of evolution in American schools.

The Return of Evolution

After having been ignored in the precollege curriculum for almost thirty years, evolution came back into high school textbooks in a big way. The late 1950s saw a boom in federal expenditure for science education. Model textbooks in physics, chemistry, geology, and biology were commissioned. The scientists and master teachers at

the National Science Foundation–funded Biological Sciences Curriculum Study (BSCS) ignored tradition and composed textbooks that reflected science as it was taught at the university level, including evolution, ecology, and human reproduction. In 1963, the first three BSCS textbooks were released, and all of them included evolution as a prominent theme.⁷

Partly because these new textbooks carried the stamp of approval of the NSF, but also because they were so much more interesting and up-to-date than existing books, school boards and textbook selection committees were eager to adopt them. Once the BSCS books began selling, commercial publishers started producing books in the same mold.⁸

The halcyon days for creationists of a high school curriculum sans evolution were over. How to combat evolutionism? Since the 1700s, some supporters of a literal interpretation of the Bible had argued that scientific evidence existed to support their views, but such arguments had diminished considerably after Darwin's *Origin of Species*. Now, in the middle of the twentieth century, those views were revived, partly in response to the increasing presence of evolution in textbooks and in the curriculum. If students were going to be taught evolution, antievolutionists argued, students also should be exposed to a biblical view. Creationists reasoned that if creationism could be presented as an alternative *scientific* view—creation science—then it would deserve a place in the curriculum. No one was more important in shaping this approach than Henry M. Morris.

Creation Science and Henry M. Morris

The late Henry M. Morris is widely considered to be the father of the twentieth-century movement known as creation science. Morris, a former hydraulic engineer, began his career as a creationist in 1946 with the publication of his first book, *That You Might Believe*, while he was still in graduate school. The book and its successor, *The Bible and Modern Science*, proclaimed a recent six-day (with twenty-four hours per day) creation, and a literal, historical Flood. These views

were of course based on literal interpretations of Genesis, but the additional claim was made that special creationism can be supported by the facts and theories of science. Although both of these books are still in print and continue to sell, the modern creation science movement crystallized in 1961 with the publication of Morris's book *The Genesis Flood*, written with the theologian John C. Whitcomb.⁹

Like Morris's previous works, *The Genesis Flood* argued that most modern geological features could be explained by Noah's Flood, a view that had originally been popularized by the early twentieth-century Seventh-Day Adventist geologist George McCready Price.¹⁰ Termed Flood geology, this view became the core of the new movement called creation science. The book's mix of theology and science is characteristic of creation science, and it continues to be widely read in evangelical and fundamentalist circles. *The Genesis Flood* proposed scientific evidence that Earth was less than ten thousand years old, and that evolution was therefore impossible. Fundamentalists were eager to claim scientific support for their religious views and use it to "balance" the teaching of evolution.

Morris worked tirelessly to strengthen the evangelical anti-evolutionist movement. To promote scientific research supporting the young age of Earth and the universe, the special creation of all living things, and Noah's Flood, he helped to found the Creation Research Society (CRS) in 1963, soon after the publication of *The Genesis Flood*. The *Creation Research Society Quarterly* (CRSQ) began publishing shortly thereafter, in 1964. This provided the scientific veneer: creation science now had its own journal.

TENETS OF CREATION SCIENCE

Creation science reflects the Christian theological view of special creationism. It holds that God created all things in their present form. The universe, therefore, did not develop gradually over time. Regarding living things, special creationism claims that God created plants and animals as separate "kinds." If evolution's dominant metaphor is a tree of life branching through time, the image

brought to mind with special creationism is of a lawn, with each blade of grass being a separately created kind. In special creationism, living things do not share common ancestors. Similarly, creation science proponents profess that the universe came into being in its present form, and that living things are separately created kinds exhibiting limited genetic variability. There can be some limited evolution within kinds (such as the cat kind radiating into lions, tigers, pumas, bobcats, house cats, and so on) but no common ancestry of kinds. Evolution, of course, sees all living things as ultimately connected through a genealogical relationship; common ancestry is the fundamental difference between special creationism and evolution.

Creation science argues that there are only two views, special creationism and evolution; thus, arguments against evolution are arguments in favor of creationism. Literature supporting creation science is based on alleged examples of evidence against evolution, which are considered not only proof against evolution but also positive evidence for creationism. Understandably, there is nothing in the creation science canon providing a positive scientific case for the sudden emergence of the universe in its present form at one time, let alone for its specific doctrines of a six-thousand-year-old Earth and universe, the occurrence of a worldwide flood responsible for the fossil record and geological features such as the Grand Canyon, and the impossibility of evolution except within sharp limits.

