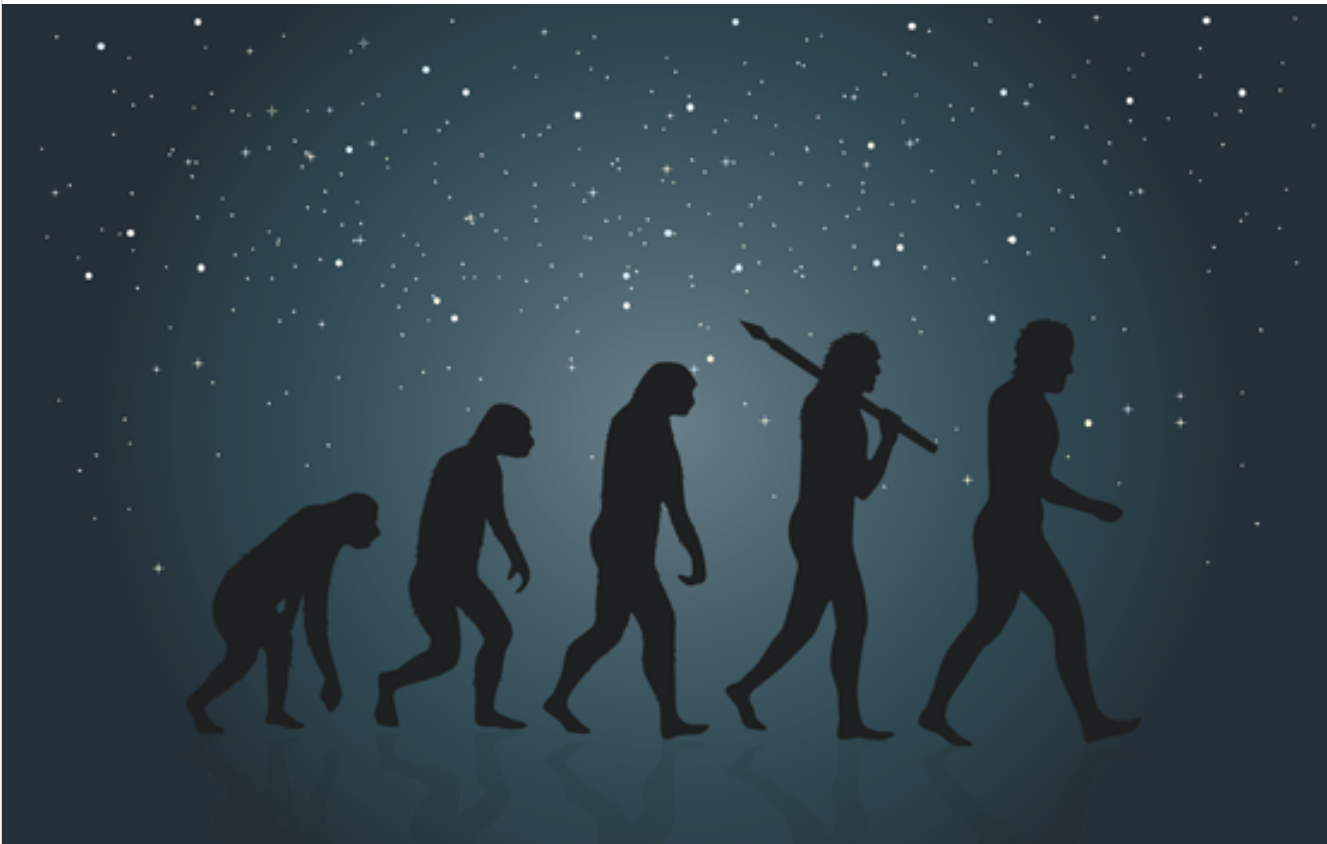


Anti-intellectualism and anti-evolutionism: Lessons from Hofstadter

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By understanding the motivations behind objections to teaching evolution, science educators can teach evolution more effectively.

