

# Teaching the Scientific and Philosophical Foundations of Evolution

## Education Panel A:

### Learning the Lay of the Religious and Political Land

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#### **Introduction**

No academic subject in American education generates as much resistance as evolutionary biology. America is the only industrialized country in the world whose citizens argue not only about whether evolution should be taught but about whether it even happened. The cultural debate over evolution—in the world’s most scientifically advanced country—is an incredible phenomenon. Unfortunately, it is one science teachers must confront, and they must do so straightforwardly, without apology and without retreat. Fortunately, law and science are on the side of the teachers, who are charged with educating students about evolution as the debate swirls. The fact that the law is on their side gives them the right to teach evolution. The fact that the science is on their side gives them the obligation to teach it. And while few teachers are optimally equipped with the scientific knowledge and pedagogical skills needed for this task, it is also probably true that even fewer understand fully the cultural and religious agenda of the creationists who are using politics to advance their goals. In addition to knowing science, teachers must know the lay of the religious and political land in order to navigate the cultural minefield that the teaching of evolution has become.

Although creationists have long been a fixture in American society, never—until now—have they infiltrated the country’s educational, cultural, and political mainstream. They are doing so under the guise of intelligent design theory (ID). Headquartered at the Discovery Institute’s Center for Science and Culture, a conservative Seattle think tank, the leaders of the ID movement, calling themselves the “Wedge,” lay out their goals and lines of attack in a document titled “The Wedge Strategy.” It outlines an ambitious plan for challenging the scientific status of evolutionary biology and the naturalistic methodology upon which science necessarily relies. However, rather than challenging evolution with new science, ID proponents—who have produced no science to support their claims—have constructed a well-financed public relations program and an influential network of political supporters who include United States senators and congressmen.

This new breed of creationists has shattered the time-honored truism that higher education is an antidote to pseudoscience. Their supporters include well-credentialed faculty in public and private—including Ivy League—universities, who have subordinated their academic integrity to their religious loyalties in the mistaken belief that evolution and personal piety are antithetical. Although few compared to the tens of thousands of scientists and other academics who accept evolution, these faithful academic followers have placed their credentials and reputations at the service of Wedge politics. They testify before school boards and state boards of education, sign public statements questioning the findings of evolutionary biology, and slip ID into freshman seminars, honors classes, and other courses outside required curricula. Yet, however valuable these pro-ID professors are to the public relations campaign, the Wedge’s ultimate target is secondary education. This means that science teachers must understand the threat ID poses to the students for whose education they are responsible.

Two of the broadest pillars of support for American democracy are public education and separation of church and state. The Wedge strategy threatens both. The first line of attack against science education aims to defeat naturalism. ID proponents reject the naturalistic methodology of science, proposing supernatural (their euphemism is “nonnatural”) explanations for natural phenomena. They argue that

“methodological naturalism”—a fancy term for “scientific method”—is equivalent to “philosophical naturalism,” a view of reality that excludes supernaturalism. The second line of attack is the plan to enter science classes indirectly, through the seemingly innocuous proposal that teachers address evolution’s “strengths and weaknesses.” Inserting this thin end of the wedge will create and opening for the broad end: teaching ID as a solution to the shortcomings of “naturalistic” evolution.

These tactics distort the nature of science and violate constitutional safeguards protecting science education. Methodological naturalism, the search for natural explanations of natural phenomena, means using empirical observation and reason to explain whatever lies within reach of human sensory and cognitive faculties. Since those faculties are insufficient to explain anything beyond the natural world, scientific conclusions necessarily stop short of the supernatural. Since matters of religious faith usually presuppose the supernatural, they lie beyond the scientist’s reach. Naturalistic methodology thus leaves unaddressed the supernatural’s existence or nonexistence. So contrary to ID creationists, methodological naturalism is not equivalent to philosophical naturalism; it leaves everyone, even scientists, free to make personal religious commitments.