CREATION SCIENCE EXPANDS

In 1972, Henry Morris and others founded the Institute for Creation Research (ICR) as a division of the Bible-based Christian Heritage College. ICR became an independent institution in 1980, moving from the San Diego suburb of El Cajon to nearby Santee, California, where it currently is housed in two large buildings. Now grown to an institution with a staff of more than forty, the ICR began as and remains the flagship antievolution ministry.

The ICR has grown steadily since its inception, taking pride in al-

ways ending the year in the black and never borrowing money for its building projects. To promote creation science, ICR conducts extensive outreach to churches and individuals. The ICR maintains the Museum of Creation and Earth History at its Santee headquarters, which attracts an estimated twenty thousand people every year.¹¹ Remodeled in 1992, it currently reaches thousands of school-children each year, most of them homeschooled or attending Christian schools. Because of the religious orientation of the museum, few local public school teachers take their students to the ICR museum. The museum presents a journey through the seven days of creation, mixing biblical with scientific references. True to Morris's concern with Flood geology, there is a Noah's Ark diorama, presenting calculations of how many animals could have been housed on the Ark.

Many other creation science museums are operating or are in the planning stages. The most ambitious creation science museum is scheduled to open outside of Florence, Kentucky. Built by the international creation science ministry Answers in Genesis (AIG), perhaps now the largest creation science organization in the United States, the museum plans extensive exhibits on the six days of creation, a planetarium, picnic areas for tourists, and other attractions.

In addition to the ICR and AIG, other national young-Earth creationist organizations have heeded the creation science message of Henry Morris. Creation science is still the dominant form of anti-evolutionism in the United States.

Equal Time for Creation and Evolution

By the early 1960s, the concept of evolution was returning to science textbooks and classrooms after having been largely absent since the 1930s. It is not coincidental that Whitcomb and Morris's *The Genesis Flood* was published in 1961 and the ICR was founded a few years later: the increased exposure of public school students to evolution was a cause for alarm among conservative Christians. The renewed textbook emphasis on evolution generated conflicts

in states with antievolution laws; teachers who wished to teach modern science would be breaking the law if they did so.

In 1965, Arkansas, Tennessee, Louisiana, and Mississippi still had Scopes-era antievolution laws on their books.¹² But that year, the Arkansas Education Association (AEA) decided to challenge the state's antievolution law, partly because the presence of evolution in textbooks put teachers on a collision course with the law. Rather than seeking a Scopes-style teacher defendant who would be prosecuted for breaking the law, the AEA instead challenged the law itself with a teacher plaintiff, Susan Epperson, who sought to teach evolution legally.¹³ The trial itself was very short, taking only about two hours; the judge ruled that the antievolution law was unconstitutional. But to the surprise of Epperson and the AEA, the Arkansas Supreme Court reversed the lower court's ruling in a two-sentence decision in 1967.

On appeal, the U.S. Supreme Court upheld the initial decision, ruling in 1968 in *Epperson v. Arkansas* that the antievolution law was unconstitutional because it "selects from the body of knowledge a particular segment which it proscribes for the sole reason that it is deemed to conflict with a particular religious doctrine." (The ruling is explained in further detail in chapter 4.) Finally, forty-three years after the Scopes trial, it was unconstitutional to ban the teaching of evolution.

The Arkansas and other antievolution laws had hardly ever been enforced, so the effect of the *Epperson* decision was largely psychological. But if evolution could not be banned, how could children be protected from it? Keeping evolution out of the classroom was obviously not possible, with evolution included in most textbooks. Teaching the Bible along with evolution was one solution, but it quickly ran afoul of the First Amendment of the Constitution, which sets forth freedoms of religion, speech, and assembly. The Religion Clause reads, "Congress shall make no law respecting the establishment of religion, nor inhibiting the free exercise thereof." The Establishment Clause prohibits the state from promoting religion, and the Free Exercise Clause prohibits the state from inhibiting or

restricting religion: taken together, the clauses require public institutions such as schools to be religiously neutral.

William Jennings Bryan had argued that neutrality consisted of teaching neither evolution nor creationism in the schools; anti-evolution laws removed evolution from the curriculum so that students would not be exposed to what some considered an anti-religious doctrine. As evolution returned to textbooks and to the curriculum, creationists protested that the classroom was no longer neutral. To restore neutrality, they argued, both evolution and creationism should be taught.

