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Antievolutionism: Changes and Continuities

EUGENIE C. SCOTT AND GLENN BRANCH

Three themes are constant in the antievolution movement. During the Scopes trial in 1925, William Jennings Bryan contended that evolution is unsupported by, or actually in conflict with, the facts of science; that evolution is intrinsically anti-Christian; and that it is only fair to take the desires of the taxpayers into account while developing the science curriculum. These three pillars of antievolutionism, as we call them, have formed a sturdy platform for antievolutionism from the Great Commoner's time to ours. Claims that evolution is a theory in crisis, that evolution is incompatible with Christianity, and that it is only fair to teach "both sides" appear in any arena in which the antievolution movement is active.

The central arena for the antievolution movement is of course the public-school science classroom. But any public exposition of evolution—whether in public schools or in natural history museums, zoos, or national parks—is sure to elicit a backlash. And when the exposition is national and extensive, as it was for the PBS series *Evolution* (for which our employer, the National Center for Science Education, was a consultant), the backlash is tremendous. Two antievolution organizations, Answers in Genesis (AiG) and the Discovery Institute, attacked the episodes of *Evolution* as they aired in September 2001; both organizations subsequently published book-length critiques of the series. Unsurprisingly, the three pillars of antievolutionism are conspicuous in both.

The AiG response to the *Evolution* series, and also to an article in *Scientific American* criticizing creationism (Rennie 2002), is *Refuting Evolution 2* (Sarfati 2002). As its title suggests, the book is a sequel to *Refuting Evolution* (Sarfati 1999), which criticized the National Academy of Sciences' booklet *Teaching about Evolution and the Nature of Science* (NAS 1998). Sarfati contends that evolution is a theory in crisis; his favorite tactic is to identify a debate within evolutionary biology, to agree with each side's critique of the other, and then to conclude triumphantly that evolution is false. He also implies that evolution is incompatible with Christianity, always referring to Christians who reject AiG's version of

creationism as "professed" Christians or people who "claim" to be Christians. And although he expresses reservations about equal time for creationism in the public schools ("Would Christians want an atheistic teacher to be forced to teach creation, and deliberately distort it?" [Sarfati 2002, p. 31]), he is insistent that the evidence against evolution—which turns out to be the usual creationist claptrap—deserves a hearing there. *Refuting Evolution 2* is a crude piece of propaganda. But there are over 350,000 copies of its predecessor in print, according to AiG, so its shoddiness is no excuse for complacency on the part of the scientific community.

The second book-length attack on the *Evolution* series, *Getting the Facts Straight* (DI 2001), was produced by the Discovery Institute, notorious as the institutional home of the intelligent-design form of antievolution. More literate, more subtle, and less shrill than Sarfati's book, *Getting the Facts Straight* is still a highly unreliable guide to both the history and the science of evolution. (See, e.g., Moore [2001] for a castigation of the Discovery Institute's historical critique of the *Evolution* series, and Pond and Pond [2002] for a refutation of the Discovery Institute's claim that the exceptions to the universality of the genetic code constitute evidence against the thesis of common descent.) As in *Refuting Evolution 2*, the three pillars of antievolutionism are on conspicuous display: *Getting the Facts Straight* complains that the *Evolution* series ignores "the growing body of scientists who contend that Darwinism is in trouble with the evidence," that Darwinism is by definition incompatible with divine "design and direction," and that the producers of the series are unfairly attempting to "influence local school boards to grant exclusive control to a controversial theory" (DI 2001).

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Thus the three pillars of antievolutionism are present in, and indeed central to, both of what are now the major varieties of antievolutionism: young-Earth creationism (YEC) and intelligent design. Of course, these two forms of antievolutionism also have their differences.