ID’s success would initiate a radical realignment of educational and constitutional priorities. If ID creationists succeed in wedging ID—in any of its euphemistic guises—into public school science classrooms, their true agenda will surface quickly. Sympathetic teachers and administrators will be granted a license to teach views consistent with ID creationist orthodoxies. The Wedge leaders’ religious rectitude has channeled them into an offensive, exclusionary posture that will emerge aggressively once constitutional barriers are broken. Two of them, William Dembski and Jay Richards (2001), articulate their vision with jarring simplicity: Christians have a mandate to declare the truth of Christ...[which] consists of bringing every aspect of life under the influence of this truth.”<sup>1</sup> The jurisdiction of this mandate includes public schools, where religious diversity is the norm. Wedge founder Phillip Johnson extends the jurisdiction further:

“Secular society, and particularly the educational institutions, have assumed...that the Christian religion is simply a hangover from superstitious days,” Johnson said. “With the success of intelligent design... we’re going to understand that... the Christians have been right all along—at least on the major elements of the story, like divine creation. And that...is going to change society’s understanding of what constitutes knowledge...”

As a result, Johnson says, it will no longer be plausible to argue that “Christian ideas have no legitimate place in public education, in public lawmaking, in public discussion generally...” (Hartwig, 2001)<sup>2</sup>

For Johnson, “Christian ideas” translate to intelligent design creationism, which he hopes to integrate into the policy governing American public education.

### **Brief Description of the Resources**

These resources will help raise the awareness of science teachers about (1) the religious identity and political strategies of intelligent design, the most recent form of American creationism; (2) the correct understanding of methodological naturalism and philosophical naturalism and the ID movement’s attempt to conflate these concepts; (3) the unconstitutionality of ID creationism; and (4) the viewpoints of scientists who undertake the task of preserving the integrity of their science while maintaining personal religious commitments.

## Details of the Resources

Title	Author	Medium	Grade Level	Publisher	Copyright	Cost/Ordering Information
<i>Creationism's Trojan Horse: The Wedge of Intelligent Design</i>	Barbara Forrest and Paul R. Gross	Book	Postsecondary background resource for teachers	Oxford University Press	2004	\$40.00 Oxford University Press: <a href="http://www.oup.com/us/?view=usa">http://www.oup.com/us/?view=usa</a> ; Amazon.com (\$30.40); and author's Web site: <a href="http://www.creationismstrojanhorse.com">http://www.creationismstrojanhorse.com</a>
"The Wedge of Intelligent Design: Retrograde Science, Schooling, and Society." In Noretta Koertge (Ed.), <i>Scientific Values and Civic Virtues</i> . In press.	Barbara Forrest and Paul R. Gross	Book article	Postsecondary background resource for teachers	Oxford University Press	2005	\$25.00 Oxford University Press: <a href="http://www.oup.com/us/catalog/general/subject/Philosophy/Science/?view=usa&amp;ci=0195172248">http://www.oup.com/us/catalog/general/subject/Philosophy/Science/?view=usa&amp;ci=0195172248</a>
"A Defense of Naturalism as a Defense of Secularism." In Matthew J. Cotter (Ed.), <i>Sidney Hook Reconsidered</i>	Barbara Forrest	Book article	Postsecondary background resource for teachers	Prometheus Books	2004	\$32.00 Prometheus Books: <a href="http://prometheusbooks.com/catalog/book_1544.html">http://prometheusbooks.com/catalog/book_1544.html</a> ; and Amazon.com (\$20.16)
"Is It Science Yet? Intelligent Design Creationism and the Constitution" (Public Law and Legal Theory Working Paper No. 124)	Barbara Forrest, Steven Gey, and Matthew Brauer	Law review article	Postsecondary background resource for teachers	State University College of Law	September 2004	Free Social Science Research Network: <a href="http://papers.ssrn.com/sol3/papers.cfm?abstract_id=590882">http://papers.ssrn.com/sol3/papers.cfm?abstract_id=590882</a> ; and forthcoming in <i>Washington University Law Quarterly</i> , 83, 2005.
U.S. Supreme Court, <i>Edwards v. Aguillard</i> 482 U.S. 578		Supreme Court decision	Postsecondary background resource for teachers		1987	Free FindLaw: <a href="http://caselaw.lp.findlaw.com/cgi-bin/getcase.pl?court=us&amp;vol=482&amp;involve=578">http://caselaw.lp.findlaw.com/cgi-bin/getcase.pl?court=us&amp;vol=482&amp;involve=578</a>
<i>Eight Major Court Decisions against Teaching Creationism as Science</i>	Molleen Matsumura	Pamphlet	Postsecondary background resource for teachers	National Center for Science Education		Free National Center for Science Education: <a href="http://www.ncseweb.org/resources/articles/3747_8_major_court_decisions_against_2_15_2001.asp">http://www.ncseweb.org/resources/articles/3747_8_major_court_decisions_against_2_15_2001.asp</a>
<i>Perspectives on an Evolving Creation</i>	Keith Miller	Book	Postsecondary background resource for teachers	Williams B. Eerdmans Publishing Co.	2003	\$36.00 Eerdmans Publishing: <a href="http://www.eerdmans.com/shop/product.asp?p_key=0802805124">http://www.eerdmans.com/shop/product.asp?p_key=0802805124</a> ; Amazon.com (\$23.76); and author's Web site: <a href="http://www-personal.ksu.edu/~kbmill/Book_Ann.html">http://www-personal.ksu.edu/~kbmill/Book_Ann.html</a>

