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The Persistent Presence of Creationism in the United States

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Of all the controversies that have contributed to the contentious saga of modern science, few have been so persistent as those that have taken place in the United States over evolution. For 150 years, beginning with Darwin's publication of *On the Origin of Species* and continuing until today, Americans have debated the theory of evolution, sparking deep divisions in popular opinion and continuing struggles over public policy. While the debaters have changed, the divisions have remained remarkably consistent, so that since 1982 when George Gallup began to question respondents on their views of evolution, surveys have consistently shown that between 45 and 50% of Americans believe God created human life, as described in the Book of Genesis, sometime within the past 10,000 years (Newport 2006). Moreover, according to a 2005 Pew poll, some 64% of Americans would like to see such creationist explanations taught alongside evolutionary ones in public schools, while another 38% expressed the view that creationism should be taught instead of evolution (Pew Forum 2005). While close analysis suggests that the presentation and wording of questions can elicit some variation in results, virtually every survey taken over the last quarter century has shown that fewer than one in five Americans believe that the theory of evolution can explain the creation and development of life on earth (Bishop 2006; Plutzer and Berkman

2008, 544–546). The findings are particularly striking because they stand in such stark contrast to those of other developed nations. Thus in a recent review of studies done in no fewer than 32 European countries and Japan from 2001 to 2005, the United States ranked second to last (scoring higher only than Turkey) in popular acceptance of evolution (Miller, *et al*. 2006, 765).

For decades scholars have been seeking explanations for creationism's extraordinary presence in this country. Their studies have focused on a variety of factors. Among them, they have considered creationism's psychological (Altemeyer 1996), sociological (Eve and Harrold 1991), and cultural characteristics (Hunter 1991). They have described its religious roots (Marsden 1980; Roberts 1988; McCalla 2006), its conceptions of science (Numbers 2006), and its legal and political strategies (Larson 2003; Lienesch 2007). They have investigated the everyday lives of the people who believe in it (Toumey 1994). Yet creationism continues to surprise us by its popularity and its power. In spite of all we know about it, as one observer has put it, we still do not entirely understand "what makes these people tick" (Scott 1997, 265).

In this chapter, I offer another attempt, albeit brief, at explaining how and why creationism is able to exert such influence. In doing so, I build on much of the existing scholarship, while also taking the distinctive tack of treating creationism as a political movement. I define a political movement as a group of people who come together to create a collective identity, establish networks and organizations, frame issues, and carry on an active agenda aimed at influencing public policy. Using a selection of recent sources, I analyze some of the most significant characteristics of this movement, discuss its political agenda, and evaluate its continuing potential to influence the teaching of evolution. In closing, I also comment on the strengths and weaknesses of the contemporary creationist movement, and speculate on its implications for the future of science education.

Characteristics

Any account of the creationist movement must begin by describing its roots in conservative religion. By all measures, the United States is a highly religious nation in which popular religiosity takes a strongly conservative cast. Opinion surveys consistently show that in contrast to other developed nations, overwhelming majorities of Americans

believe in God, identify themselves as members of religious groups, and say religion is important in their personal lives (Pew Forum 2008). Furthermore, their religious beliefs tend to reflect conservative Christian views of scripture, with 80% of General Social Survey respondents saying that the Bible should be understood as the word of God, and more than one third believing that it should be taken literally, word for word (National Opinion Research Center 2006). Under the circumstances, it is not surprising to find near majorities holding the literal biblical view of a seven-day creation and a 10,000-year-old earth (Newport 2006). Among religious groups, conservative evangelical and fundamentalist Christians are most supportive of this position, with approximately 70% saying that living things have always existed in their present form (Pew Forum 2005). Other factors play a role, with older, less educated, and more Southern populations being somewhat more inclined to accept creationist explanations, and African-Americans and women being about 10% more likely than white males to hold these views (Duncan and Geist 2004, 28). Nevertheless, studies have shown that higher levels of education (the steady increase over the last quarter century in those with more than a high-school degree) have had no discernable effect on popular support for creationism over that time, suggesting that what matters most about creationists is less what they know about the origin of the world than what they believe about it (Bishop 2007, 13–14). Indeed, creationism may be understood best as a phenomenon based not only on belief but also on identity, in that it provides both the assurance of a purposeful Creator and a clear sense of self and social meaning. In the words of one advocate, the belief in the biblical doctrine of creation is at the center, the very core of a "God-ordained worldview" (Deckard 2002).