A MOVEMENT BUILDS

The ICR encouraged citizens to take an active role in promoting creation science at the local level. In ICR's publication *Impact*, lawyer Wendell Bird encouraged local citizens to present school boards with resolutions encouraging the teaching of creation science in science curricula.¹⁴ A conservative Christian layman, Paul Ellwanger, submitted his own resolution to the Anderson, South Carolina, school district, proposing a "balanced treatment of evolution and creation in all courses and library materials dealing in any way with the subject of origins."¹⁵ Ellwanger subsequently prepared sample legislation for districts or states to pass, which was widely circulated.

Ellwanger's model legislation presented two alternative—and allegedly scientifically equivalent—views: "evolution science" and creation science, both of which he felt should be taught to maintain a balanced curriculum. If evolution was taught, schools would be required to teach creation science as well. Inspired by his efforts, a movement began to introduce Ellwanger bills in state legislatures. Although legislators in Ellwanger's home state of South Carolina failed to pass an Ellwanger bill, legislation soon began appearing in other states.

By the early 1980s, equal-time legislation had been introduced in at least twenty-seven states.¹⁶ All died in committee, except for those in Arkansas and Louisiana. Many scientists and educators

were involved in campaigns to prevent the passage of equal-time legislation. Creation science finally was receiving attention from scientists, though not the kind Henry Morris had desired.

MCLEAN V. ARKANSAS

The Ellwanger-inspired Arkansas Act 590 called for balance (by which it meant neutrality) between creationism and evolution but tried to avoid the Establishment Clause by claiming that creation science was *science*, rather than religion. Yet evolution was linked to religion because teaching evolution and not creationism was alleged to create a hostile climate for religious students. Teaching evolution only was held to be a violation of academic freedom, “because it denies students a choice between scientific models and instead indoctrinates them in evolution-science alone.”¹⁷ Creation science was presented as a strictly scientific view.

Upon its passage in 1981, the bill was swiftly challenged by the Arkansas American Civil Liberties Union. Plaintiffs in the lawsuit included Methodist clergyman William McLean and the bishops or other spokespersons for the Arkansas Episcopal Church, the United Methodists, Roman Catholics, African Methodist Episcopalians, Presbyterians, and Southern Baptists, as well as science education organizations, civil liberty organizations, and several individual parents. The presence of so many religious plaintiffs helped to defuse the argument that opposition to the bill equated to opposition to religion.

McLean v. Arkansas was tried in federal district court. Plaintiffs argued that because creation science was inherently a religious idea, its advocacy as required by Act 590 would violate the Establishment Clause. Furthermore, because creation science was not scientific, there was no secular purpose for its teaching. The state, defending the law, had to argue the opposite: that creation science was scientific, and thus its advocacy would have a secular purpose. Each side brought in expert witnesses to testify in favor of its position. Much time was spent in the trial over the definition of science, and whether creation science fulfilled it.

The judge ruled against the law: creation science was not science, and its teaching promoted a sectarian religious view. The judge noted that creation science proposed a “contrived dualism” referred to by proponents as the two-model approach: there are only two possibilities, special creationism or evolution. Hence, disproving evolution would prove creationism. Creation science, the judge noted, consisted largely of the presentation of arguments against evolution rather than a positive presentation supporting special creationism. It is a theme we will encounter again in the later creationist movement of intelligent design.

Equal time for creation science and evolution had failed in Arkansas, but another Ellwanger-derived law very similar to the Arkansas one had been introduced into neighboring Louisiana only a few months before the *McLean* decision.

THE LOUISIANA EQUAL-TIME LAW

The framers of the Louisiana law Balanced Treatment for Creation Science and Evolution Science in Public School Instruction, also passed in 1981, sought to avoid defining creation science in recognizably religious terms. Again the ACLU challenged the law in federal district court, but because proponents of the law also requested an injunction, courts had to sort out jurisdictional issues, and both cases slogged through the courts for several years. The district court tried the case by summary judgment: the judge accepted written statements from both sides and decided the outcome of the case based on these documents. Unlike *McLean*, then, the Louisiana case was not a full trial.

In 1985, the federal district court decided that the Louisiana law was unconstitutional because it advanced a religious view by prohibiting the teaching of evolution unless creationism—a religious view—was also taught. The court of appeals agreed, and finally, in 1987, the case made its way to the Supreme Court. The highest court concurred with the lower ones.

The preeminent purpose of the Louisiana Legislature was clearly to advance the religious viewpoint that a supernatural being created humankind. . . . The Louisiana Creationism Act advances a religious doctrine by requiring either the banishment of the theory of evolution from public school classrooms or the presentation of a religious viewpoint that rejects evolution in its entirety (Edwards v. Aguillard, 482 U.S. 578 [1987]).