Richard Hofstadter's classic *Anti-intellectualism in American Life* (1963) dissects the anti-intellectualism that runs through American history, with anti-evolutionism perhaps the most vivid example among the cases he examines. Fifty years after Hofstadter's death in 1970, the specter of anti-evolutionism still haunts the American scene, especially in science education. What connection did Hofstadter discern between anti-intellectualism and anti-evolutionism in the past, what developments have occurred in the half-century since Hofstadter's death, and to what extent is his analysis helpful in understanding the present situation? And what, if anything, can Hofstadter's analysis contribute toward the improvement of science education in the future?

Hofstadter's assessment of anti-evolutionism

Hofstadter addresses anti-evolutionism primarily in Chapter 5 of *Anti-intellectualism in American Life*. The chapter, titled "The Revolt against Modernity," focuses on the struggle between fundamentalists and modernists in American Protestantism in the first quarter of the 20th century, culminating — in his telling — in Dayton, Tennessee, in 1925, where John T. Scopes was convicted of violating Tennessee's Butler Act, which banned the teaching of evolution in the public schools. Hofstadter (1963) writes, "It was in the crusade against the teaching of evolution that the fundamentalist movement reached its climax and in the Scopes trial that it made its most determined stand" (p. 125).

How, in Hofstadter's view, is anti-intellectualism connected to anti-evolutionism? Daniel Rigney (1991) explains that Hofstadter's book "suggests three analytically distinct types of anti-intellectualism: religious anti-rationalism, populist anti-elitism, and unreflective instrumentalism" (p. 434). Unsurprisingly, Hofstadter presents religious anti-rationalism as the most salient factor behind anti-evolutionism: "The effort to stop the teaching of evolution represented an effort to save the religion of their children . . . from the ravages of the evolutionists, the intellectuals, the cosmopolitans" (p. 126).

But Hofstadter also shrewdly discerned in the writings of William Jennings Bryan, a leader of the anti-evolution campaign of the 1920s, a steady populist appeal in opposition to the scientific elite: "In Bryan's mind the question of the teaching of evolution in the schools was a challenge to popular democracy" (Hofstadter, 1963, p. 128). The instrumentalist charge that evolution is speculative and useless, although unmentioned by Hofstadter, was also a factor: In Bryan's planned but undelivered closing address in the Scopes trial, he complained that the teaching of evolution "diverts attention from pressing problems of great importance to trifling speculation" (Bryan, 1925, p. 333).

Hofstadter notes that although "the evolution controversy seems as remote as the Homeric era to intellectuals in the East" (p. 129), it was very much alive in other parts of the country. As evidence, he cites a national survey of teenager opinion in which just over a third of respondents agreed that humanity evolved from "lower forms of animals" (Hofstadter, 1963, p. 130, citing Remmers & Radler, 1957). He also observes that textbooks and teachers of the day were guarded on the subject of evolution. Examples, although not presented in Hofstadter's book, are not hard to find. In 1963, for instance, Texas demanded that the sentence "To biologists there is no longer any reasonable doubt that evolution occurs" be removed from a textbook submitted for state approval (Webb, 1994, p. 133). And a contemporary survey found that two out of three high school science teachers believed that a teacher could teach biology effectively without teaching evolution (Behnke, 1961).

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Although Hofstadter might not have been surprised to learn that anti-evolutionism continued in the 50 years after his death, he appears not to have anticipated that it would increasingly disguise its anti-intellectual underpinnings. He acknowledges that "the leading anti-intellectuals are usually men deeply engaged with ideas, often obsessively engaged with this or that outworn or rejected idea" (p. 21), but he shows no signs of having entertained the possibility that the foes of evolution would eventually begin to strategically and systematically portray their opposition to evolution as itself intellectual in nature.