## Extended Description of the Resources

These resources are not recommended as teaching resources but as background information for teachers who must teach evolution and related subjects (geology, anthropology, etc.) in the face of the advance of intelligent design creationism. The central points that they will help in various ways to reinforce are that (1) American public schools reflect the nation's religious and cultural diversity; (2) public schools must remain secular neutral zones out of respect for both this diversity and the United States Constitution, which governs public policy concerning education; (3) teachers have both the law and science to call upon for support in fulfilling their pedagogical responsibilities; and (4) the scare tactics employed by ID creationists—such as the idea that teaching evolution precludes religious faith—are demonstrably false.

*Creationism's Trojan Horse: The Wedge of Intelligent Design* is the most exhaustive exposé to date of ID as both a continuation of traditional American creationism and an integral part of the religious right's program to undermine public education and secular society. The political strategies and connections of the Wedge are painstakingly explained and carefully documented. The discussion of ID leaders' regressive understanding of science and the exclusionary character of their personal religious views, which form the theological framework of the Wedge, is further developed in "The Wedge of Intelligent Design: Retrograde Science, Schooling, and Society." The law review article by Forrest, Gey, and Brauer analyzes the constitutional, philosophical, and scientific deficiencies of ID creationism. Gey's arguments draw heavily upon the landmark U.S. Supreme Court ruling

*Edwards v. Aguillard* (1987). Both the article and the *Edwards* decision are very readable resources that will enable teachers to understand the legal rationale for the Court's outlawing of creationism in public schools.

*Edwards* is also the ruling in the wake of which ID proponents consciously crafted their Wedge strategy in an effort to skirt constitutional barriers to teaching creationism. The National Center for Science Education's *Eight Major Court Decisions against Teaching Creationism as Science* is a useful summary of federal court rulings prohibiting the teaching of creationism in public schools.

*Perspectives on an Evolving Creation* speaks directly to the ID movement's use of the Wedge metaphor. The metaphor represents the movement's effort to "wedge" supernaturalism as a scientific principle of explanation in to the public mind, thus splitting off and discarding the concept of science as naturalistic. *Perspectives* is unique among recent books relevant to both the evolution/creationism issue and the science and religion dialogue. Composed of essays written by evangelical scientists and scholars, the book is clear evidence that scientists can function with integrity, using science's naturalistic methodology, while maintaining meaningful religious commitments. Their essays show that, while such a choice is not without challenges, they view modern science as both a profession and a source of religious inspiration, not, as do ID proponents, a bothersome obstacle to be cleared from their pathway into American science classrooms.

## Notes

1. Dembski, W. A., & Richards, J. W. (2001). Introduction: Reclaiming theological education. In W. A. Dembski & J. W. Richards (Eds.), *Unapologetic apologetics* (p.18). Downer's Grove, IL: InterVarsity Press.
2. Hartwig, M. (2001, July 18). The meaning of intelligent design. *Boundless*. Retrieved December 14, 2004 from [www.boundless.org/2000/features/a0000455.html](http://www.boundless.org/2000/features/a0000455.html)