The ruling is explained in further detail in chapter 4.

Equal time for creation science was no longer a legal option in the schools of the United States. But as early as the defeat of creation science in *McLean*, a group of conservative Christians had begun searching for an alternative antievolution view that would not only be legally viable but would also appeal to a broader range of Christians. Creation science, with its stress on biblical literalism and the young Earth, attracts conservative Christians but to most mainstream Christians it appears to be marginal theology and odd science. This alternative became the intelligent design movement.

Intelligent Design

THE FOUNDATION FOR THOUGHT AND ETHICS

In 1980, Jon Buell, a former campus minister, established the Foundation for Thought and Ethics (FTE), which declared its primary purpose as “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.” FTE served as the nucleus for a group of conservative Christians concerned about the failure of creation science and the continued instruction of evolution. Accordingly, the publications and conferences sponsored by FTE and its allies focused on special creation’s core idea of God the Designer, without direct reliance on the Bible: references to a uni-

versal Flood, to the special creation of Adam and Eve or any other creature, or to a young Earth were sparse.

Buell recruited the historian and chemist Charles Thaxton, the engineer Walter Bradley, and the geochemist Roger Olsen to write a document on scientific difficulties concerning the origin of life. This became FTE's first book, *The Mystery of Life's Origin*.¹⁸ Paralleling the approach of creation science, *Mystery* emphasized supposed scientific shortcomings of scientific theory regarding the origin of life. Indeed, in 1984 as well as today, scientists have not reached consensus on the steps required for a natural origin of the first replicating structure; the origin of life is a currently unexplained event. But *Mystery* went beyond the observation that the origin of life is unexplained to conclude that the origin of life represented a category of scientific problems that was unexplainable. The origin of life, they claimed, could not be determined by natural laws alone. To explain the first cell, they invoked the action of an intelligent agent.

Since the publication of *Mystery*, new phenomena have been added to this list of putative unexplainable phenomena, including molecular machines such as the bacterial flagellum and complex biochemical processes such as the blood-clotting cascade and the immune system. Echoing the late eighteenth and early nineteenth century English clergyman William Paley, ID proponents claim that structural complexity cannot be explained by natural processes, which they equate with chance. (Chapter 2 describes their arguments in detail.) It is absurd to imagine chance forming complex structures; they must thus require the design of an intelligent agent.

The authors of *Mystery* did not identify the creative agent because, they said, they were examining the issue from a strictly scientific perspective, rather than a religious one. While admitting that they themselves believed the agent was the Christian God, they offered the alternative of Hoyle and Wickramasinghe¹⁹ that life on Earth was produced by extraterrestrials of high intelligence. So the intelligent agent was not identified, although it would be difficult to avoid the conclusion that the agent was God.

More recent intelligent design proponents have not strayed from this claim, painstakingly attempting to distinguish ID from creationism. God might be the agent, but the agent might be material as well. It is a careful—if ultimately unsuccessful—dance between leaving in enough religion to keep creationists happy but keeping God at a sufficient distance to avoid the Establishment Clause.

OF PANDAS AND PEOPLE—AND CREATIONISM

The next book to emerge from FTE was the high school supplementary textbook *Of Pandas and People*²⁰ (OPAP). OPAP was the first book to identify itself with the phrase *intelligent design*. Its history illuminates the creationist roots of ID.

FTE began work on OPAP shortly after the *McLean* trial. In *Origins Research*, published by the group Students for Origins Research, it was reported, “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.’” The authors of the textbook, Dean Kenyon and Percival Davis, both had deep creationist roots. Davis was the coauthor of a young-Earth creationist book, and Kenyon had written a foreword for *What Is Creation Science?*, by Henry Morris and Gary Parker, as well as an affidavit for the state of Arkansas defending Act 590. Unsurprisingly, the orientation and content of OPAP clearly reflects the authors’ creationist roots.

Indeed, it turns out that OPAP was originally even more clearly rooted in creationism than the published version indicates. During the discovery phase of *Kitzmiller v. Dover*, the 2005 trial over a policy of the Dover, Pennsylvania, school board requiring the teaching of ID, early drafts of OPAP were subpoenaed by the plaintiffs’ legal team and introduced during trial. In these drafts, titles and wording reflecting creationism morph into intelligent design. The earliest known draft is titled “Creation Biology” and is dated 1983. In 1986, the title was changed to the similar “Biology and Creation.” A less creationist-sounding title was given 1987’s “Biology and Ori-

gins” (although *origins* is a ubiquitous term in creationist literature and much less common in evolutionary biology), and in that same year, the first draft bearing the title “Of Pandas and People” is found. A second draft of this title is also dated 1987, and the first edition of the book was published in 1989.