Young-Earth creationism and intelligent design

Answers in Genesis, for which Sarfati is a spokesperson, is a ministry devoted to advocating YEC. Expounded in the 1920s by the Seventh-Day Adventist geologist George McCready Price and subsequently popularized by Henry M. Morris, founder of the Institute for Creation Research, YEC regards the creation story of Genesis as perfectly accurate and thus holds that the universe and Earth were created about 10,000 years ago, that Earth was inundated by Noah's flood, and that all living things were created specially by God to reproduce "after their kind," thus setting limits on evolution. Wanting to portray YEC as scientifically tenable, its adherents often refer to it as "creation science" or "scientific creationism," thus downplaying its religious message.

The audience for YEC is the approximately 30 percent of Americans who accept a conservative, more or less literalist theology; they are mainly born-again Protestants, with a smattering of charismatic Catholics. In the media, adherents of YEC are often stereotyped as rural, Southern, and uneducated—"guitar-strumming hillbillies," as a spokesperson for the Discovery Institute once undiplomatically characterized them (Carter 2001). But there are highly educated adherents of YEC as well, as illustrated in Ashton's anthology *In Six Days* (2001), which presents the personal testimony of 50 people with PhDs who accept YEC. Antievolutionists are fond of amassing lists of PhDs who reject evolution, thus showing that evolution is a "theory in crisis"; but arguments from authority are unconvincing, especially when, as here, the authorities are both dubious (there are few biologists represented) and hugely outnumbered by those on the other side. Yet *In Six Days* is in its way a remarkable ethnographic document that students of YEC ought not to overlook.

A series of court decisions, culminating in the Supreme Court's decision in *Edwards v. Aguillard* (1987) that creationism was a religious view, were fatal to any ambition of young-Earth creationists to eliminate evolution from or to introduce creationism into the public schools. Consequently, YEC degenerated further into a parade of revival meetings, debates held to inspire the faithful, pseudoscientific books published by small sectarian presses, and proprietary creationist-only conferences. But as YEC was losing its oomph, a new form of antievolutionism—intelligent design—was emerging that downplayed the Bible in favor of a modernization of William Paley's argument from design. Intelligent design, or ID, appealed to old-Earth creationists who were uncomfortable

with the unfavorable public image and incessantly zany science of YEC; moreover, it offered at least the prospect of a form of antievolutionism able to survive constitutional scrutiny. (Thus ID is a fine example of adaptive radiation into a vacated niche.)

What, then, is ID? A useful if propagandistic primer is *Signs of Intelligence* (Dembski and Kushner 2001). Most of the essays in this collection appeared originally in *Touchstone*, which describes itself as "a journal of mere Christianity." Still, in his introduction, William Dembski insists that "the opposition of design theories to Darwinian theory rests in the first instance on strictly scientific grounds" (p. 12). Evolution (or "Darwinian theory," whatever that is supposed to be) is presented as a theory in crisis. Would the contributors know even if it were? Of the 14, only one is a working biologist: biochemist Michael J. Behe, whose contribution recycles his argument from *Darwin's Black Box* (1996). What's truly remarkable about *Signs of Intelligence* is that its contributors are riding their own hobbyhorses in all directions with no common goal—except, of course, to argue that evolution is a

theory in crisis, that evolution is incompatible with religion, and that those who accept evolution are flouting public opinion.

Signs of Intelligence is typical of the ID movement in failing to present a model of what happened when. Although young-Earth creationists have their differences, they agree on the basics

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of YEC. Proponents of ID, however, seek to maintain a big tent in which all antievolutionists are welcome. (Well, almost all: the recent public rejection of "Darwinism" and endorsement of ID by the Raelian UFO cult was received with stony silence.) Usually any antievolutionist is clasped to the ID bosom. The embrace is not necessarily mutual; traditional young-Earth creationist organizations such as AiG and the Institute for Creation Research regard ID as useful in the narrow fight against evolution but not in the broader fight to win souls for Jesus. Yet there are young-Earth creationists (such as Paul Nelson and John Mark Reynolds, both of whom contributed to *Signs of Intelligence*) who are fixtures in the ID movement; they are evidently following Phillip Johnson's advice to argue about the age of Earth only after evolution is defeated (Stafford 1997).