Creation science and intelligent design

The Scopes-era bans on teaching evolution began to collapse not long after the publication of *Anti-intellectualism in American Life*. Tennessee repealed the Butler Act in 1967, the Supreme Court ruled a similar statute in Arkansas to be unconstitutional in 1968, and the Mississippi Supreme Court struck down the last remaining ban in 1970. Anti-evolutionists promptly regrouped. Instead of calling for bans on the teaching of evolution, they called for the teaching of evolution to be *balanced* — balanced, that is, with the teaching of creation science, which is in essence a recasting of the creation accounts of Genesis into a supposedly scientific form.

In the 1970s and early 1980s, bills requiring the teaching of creation science were introduced in the legislatures of dozens of states. In both Arkansas and Louisiana, such legislation was enacted in 1981 — and promptly challenged in the federal courts. The expert witnesses testifying on behalf of creation science in *McLean v. Arkansas* (1982) were unable to convince the district court judge, who concluded that the statute's only aim was to promote religion, unconstitutionally. Examining the Louisiana statute, which defined creation science only in the vaguest of terms, the Supreme Court similarly held in *Edwards v. Aguillard* (1987) that the teaching of creation science lacked a clear secular purpose.

A creation science counter-establishment — a panoply of institutes, museums, societies, journals, and conferences, to say nothing of a few dozen colleges where creation science is taught — still persists. But immediately beneath the scholarly veneer of such programs is a rough-hewn faith in the inerrancy of the Bible even on matters of science, requiring the rejection of a vast amount of established scientific knowledge. The Creation Research Society requires its members to subscribe to a statement of belief describing the Bible as the inspired word of God, for example, while *Answers Research Journal* evaluates submissions for, among other things, consistency with its preferred method of interpreting Scripture.

As the Louisiana lawsuit wound its way to its end, a different supposed alternative with which to balance the teaching of evolution — intelligent design — was under development. Seeking to formulate a position capable of surviving constitutional scrutiny, the proponents of intelligent design generally tried to avoid overt invocations of religious considerations, even while adopting a subset of creation science’s arguments against evolution. (For example, intelligent design’s favorite example of a supposedly unevolvable structure, the bacterial flagellum, was a favorite example of creation science a generation previously [Morris, 2005].) When a local school board in Dover, Pennsylvania, decided to require the teaching of intelligent design, a lawsuit resulted, with the district court judge ultimately ruling in *Kitzmiller v. Dover Area School District* (2005) that teaching intelligent design in the public schools is unconstitutional.

Like creation science, intelligent design maintains a counter-establishment. But unlike creation science, intelligent design is generally careful not to require any particular faith commitment for participation — although it is telling that a network of campus-based intelligent design clubs, now moribund, specifically required aspiring club leaders to be Christians (Brown, 2006). The intelligent design counter-establishment is not as productive, popular, or prosperous as the creation science counter-establishment, largely because creation science is willing to appeal overtly to the religious predilections of its base and intelligent design by and large is not.

Belittling: Anti-evolutionism’s fallback strategy

Around 2002, as it was becoming apparent that intelligent design was not likely to survive constitutional scrutiny, its proponents began to segue to a fallback strategy: calling for policies that would require or permit teachers in the public schools to belittle evolution as “just a theory” or as scientifically “controversial” or as in special need of “critical analysis.” Such catchphrases were not new to the anti-evolutionist arsenal, to be sure: “Just a theory,” in particular, dates to before the Scopes trial in 1925. What was new was the use of such catchphrases unaccompanied by any reference to supposed alternatives to evolution, whether creation science or intelligent design.

A particularly popular version of the fallback strategy involves academic freedom bills. These bills typically permit teachers to discuss the scientific “strengths and weaknesses” of “controversial” theories mentioned in the state science education standards — and to forbid administrators from exercising any oversight. Which theories are deemed controversial in such legislation? Often evolution is specifically mentioned, either by itself or in the company of the origin of life, global warming, and human cloning, but even when such a bill offers no definition or inventory of controversial theories, it is usually apparent that evolution is the primary target.