Changes taking place in one paragraph in OPAP illustrate the creationist roots of ID. In the 1986 “Creation Biology” and the 1987 “Biology and Origins” manuscripts, creationism is defined as follows:

Creation means that the 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. [Italics mine.]

This, of course, is the definition of special creationism: the Christian doctrine that God created things in their present form. In 1987 the first manuscript with the title “Of Pandas and People” appears—with the identical wording of the earlier, overtly creationist manuscripts. This first OPAP-titled manuscript is something of a missing link, having the old special creationism wording yet using the new title. In a second 1987 OPAP manuscript the definition of creationism morphs into the definition of intelligent design:

Intelligent design means that the 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. [Italics mine.]

The intelligent creator of the earlier versions also disappears in this second 1987 manuscript (and in the first and second editions of the published version of the book) to be replaced by the less religious-sounding phrase *intelligent agency*. Why did the wording change between these two versions of the 1987 manuscripts, reducing the overtly creationist language? It is perhaps not coinci-

dental that the *Edwards v. Aguillard* decision was announced in July 1987, making creation science a legally invalid strategy.

The 1989 OPAP first edition was the first time that the term *intelligent design* appeared in print to describe the form of creationism expressed in *The Mystery of Life's Origin*. As OPAP's history clearly reflects creationist roots, so also does the content of ID. Creation science founding father Henry Morris in fact chided ID theoretician William Dembski for not giving sufficient credit to creation science predecessors:

These well-meaning folks did not really invent the idea of intelligent design, of course. Dembski often refers, for example, to the bacterial flagellum as a strong evidence for design (and indeed it is); but one of our ICR scientists (the late Dr. Dick Bliss) was using this example in his talks on creation a generation ago. And what about our monographs on the monarch butterfly, the bombardier beetle, and many other testimonies to divine design? Creationists have been documenting design for many years, going back to Paley's watchmaker and beyond.²¹

In both creation science and ID, a familiar litany of topics can readily be found, all of which highlight the supposed inability of evolution to explain the origin and diversity of living things. The absence of a scenario for a natural origin of life, of course, is a mainstay of both creation science and ID: it was the topic of the founding document of ID, *The Mystery of Life's Origin*. The supposed lack of transitional fossils ("gaps in the fossil record") is a mainstay of both creation science sources such as Duane Gish's *Evolution: The Fossils Still Say No!*²² and ID sources such as Jonathan Wells's *Icons of Evolution*.²³ Both ID and creation science proponents view the Cambrian Explosion of invertebrate body plans as something impossible to explain through evolution.²⁴ Another familiar topic in the literature of the two forms of creationism is the supposed inability of natural selection to account for complex biological structures: it is the key idea of ID, but it was presaged in creation science writings for decades. Also present in both creation science and ID is an effort to

refute evolution through probability arguments: Henry Morris frequently cited the impossibility of assembling even a simple protein through chance, and William Dembski's *The Design Inference*²⁵ is the key ID text for validating design—through probability.

Other themes common to both creation science and ID include a mistrust of naturalism, both as a methodology of science (because it restricts science to natural causes) and as a philosophy (because it claims that only natural causes exist). Limited evolution is recognized, but only within strict limits; in creation science, this is referred to as evolution within the kind.²⁶ And—of course—Christianity permeates the literature of both groups, and proponents view both movements as ministries for bringing the unsaved to Christ.²⁷

The efforts of FTE to promote ID through OPAP did not generate much public notice, perhaps because FTE as a Christian ministry did not attract much notice from the mainstream press. The ID movement became much more widely known with the publication of a book by law professor Phillip Johnson.²⁸ The advent of Johnson on the ID stage appreciably changed the movement.