Like YEC, ID initially aspired to scientific respectability. But, almost 20 years after the publication of what Dembski takes to be a founding document of ID (Thaxton et al. 1984), there is still no scientific literature applying ID to scientific problems. Instead, ID is essentially parasitic on science, interpreting it—and misinterpreting it (NCSE 2002)—to its own ideological ends. Increasingly, ID's career seems to be following the arc of YEC: Its proponents are publishing their articles and books primarily in sectarian venues, engaging in debates and conferences for the benefit of the faithful, amassing lists of people with PhDs who are skeptical of evolution, and—because there is no clear judicial ruling on its constitutionality yet—

engaging in activism with the intent of promoting ID in the public school classroom. (Here the big-tent strategy is invaluable: Young-Earth creationists are the foot soldiers of antievolutionism, and the ID movement cannot afford to alienate them.) In *School Board News*, we stated that “school board members and administrators would be ill-advised to include ID in the public school science curriculum. If the scholarly aspect of ID becomes established—if ID truly becomes incorporated into the scientific mainstream—then, and only then, should school boards consider whether to add it to the curriculum” (Scott and Branch 2002, p. 5). In a posting on his personal Web page, Dembski countered: “My sentiments were largely the same. But I’ve come to reject this view entirely.... If ID is going to succeed as a research program, it will need workers, and these are best recruited at a young age” (Dembski 2002a).

Making sense of it all

The scientific community must keep its collective eye on antievolutionism as it evolves, for science suffers if the public understanding of science suffers. By now, 78 years after the Scopes trial, there is a veritable industry of explaining, analyzing, and criticizing the antievolution movement. Here we describe some of the noteworthy contributions that appeared in 2001, 2002, and the first quarter of 2003.

Intelligent Design Creationism and Its Critics (Pennock 2001) is a hefty anthology that comprehensively addresses the ID movement from (as the subtitle promises) philosophical, theological, and scientific perspectives. Pennock’s earlier *Tower of Babel* (1999) remains the most important philosophical evaluation of ID available. *Evolution and the Wedge of Intelligent Design* (Forrest and Gross 2003) is a combative yet rigorous exposé of the attempts to establish ID as a viable alternative to evolution in the eyes of the public, arguing that ID’s “wedge” strategy is “one of the most remarkable examples in our time of naked public relations management substituting successfully for knowledge.” As valuable as these books are, they are not for the philosophically faint of heart or for the reader who is wholly new to the controversy over ID in particular or antievolutionism in general. For such readers, a historical overview is needed, now that Ronald L. Numbers’s definitive study *The Creationists* (1992) is a decade out of date.

Fortunately, there are two useful supplements to *The Creationists* available: *Where Darwin Meets the Bible* (2002), by Larry Witham, a reporter for the *Washington Times*, and *Species of Origins* (2002), by Karl Giberson and Donald Yerxa, both professors at Eastern Nazarene University. As participants in the controversy ourselves, we have occasional reservations about the emphases, interpretations, and conclusions of these two books, but without a doubt both are eminently worthwhile. A professional journalist, Witham provides a lively and anecdotal account based on his wide reading and personal interviews with many of the principal players on both the antievolution and the evolution sides. Although they also rely on personal interviews, Giberson and Yerxa concentrate

on published work, devoting three chapters solely to expounding a classic of YEC; thus, although they cover more or less the same material as Witham, their perspective on the debate is markedly academic.

Two recent noteworthy contributions to a theology of evolution come from a Catholic theologian and from a team of Protestant—mostly evangelical—scientists, historians, and theologians who unreservedly accept evolution.

For a truly synoptic view of the intellectual backdrop, Michael Ruse’s *Darwin and Design* (2003)—the final volume in a trilogy containing *Monad to Man* (1996) and *Mystery of Mysteries* (1999)—is just the ticket. Ruse explains in exhilarating detail how the attempts to explain the apparent design of the biological world have shaped the history of biology from Plato and Aristotle to the present day. In his final chapter, “Turning Back the Clock,” he cleanly dissects the arguments for ID, characterizing Dembski’s *No Free Lunch* (2002b) as relying on a mainstay argument of YEC that evolution is astronomically improbable. Ruse then suggests that the future of a rapprochement between Christianity and evolution is not with the heirs of natural theology à la Paley but with the development of a “theology of nature” that appreciates, rejoices in, and trembles before evolution, whether or not evolution is conceived of as God’s work.