In mobilizing and organizing movement members, creationists turn to an elaborate infrastructure of institutions. From the early 20th century on, antievolutionists have been active in establishing an extensive network of ministries, scientific research institutes, and popular outreach organizations. Media ministries like Ken Ham's Answers in Genesis reach millions of followers through television, radio, and the Internet, where its "family" of creation websites provides blogs, podcasts, and video-on-demand, while also offering creationist merchandise from bibles to baseball caps. Research centers like Henry Morris's Institute for Creation Research not only support creationist scientists but also organize conferences, publish journals, and sponsor

expeditions to sites like Mount Ararat, the purported resting place of Noah's Ark. Other organizations have combined study and outreach, notably the Discovery Institute's Center for Science and Culture, a Seattle-based think tank that is known best for its advocacy of the idea of Intelligent Design. Supported by small donors, religious foundations, and conservative philanthropists like Howard and Roberta Ahmanson, these institutions boast annual budgets that run into the tens of millions of dollars (Wilgoren 2005). At present over 300 websites promote various versions of creationism, many of them in multiple languages. Ham's Creation Museum, a $27-million complex located outside Cincinnati that includes life-sized dioramas of the Garden of Eden in which Adam and Eve appear alongside dinosaurs, attracted several hundred thousand visitors in its first year alone (Rothstein 2007). And in 2008, the independent documentary film *Expelled*, which advocates Intelligent Design and claims that Darwinism was responsible for the Holocaust, grossed over 7 million dollars (Foust 2008). According to one scholar, building creationist institutions has long been a "booming business" (Moore 1997).

The creationist movement has been particularly successful in framing the debate over evolution. Creationists come in many varieties, ranging from biblical literalists who believe the earth to be only a few thousand years old to proponents of various versions of day-age, gap, and progressive creationism who accept an ancient universe but deny that it is the product of evolution (Numbers 2006, 6–14). Although debates among the various schools have continued on and off for decades, contemporary creationists have become adept at diverting attention from their own disagreements by focusing instead on evolution's supposed shortcomings. Conflating diverse conceptions of evolutionary theory, they have found common ground in their criticism, raising the same well-worn objections to its methods (such as carbon dating), its findings (principally gaps in the fossil record), and its fundamental principles (e.g., uniformitarianism). Drawing on popular misunderstandings, they have been able to reach beyond their core constituency of conservative Christians, building support among others—including even some secularists—by caricaturing evolution as a process in which people evolve from monkeys. Encouraging suspicion of science and its practitioners, and pointing to outspoken atheists in the scientific community, they have found easily identifiable enemies in scientists and science educators. Perhaps their most effective strategy has been to insist that evolution has moral implications,

that it destroys families, encourages lawlessness, and leads to social evils ranging from abortion to pornography. Indeed, in extending the frame of evolution, advocates of creationism have applied it to define their political enemies as well. As one North Carolina creationist remarked, "The homosexual gay rights movement is very evolutionary. The women's movement is very evolutionary. The civil rights movement is very evolutionary. All these things have their roots in evolution" (quoted in Toumey 1994, 203).

Political Agenda

American creationism is politically powerful, in large part because of the commitment and persistence of movement activists. From the early 20th century when antievolutionists came out of their churches and into the public realm, they have been active at every level of American politics. Although least visible in national politics, creationists have been prominent in larger conservative coalitions, asserting their agendas in umbrella groups like the Christian Coalition, Concerned Women for America, or Focus on the Family. They have also established a presence in the Republican Party, where nearly six of every ten members in a recent survey said that they believe living things have always existed in their present form (Pew Research Center 2005). At the state level, where most education policy is set, they have worked through legislatures, state school boards, and departments of public instruction to influence statewide educational standards and the selection of textbooks. With the passage of "No Child Left Behind," legislation requiring establishment and regular review of statewide educational standards, the states have become battlegrounds for creationist campaigns, as seen best in Kansas where the State Board of Education has been embroiled in evolution debates for much of the last decade (Davey and Blumenthal 2006). Finally, aided by support from conservative Christian legal organizations, activists have turned increasingly to the local level where they have brought pressure on community school boards, principals, and teachers across the country, carrying on the fight, as one science teacher puts it, "school district by school district" (quoted in Schmidt 1996, 421).