PHILLIP JOHNSON AND INTELLIGENT DESIGN

While on a sabbatical at Cambridge University in 1987, Johnson met an American philosophy student named Stephen Meyer who introduced him to the neo-creationist antievolutionists associated with FTE. Upon returning to the University of California at Berkeley's law school, Johnson began participating in design-oriented conferences and writing *Darwin on Trial*. The publication of an antievolution book by a tenured professor at a major secular university such as Berkeley came as a surprise to the educated public. Although books by Henry Morris were ignored by the scientific community, a few scientists reviewed *Darwin on Trial* in popular publications such as *Scientific American*, and discussions of this new form of antievolutionism appeared in the popular press. Still, scientists uniformly criticized what they considered to be uninformed science in John-

son's book. Johnson's subsequent books focused more on social, educational, and theological issues, but they continued expressing the basic ID message that biological structural complexity was impossible to achieve through unguided natural causes; it required God's direct action. Johnson also forcefully expressed the ID animosity toward philosophical naturalism—a belief that reality consists only of material phenomena (matter and energy and their interactions) and that there is no supernatural. He also criticized the methodological naturalism of science—the well-established practice of limiting science to only natural causes. This, too, is a theme in creation science, but it became central to ID, which proposed as early as *Of Pandas and People* (second edition) that science should be expanded to include the occasional supernatural intervention.

Johnson's major contribution to the ID movement was strategic. He argued for "mere creation" (the unifying of all antievolutionists around the uniformly accepted concept of design) and urged putting aside issues such as biblical literalism, the age of the Earth, Flood geology, and other traditional creationist themes. His view was that "people of differing theological views should learn who's close to them, form alliances and put aside divisive issues 'til later. I say after we've settled the issue of a Creator, we'll have a wonderful time arguing about the age of the Earth."²⁹ Perhaps because of Johnson's importance and influence on the movement, attention began to shift away from Jon Buell and FTE in the mid-1990s. In 1996, leadership of the ID movement passed to the Discovery Institute think tank in Seattle, Washington.

ID GROWS: THE DISCOVERY INSTITUTE AND THE WEDGE

The Discovery Institute is a think tank founded in 1990 by a former politician named Bruce Chapman. The DI is an umbrella organization that houses a number of centers or projects dealing with such issues as regional transportation, technology, economics (mostly tax and free-market policy), religion and public life, and law and jus-

tice (tort reform). The intelligent design–promoting Center for Renewal of Science and Culture (CRSC), headed by Stephen Meyer, was announced in a 1996 press release:

For over a century, Western science has been influenced by the idea that God is either dead or irrelevant. Two foundations recently awarded Discovery Institute nearly a million dollars in grants to examine and confront this materialistic bias in science, law, and the humanities. The grants will be used to establish the Center for the Renewal of Science and Culture at Discovery, which will award research fellowships to scholars, hold conferences, and disseminate research findings among opinion makers and the general public.³⁰

Later, the name of the unit was changed to the less religious-sounding Center for Science and Culture (CSC). Since 1996, the Discovery Institute’s intelligent design unit has sponsored the writing of books by postdoctoral scholars, the production of antievolution videos, and an extensive media campaign including a frequently updated Web site. This campaign includes frequent submission of op-eds and press releases and an ongoing evaluation of the coverage of ID in the media—most of the latter consisting of complaining about the alleged unfairness of any coverage that is not uniformly positive.

The Web site touts the scientific research and scholarship of ID, presenting a list of peer-reviewed articles and peer-edited books and conference proceedings as examples of this new science. The list is paltry, and most of the items on it would not generally be regarded as contributions to the scientific research literature; one item, in fact, was repudiated by the journal in which it appeared. But the more important point is that it shows that nobody is using ID to advance our knowledge about the natural world. Although the scientific claims of ID will be examined in more detail in chapter 2, let me take a moment and briefly describe what the central scientific claim of ID turns out to be. It will become clear why ID is scientifically sterile.

ID'S SCHOLARLY PRETENSIONS

William Dembski defines ID as composed of three parts: “A scientific research program that investigates the effects of intelligent causes; an intellectual movement that challenges Darwinism and its naturalistic legacy; and a way of understanding divine action.”³¹

Although Dembski gives primacy to scholarship, in actuality, ID's scholarly pretensions are thin. There are only two concepts comprising ID theory: Michael Behe's “irreducible complexity” and William Dembski's “complex specified information,” which is related to what he calls the design inference. Both are attempts to identify those phenomena in nature that supposedly are unexplainable through natural causes—the structurally complex systems and molecular machines that require the action of the intelligent agent. As will be discussed in chapter 2, both irreducible complexity and the design inference have been rejected by scientists as being irrelevant to the understanding of biology.