Two recent noteworthy contributions to a theology of evolution come from a Catholic theologian and from a team of Protestant—mostly evangelical—scientists, historians, and theologians who unreservedly accept evolution. John F. Haught’s *God after Darwin* (1999) was a major contribution to the theology of evolution; his insights are distilled in a convenient catechistic format in his *Responses to 101 Questions on God and Evolution* (2001). *Perspectives on an Evolving Creation*, edited by Keith B. Miller (2003), explores evolution and the theological issues it poses for the evangelical Christian, seeking to respect both “the authority of Scripture and the integrity of the scientific enterprise.” Both books have little time for either the science or the theology of YEC; Haught is especially critical of ID as well, asking, “If we have to appeal to the notion of God every time we meet an impasse in scientific inquiry, what is the point of doing science at all?” (2001, p. 89). As a pillar of antievolutionism, the claim that evolution is incompatible with Christianity is as flimsy as the claim that evolution is unscientific.

For those who are worried about encountering antievolutionism in the classroom, the late John A. Moore’s *From Genesis to Genetics* (2002) is a basic introduction that traces the history of the controversy; it joins the ranks of previous refutations of YEC. A more *au courant* treatment, including a discussion of ID, is offered by Massimo Pigliucci’s *Denying*

Evolution (2002). As its subtitle—"Creationism, Scientism, and the Nature of Science"—suggests, Pigliucci's book is often philosophical in nature, but there is also useful scientific and pedagogical material to be found in it, especially its clear refutation of *Icons of Evolution* (Wells 1999), a particularly egregious attack on evolution by a proponent of ID. The best reference for teachers is *Defending Evolution* (Alters and Alters 2001), intended for use as a practical manual covering scientific, religious, legal, and pedagogical issues concerning the teaching of evolution. Its treatment of the "fairness" pillar of antievolution is especially useful. We recommend *Defending Evolution* to anyone wishing to improve the understanding of evolution in the public schools.

But improving the understanding of evolution ought not be limited to the public schools. A marvelous opportunity is afforded by "Darwin Day," celebrated every 12 February in a steadily increasing number of venues—including schools, universities, and museums—around the world. *Darwin Day Collection One: The Single Best Idea, Ever* (Chesworth et al. 2002) is a massive collection of essays about Darwin, evolution, and evolution education, published under the auspices of the Darwin Day Program (1 February 2003; www.darwinday.org), a nonprofit organization that coordinates Darwin Day events. (Both of us have contributions in the collection.) We encourage the readers of *BioScience* to organize their own Darwin Day celebrations to educate the public about evolution and its importance. The solution to the problem of antievolutionism is, ultimately, education—in science, in the philosophy of science, and even in theology. And education, like charity, begins at home.