As a political movement, creationism has been remarkably resilient, particularly in its ability to adapt to constitutional and legal setbacks. Required to work within limits set by the establishment clause of the first amendment of the Constitution, activists have found themselves

consistently on the losing side in court cases that have declared the teaching of creationism in public school science classrooms to be unconstitutional. Repeatedly rebuffed in cases such as *Epperson v. Arkansas* (1968), *Edwards v. Aguillard* (1987), and *Kitzmiller v. Dover Area School District* (2005), they have each time responded by adopting new legal strategies to maintain their movement. In the 1960s and 1970s, led by hydrologist Henry Morris, they recast creationism as "creation science," reading the fossil record as scientific proof of an ancient Noachian flood. A decade later, emulating the Federal Communication Commission's "equal time" provision, they championed bills to provide for "balanced treatment" in the teaching of creation and evolution. In the 1990s, drawing on breakthroughs in cell biology, and again attempting to make their case in scientific rather than religious terms, they contended that certain genetic structures were "irreducibly complex," the product not of random mutation but of Intelligent Design or "ID." At about the same time, Phillip E. Johnson, a born-again evangelical and professor at Berkeley's Boalt Hall School of Law, was appealing for a new approach, labeled the "wedge strategy," according to which activists pound away little by little at cracks in the theory of evolution with the intention of eventually splitting the entire tree of naturalistic science (Forrest 2001, 30–43). In the wake of Judge John E. Jones's scathing indictment of Intelligent Design in *Kitzmiller v. Dover*, many of today's creationists have extended Johnson's piecemeal perspective, abandoning advocacy of any particular creation theory (including ID) in favor of approaches that call for teachers to "teach the controversy," critically discuss evolution's "strengths and weaknesses," or simply allow "a full range of views" (Matzke and Gross 2006, 29–34). With every new strategy comes new commitment, as creationists have not only redefined their aims but redoubled their efforts, coming back each time a little stronger, says sociologist Amy Binder (2007, 555), "like a wounded soldier with even more fight in him."

Similarly, creationists have been innovative in introducing new political tactics. Like their legal strategies, these tactics often arise in response to setbacks. Blocked by the courts, activists lobby in the legislatures, most recently for "academic freedom" bills providing protection for teachers and students who express views critical of evolution (Beil 2008). Limited in their leverage there, they turn to state boards of education, where they seek to omit or water down references to evolutionary theory from state science standards, restrict its teaching to "microevolution" rather than "macroevolution," or remove questions

about evolution from statewide tests, thereby assuring that few teachers will bother to teach it (Tobias 1999). When textbooks include discussions of evolution, creationists call for disclaimers, like the labels that appeared for years in the front of Alabama science books warning students that since "no one was present when life first appeared on earth" it "should be considered as theory, not fact" (Alabama Citizens for Science Education 2005). Alternatively, they lobby publishers to provide electronic publishing-on-demand, so that local school boards can request customized texts that contain no references to the topic (Schmidt 1996, 421). In schools, they draw from an ever-expanding toolbox of tactics: challenging curriculum or the choice of science texts, demanding "opt-out" provisions for students who object to being taught about evolution, donating supplementary sources like the creation-friendly *Of Pandas and People* to biology classrooms and school libraries, providing students with lists of "10 Questions to Ask Your Biology Teacher," sponsoring after-school "creation clubs," and more. When one tactic fails, they try another or invent something new. The goal, says critic Eugenie Scott, in each case is the same: that "teachers will eventually just stop teaching evolution. It'll just be too much trouble" (quoted in Slack 2007).

Continuing Influence

Given its popularity and power, it should come as no surprise that the creationist movement has had a substantial effect on public policy. Although creationists have never been able to replicate the legislative successes of the 1920s, they continue to exercise their influence in science classrooms across the country. Thus in the most recent national study of state science standards, the Thomas F. Fordham Foundation found the treatment of evolution to be sorely lacking, with standards in some nineteen states described as "weak-to-reprehensible" (Lerner 2000, vii). Even in states that score high on their evolution standards, such as Indiana, studies show that over 40% of high-school biology teachers avoid or only briefly mention the theory (Rutledge and Mitchell 2002, 22). More surprising is that a 2008 national survey found that one quarter of all biology teachers devoted classroom time to creationism of some kind, and of these nearly half considered it to be a "valid scientific alternative" to evolution (Berkman, *et al.* 2008, 922). When questioned about the absence of evolution in their courses, some 27% of biology teachers in one state study said they felt unqualified to

teach it, with 15% telling researchers that they did not recall ever hearing the word in their college biology courses (Aguillard 1999, 184). More important, those who teach the theory report growing resistance from principals, parents, and students (Moore and Kramer 2005, 462–463). Faced with certain confrontation from creationists, reports biologist Randy Moore, many simply avoid the issue by "not quite getting around" to teaching it (2001, 39). The result, conclude the authors of the 2008 national survey, is that while the teaching of evolution is "winning in the courts," it is "losing in the classroom" (Berkman, *et al*. 2008, 921).