In content, ID resembles the traditional two-model approach of creation science. As in creation science, the underlying assumption is that either evolution or an intelligent agency explains nature. Disproving evolution leaves ID as the default winner. As a result of this mindset, ID literature focuses on problems with evolution. Jonathan Wells's *Icons of Evolution* is a classic in this genre, presenting generally misleading and/or inaccurate information on topics such as the peppered moth example of natural selection, the Miller-Urey sparking experiments producing amino acids, homology, the Cambrian Explosion, and human and bird evolution. Evolution is presented as having insurmountable flaws, with the default solution to this problem being the presumption of a Designer. The critiques of evolution offered in such ID literature, however, is recognizable as a proper subset of the critiques offered by creation science literature, and they are no more valid.

TAKING ID ON THE ROAD

Especially in the early days of the CSC, ID was promoted through a series of conferences, the goals of which were to introduce ID to both the public and the scholarly community and to increase acceptance of the basic ID premise that evolution was inadequate science and that ID presented a fresh and valid perspective.

From my own observations and from interviewing scientists who had attended similar ID programs, it appears that the organization of ID conferences during the late 1990s and early 2000s followed a pattern. The official approach—on stage at least—was secular; for example, the program did not open with prayer, and references to religion were minimal. The ID proponents presented their science, the critics pointed out flaws, the ID proponents thanked the critics for their openness in engaging in scholarly dialogue, and they proceeded to the next conference at which exactly the same arguments on both sides were again presented, but to a fresh audience of laypeople and academics.

Eventually, the Discovery Institute stopped asking critics to attend these conferences, and a second conference format began to evolve. At these second-generation conferences, only ID proponents presented, the audience was largely sympathetic, and there were more overt religious references. At a 2002 conference organized by the campus-based student Intelligent Design and Evolution Awareness (IDEA) club in San Francisco, for example, one of the breakout speakers began his session with a prayer. Keynote speakers referred to apologetics, and the audience seemed largely recruited from churches and local religious colleges.

ID advocates complain that their views are rejected out of hand by the scientific establishment, yet they do not play by the normal rules of presenting their views first through scientific conferences and then to peer-reviewed journals and then in textbooks. Few ID proponents present papers or posters at professional meetings, and those who do attend such meetings do not present examples of the use of central ID concepts such as irreducible complexity and the

design inference. Instead, they present vaguely antievolutionary papers or papers discussing the sociological aspects of the controversy over ID and evolution. And significantly, the first publication to use the phrase *intelligent design* was not a theoretical paper but a high school textbook, *Of Pandas and People!* Ordinarily, one does the research first and *then* produces the textbook.

Now, instead of attempting to persuade the scholarly community, ID proponents bypass scientists and go directly to the general public, where they have been much more successful. Discovery Institute fellows such as Phillip Johnson, Steven Meyer, Michael Behe, Jonathan Wells, and Paul Nelson have been able to publish ID views in op-eds in national publications such as the *Wall Street Journal*, the *New York Times*, and the *Washington Post*, and in major regional outlets such as the *Los Angeles Times*. Their success in swaying public opinion is evidenced by the large number of school boards that have considered introducing ID into their curricula and state legislators who have introduced pro-ID legislation over the last few years.

They did this by staying on message that ID was not creationism but a new form of science, and by attacking evolution as inadequate science. Ironically, to anyone familiar with the history of the antievolution movement, the attacks on evolution are perhaps the most obvious link between ID and earlier forms of creationism.

THE WEDGE

The most complete single source of information on the goals and strategy of the ID movement is a fundraising proposal to an unknown foundation or individual prepared by the Discovery Institute in the late 1990s, called "The Wedge Strategy." The manuscript of the fundraising proposal was leaked, posted on the Internet, and eventually acknowledged by the Discovery Institute. The Wedge document, as analyzed by Barbara Forrest and Paul R. Gross,³² lays out general goals and five-year and twenty-year plans. The overall goals of the ID movement are explicitly religious:

THE ONCE AND FUTURE INTELLIGENT DESIGN

To defeat scientific materialism and its destructive moral, cultural and political legacies. To replace materialistic explanations with the theistic understanding that nature and human beings are created by God.

ID is revealed to be a specific sectarian, Christian view:

Design theory promises to reverse the stifling dominance of the materialist world view, and to replace it with a science consonant with Christian and theistic convictions.

The five-year goals of ID begin with plans to establish ID as a valid science but extend further:

To see intelligent design theory as an accepted alternative in the sciences and scientific research being done from the perspective of design theory. To see the beginning of the influence of design theory in spheres other than natural science.

To see major new debates in education, life issues, legal and personal responsibility pushed to the front of the national agenda.

ID, like creation science, has goals that are primarily religious. And, like creation science, ID has not been fully successful in hiding its fundamentalist motivations, which its proponents have candidly divulged when speaking to the conservative Christians who form the base, or ground troops, of the movement.