References cited

- Alters BJ, Alters SM. 2001. *Defending Evolution: A Guide to the Evolution/Creation Controversy*. Sudbury (MA): Jones and Bartlett.
- Ashton J, ed. 2001. In *Six Days: Why Fifty Scientists Choose to Believe in Creation*. Green Forest (AR): Master Books.
- Behe MJ. 1996. *Darwin's Black Box: The Biochemical Challenge to Evolution*. New York: Free Press.
- Carter M. 2001. Lab scientists challenging Darwin: "Intelligent design" theory supports a thoughtful creator. *Tri-Valley Herald*. 26 September. (1 February 2003; www.reviewevolution.org/press/fromPress_SciencalDarwin.php)
- Chesworth A, Hill S, Lipovsky K, Snyder E, Chesworth W, eds. 2002. *Darwin Day Collection One: The Single Best Idea, Ever*. Albuquerque (NM): Tangled Bank Press.
- Dembski WA. 2002a. Then and only then: A response to Mike Gene. (1 February 2003; www.designinference.com/documents/2002.07.Mike_Gene.htm)
- . 2002b. *No Free Lunch*. Lanham (MD): Rowman and Littlefield.
- Dembski WA, Kushiner JM, eds. 2001. *Signs of Intelligence: Understanding Intelligent Design*. Grand Rapids (MI): Brazos Press.
- [DI] Discovery Institute. 2001. *Getting the Facts Straight: A Viewer's Guide to PBS's Evolution*. Seattle: Discovery Institute Press.
- Forrest BC, Gross PR. 2003. *Evolution and the Wedge of Intelligent Design: The Trojan Horse Strategy*. New York: Oxford University Press.
- Giberson KW, Yerxa DA. 2002. *Species of Origins: America's Search for a Creation Story*. Lanham (MD): Rowman and Littlefield.
- Haught JF. 1999. *God after Darwin: A Theology of Evolution*. Boulder (CO): Westview.
- . 2001. *Responses to 101 Questions on God and Evolution*. Mahwah (NJ): Paulist Press.
- Miller KB, ed. 2003. *Perspectives on an Evolving Creation*. Grand Rapids (MI): Eerdmans.
- Moore J. 2001. Discover history: The DI's historical distortions. *Reports of the National Center for Science Education* 21 (5–6): 17–20.
- Moore JA. 2002. *From Genesis to Genetics: The Case of Evolution and Creationism*. Berkeley: University of California Press.
- [NAS] National Academy of Sciences. 1998. *Teaching about Evolution and the Nature of Science*. Washington (DC): National Academy Press.
- [NCSE] National Center for Science Education. 2002. Analysis of the Discovery Institute's bibliography. (1 February 2003; www.ncseweb.org/resources/articles/3878_analysis_of_the_discovery_inst_4_5_2002.asp)
- Numbers RL. 1992. *The Creationists: The Evolution of Scientific Creationism*. Berkeley: University of California Press.
- Pennock RT. 1999. *Tower of Babel: The Evidence against the New Creationism*. Cambridge (MA): MIT Press.
- , ed. 2001. *Intelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives*. Cambridge (MA): MIT Press.
- Pigliucci M. 2002. *Denying Evolution: Creationism, Scientism, and the Nature of Science*. Sunderland (MA): Sinauer Associates.
- Pond F, Pond J. 2002. Variations in the genetic code: Evolutionary explanations. *Reports of the National Center for Science Education* 22 (5): 24–30.
- Rennie J. 2002. 15 answers to creationist nonsense. *Scientific American* 287: 78–85.
- Ruse M. 1996. *Monad to Man: The Concept of Progress in Evolutionary Biology*. Cambridge (MA): Harvard University Press.
- . 1999. *Mystery of Mysteries: Is Evolution a Social Construction?* Cambridge (MA): Harvard University Press.
- . 2003. *Darwin and Design: Does Evolution Have a Purpose?* Cambridge (MA): Harvard University Press.
- Sarfati J. 1999. *Refuting Evolution: A Response to the National Academy of Sciences' Teaching about Evolution and the Nature of Science*. Green Forest (AR): Master Books.
- . 2002. *Refuting Evolution 2*. Green Forest (AR): Master Books.
- Scott EC, Branch G. 2002. "Intelligent design" not accepted by most scientists. *School Board News* 22 (10): 2, 5.
- Stafford T. 1997. The making of a revolution. *Christianity Today* 41 (14): 16.
- Thaxton CB, Bradley WL, Olsen RL. 1984. *The Mystery of Life's Origin: Reassessing Current Theories*. New York: Philosophical Library.
- Wells J. 1999. *Icons of Evolution: Science or Myth?* Washington (DC): Regnery.
- Witham L. 2002. *Where Darwin Meets the Bible: Creationists and Evolutionists in America*. New York: Oxford University Press.