Yet for all its influence, creationism remains limited in its impact. In spite of decades of effort, antievolutionists have been unable to remove evolution entirely from American schools, let alone insert creationist teachings in its place. Moreover, the political obstacles they face continue to be considerable. These begin with the fact that candidates who advocate creationism tend to be controversial and polarizing, demonstrating little appeal among mainstream voters. In the early 1990s, conservative political strategist Ralph Reed attempted to circumvent this weakness with his so-called "stealth strategy," advising such candidates to downplay or avoid mentioning their opposition to evolution, only to find that once elected and their views revealed, many were recalled or voted out in the next election (Deckman 2004, 83–85). Then there are the problems posed by the coalitional character of politics, as seen in the fact that creationism's allies among social conservatives have often proven fickle friends, more interested in their own issues than in evolution. Even more damaging are the divisions that exist among antievolutionists themselves, with conflicts between advocates of various versions of creation surfacing in occasional acrimony. "All you do is attack evolution," biblical literalist Kurt Wise has complained publicly to Phillip Johnson. "You do not propose an alternative. This is a wimp's way out" (quoted in Witham 2003, 68). Perhaps most important, creationists have formidable political enemies among evolutionists. Organized in professional associations, science education centers, and state and local watchdog groups, and aided by legal defense organizations like the ACLU, advocates for evolution constitute a determined and effective countermovement, and they are committed to checking creationism, in the words of Eugenie Scott, "until the last fire is out" (quoted in NCSE 2008).

Nevertheless, creationists will continue to make their case. Throughout its history, the creationist movement has been regularly

renewed, as activists have responded to setbacks by shifting strategies and redefining goals. Today, in the wake of the *Kitzmiller* decision, the process of renewal goes on. Since 2008, debates over evolution have taken place in thirteen states, and in Louisiana an "academic freedom" bill was passed and signed into law. This bill allows teachers to use supplemental texts to help students "understand, analyze, critique and review" scientific theories that include not only evolution but also "the origins of life, global warming, and human cloning" (Louisiana Science Education Act 2008). There is surely more to come. For in spite of continuing opposition and repeated setbacks, creationists have made it clear that this movement is not going away. Says Kansas pastor Terry Fox: "We're in it for the long haul" (quoted in Slevin 2005).

References

Aguillard, Donald. 1999. Evolution in Louisiana public schools: A decade following *Edwards v. Aguillard*. *American Biology Teacher* 61:182–188.

Alabama Citizens for Science Education. 2005. Information about the Alabama "evolution warning label." www.alscience.org/disclaimer.html.

Altemeyer, Bob. 1996. *The authoritarian specter*. Cambridge, MA: Harvard University Press.

Beil, Laura. 2008. Opponents of evolution adopting a new strategy. *New York Times*, June 4.

Berkman, Michael B. *et al*. 2008. Evolution and creationism in America's classrooms: A national portrait. *PLoS Biology* 6:920–924. www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2386841.

Binder, Amy. 2007. Gathering intelligence on intelligent design: Where did it come from, where is it going, and how should progressives manage it? *American Journal of Education* 113:549–576.

Bishop, George. 2006. Polls apart on human origins. *Public Opinion Pros*. www.publicopinionpros.com/features/2006/aug/bishop.asp.

Bishop, George. 2007. Evolution, religion, and the "culture war" in American politics. Paper presented to the annual meeting of the American Political Science Association.

Davey, Monica, and Ralph Blumenthal. 2006. Fight over evolution shifts in Kansas school board. *New York Times*, August 3.

Deckard, Steve. 2002. High school students' attitudes toward creation and evolution compared to their worldview. Institute for Creation Research. www.icr.org/article/309/.

Deckman, Melissa M. 2004. *School board battles: The Christian right in local politics*. Washington, DC: Georgetown University Press.

Duncan, Otis Dudley, and Claudia Geist. 2004. The creationists: How many, who, and where? *Reports of the National Center for Science Education* 24:26–33.

Eve, Raymond A., and Francis B. Harrold. 1991. *The creationist movement in modern America*. Boston, MA: Twayne Publishers.

Forrest, Barbara. 2001. The wedge at work: How intelligent design creationism is wedging its way into the cultural and academic mainstream, In *Intelligent design creationism and its critics: Philosophical, theological, and scientific perspectives*, ed. Robert T. Pennock, 5–53. Cambridge, MA: MIT Press.

Foust, Michael. 2008. "Expelled" producer happy with box office. *Baptist Press*. www.bpnews.net/BPnews.asp?ID=27976.

Hunter, James Davison. 1991. *Culture wars: The struggle to define America*. New York: BasicBooks.