THE FUTURE

We have seen that ID is a subset of the ideas presented in creation science: it focuses narrowly on the big idea that God created, and it sets aside the details of creation science such as six-day creation, a young Earth, Flood geology, and the like. It retains the core dichotomy of creation science, which is that evidence against evolution equates with evidence for creationism. It is only necessary to

disprove evolution and creationism will then be proved by default. Promotion of this two-model approach is in fact the direction ID is heading.

“TEACH THE CONTROVERSY”

Originally, the DI argued that intelligent design deserved a place not only at the academic table but also in the public schools. In the late 1990s the CSC published white papers and op-eds arguing for the academic appropriateness and legality of teaching ID in high school.³³ If ID was banned, a district would be guilty of “viewpoint discrimination,” contended the ID legal experts.

But in the early 2000s the DI proponents of intelligent design seemingly had a change of heart. Rather than lobbying for the teaching of ID, they shifted tactics to promoting the teaching of straight antievolutionism. This was not a huge change in content, of course, as ID had always stressed the weaknesses or flaws of evolution, and in fact, ID is scarcely anything *other* than pronouncements about the weakness of evolution as a scientific theory. For ID advocates, the new approach was merely a change in emphasis. There are a number of phrases employed to promote this approach, as is discussed further in chapter 5. Teachers are variously exhorted to “critically analyze” evolution, to teach the “strengths and weaknesses” of evolution, to teach “evidence for and evidence against” evolution, to teach “the full range of views” about evolution, to teach “evolution as theory not fact,” and of course, to “teach the controversy.”

Although those outside the halls of the Discovery Institute can only speculate as to why this change in emphasis was made, it may be that advocates realized the inherent weakness of the phrase *intelligent design*, which implies a designer. A judge seeking the identity of the intelligent agent would quickly conclude—even from statements from Discovery Institute fellows themselves—that the agent is the Agent, exposing ID to the same legal liability that creation science experienced. The DI may have believed that propos-

ing schools teach that evolution is flawed or weak doesn't appear to be promotion of religion. Teaching bad science is perhaps unwise educational policy, but it might not be unconstitutional. It might also have occurred to the ID proponents that because there is no curriculum for ID other than "evolution doesn't work" (as in the *Icons of Evolution* arguments and examples), the argument that ID should be introduced into the curriculum is weak.

But perhaps the best argument for shifting from advocacy of ID to advocacy of "teaching the controversy" (teaching antievolutionism) is that it appeals to American sensibilities of fairness: who wouldn't want students to be exposed to all the evidence, to the full range of scientific views, and to be able to make up their own minds, thus improving their critical thinking skills?

When the Dover, Pennsylvania, school district passed a policy requiring the teaching of ID, the Discovery Institute opposed it, favoring a "teach the controversy" approach instead. After the 2005 *Kitzmiller v. Dover* trial ended in a rout for the scientific pretensions of ID, the Discovery Institute attempted to attack the decision, defending the scientific plausibility of ID while simultaneously denying that ID was ready for the classroom. Given the strength of the *Kitzmiller* decision, it is doubtful that the DI will promote any further policies encouraging the teaching of ID. (The details of the *Kitzmiller* decision are discussed in detail in chapter 4.)

We can anticipate that ID advocates nonetheless will promote policies at the school board and state legislative levels that inhibit the teaching of evolution in some fashion. This could be through requiring evolution disclaimers (although such disclaimers have twice been found to be unconstitutional in federal courts), policies requiring that evolution be taught as theory, not fact (with *theory* here understood in the vernacular sense of a hunch or guess), or policies directing teachers to teach the erroneous scientific content on evolution encountered in ID literature. An approach that is appearing in the middle of the first decade of the twenty-first century is to offer permissive policies and/or legislation that allows teachers to present ID or antievolutionism without fear of being punished. These academic freedom bills are intended to encourage

teachers who wish to bring creationism into the curriculum to do so without fear of legal sanction. None of these latter approaches yet has been tested in court.

Antievolutionists are realizing that teaching creation science or intelligent design may be superfluous if teaching straight antievolutionism will do the job of discrediting evolution in favor of a religious view. And this, of course, has been and remains the goal of the antievolution movement, beginning with the Scopes-era focus on banning evolution. Evolution is viewed as atheistic, and religious conservatives believe that its acceptance by students will lead them to abandon their faith. The two-model approach is alive and well: if evolution is disproved, students will naturally default to special creationism.

This is the message of creation science and of intelligent design. It will continue to be the message of whatever evolves from intelligent design in the future.