Larson, Edward J. 2003. *Trial and error: The American controversy over creation and evolution*. 3rd ed. Oxford: Oxford University Press.

Lerner, Lawrence S. 2000. Good science, bad science: Teaching evolution in the states. Thomas F. Fordham Foundation. www.edexcellence.net/doc/lerner.pdf.

Lienesch, Michael. 2007. *In the beginning: Fundamentalism, the Scopes trial, and the making of the antievolution movement*. Chapel Hill: University of North Carolina Press.

Louisiana Science Education Act. 2008. Louisiana Senate Bill 733. SLS 08RS-1629. www.legis.state.la.us/billdata/streamdocument.asp?did=482728.

Marsden, George M. 1980. *Fundamentalism and American culture: The shaping of twentieth-century evangelicalism, 1870–1925*. Oxford: Oxford University Press.

Matzke, Nicholas J., and Paul R. Gross. 2006. Analyzing critical analysis: The fallback antievolutionist strategy. In *Not in our classrooms: Why intelligent design is wrong for our schools*, ed. Eugenie C. Scott and Glenn Branch, 28–56. Boston, MA: Beacon Press.

McCalla, Arthur. 2006. *The creationist debate: The encounter between the Bible and the historical mind*. London: T. & T. Clark International.

Miller, Jon D. *et al.* 2006. Public acceptance of evolution. *Science* 313:765–766.

Moore, Randy. 1997. The business of creationism. *American Biology Teacher* 59:196.

Moore, Randy. 2001. Educational malpractice: Why do so many biology teachers endorse creationism? *Skeptical Inquirer* 25:40–41.

Moore, Randy, and Karen Kramer. 2005. The teaching of evolution and creationism in Minnesota. *American Biology Teacher* 67:457–466.

National Center for Science Education (NCSE). 2008. NCSE videos about creationism heat up debate on YouTube. www.ncseweb.org/resources/news/2008/ZZ/441_ncse_videos_about_creationism__4_23_2008.asp.

National Opinion Research Center. 2006. General Social Survey. Association of Religious Data Archives. www.thearda.com/quickStats/qs_107.asp.

Newport, Frank. 2006. American beliefs: Evolution vs. Bible's explanation of human origins. *Gallup News Service*. www.gallup.com/poll/21811/American-Beliefs-Evolution-vs-Bibles-Explanation-Human-Origins.aspx.

Numbers, Ronald L. 2006. *The creationists: From scientific creationism to intelligent design*. Expanded ed. Cambridge, MA: Harvard University Press.

Pew Forum on Religion and Public Life. 2005. Public divided on origins of life. Pew Research Center for the People and the Press. http://people-press.org/reports/pdf/254.pdf.

Pew Forum on Religion and Public Life. 2008. U.S. religious landscape survey. Pew Research Center. http://religions.pewforum.org/pdf/report-religious-landscape-study-full.pdf.

Pew Research Center Pollwatch. 2005. Reading the polls on evolution and creationism. Pew Research Center for the People and the Press. http://people-press.org/commentary/?analysisid=118.

Plutzer, Erik, and Michael Berkman. 2008. Evolution, creationism, and the teaching of human origins in schools. *Public Opinion Quarterly* 72:540–553.

Roberts, Jon H. 1988. *Darwinism and the divine in America: Protestant intellectuals and organic evolution*. Madison: University of Wisconsin Press.

Rothstein, Edward. 2007. Adam and Eve in the land of dinosaurs. *New York Times*, May 24.

Rutledge, Michael L., and Melissa A. Mitchell. 2002. High school biology teachers' knowledge structure, acceptance, and teaching of evolution. *American Biology Teacher* 64:21–28.

Schmidt, Karen. 1996. Creationists evolve new strategy. *Science* 273: 420–422.

Scott, Eugenie C. 1997. Antievolution and creationism in the United States. *Annual Review of Anthropology* 26:263–289.

Slack, Gordy. 2007. The evolution of creationism. *Salon.com*. www.salon.com/news/feature/2007/11/13/intelligent_design.

Slevin, Peter. 2005. Battle on teaching evolution sharpens. *Washington Post*, March 14.

Tobias, Suzanne Perez. 1999. Standards' effects could evolve slowly. *Wichita Eagle*, August 12.

Toumey, Christopher P. 1994. *God's own scientists: Creationists in a secular world*. New Brunswick, NJ: Rutgers University Press.

Wilgoren, Jodi. 2005. Politicized scholars put evolution on the defensive. *New York Times*, August 21.

Witham, Larry A. 2003. *Where Darwin meets the Bible: Creationists and evolutionists in America*. New York: Oxford University Press.