Since 2004, more than 80 academic freedom bills have been introduced in state legislatures across the country (Matzke, 2016), with relatively few successes: Mississippi in 2006, Louisiana in 2008, and Tennessee in 2012. Owing to the radical decentralization of American education, it is unclear to what extent teachers in these states have taken advantage of the license thus afforded them to miseducate their students about evolution. But 13% of public high school biology teachers nationally present creationism as scientifically credible (Berkman, Pacheco, & Plutzer, 2008), suggesting that a significant fraction of teachers may welcome such legislation.


The anti-intellectual underpinnings of the belittling strategy are disguised not by a counter-establishment, as with creation science and intelligent design, but by the co-option of the vocabulary of the intellectual. The most prominent instance is the slogan “teach the controversy,” appropriated from a distinguished professor of English and education who later complained that his idea was “hijacked by the Christian Right as a thinly-veiled pretext for imposing their religious dogma on the schools” (Graff, 2005). In selecting their catchphrases, the belittlers of evolution might have indeed read Hofstadter himself, who described intellect as “the *critical*, creative, and contemplative side of mind,” which “examines, ponders, wonders, theorizes, *criticizes*, [and] imagines” (Hofstadter, 1963, p. 25, emphasis added), and who moreover literally wrote the book on academic freedom (Hofstadter & Metzger, 1955).

Today’s true defenders of the principles of academic freedom recognize the misuse of academic freedom by the belittlers. The American Association of University Professors (2008) describes academic freedom bills such as those enacted in Mississippi, Louisiana, and Tennessee as not only “counter to the overwhelming consensus regarding evolution” but also “inconsistent with a

proper understanding of the meaning of academic freedom.” Moreover, science teachers in the public schools are already expected to promote critical thinking, logical analysis, and objective discussion of the scientific topics they discuss, inviting the question of why such bills are thought to be necessary.

The selective focus of the supporters of these bills best reveals their anti-intellectual nature. A particularly striking case occurred in Florida in 2008, when a state senator, Ronda Storms, introduced Senate Bill 2692, a standard academic freedom bill targeting evolution. Her commitment to academic freedom was tested when a colleague proposed to extend the bill to also protect age-appropriate sex education. Predictably, Storms objected (saying “I’m concerned about prematurely deflowering kindergartners and first and second graders”!) — demonstrating her lack of fidelity to the principle for which she was supposedly so concerned (Haught, 2014, pp. 203-204).

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How to improve the effectiveness of evolution education

Is there anything to learn from *Anti-intellectualism in American Life* about the continuing problem that anti-evolutionism poses for science education? On the one hand, Hofstadter seems to have been pessimistic about the prospect of eradicating anti-intellectualism from American life in general: “Anti-intellectualism,” he suggested in the concluding chapter of his book, “is founded in the democratic institutions and the egalitarian sentiments of this country” (p. 407). On the other hand, despite its pessimism, such a verdict is compatible with the possibility of holding the line — and even making advances — against the forces of anti-intellectualism.

There is clear evidence of improvement in the public understanding and acceptance of evolution since Hofstadter’s day. In 2005, 66% of teenagers in a national survey regarded evolution at least as possible (Hill, 2014, p. 583); in 2007, 82% of high school biology teachers disagreed with the statement that “It is possible to offer an excellent general biology course for high school students that includes no mention of Darwin or evolutionary theory” (Berkman, Pacheco, & Plutzer, 2008); and today’s high school biology textbooks are forthright about evolution — one of the most popular proclaims, “Evolutionary theory provides the best scientific explanation for the unity and diversity of life” (Miller & Levine, 2010, p. 447).

So progress is possible. But with only 65% of the American public accepting evolution, as opposed to 99% of American research scientists (Pew Research Center, 2015), there is clearly a need for further progress. And Hofstadter points the way. Recalling Rigney’s (1991) distinction among three types of anti-intellectualism — “religious anti-rationalism, populist anti-elitism, and unreflective instrumentalism” (p. 434) — it is possible to identify three corresponding strategies for countering the damaging influence of anti-intellectualism on science education. These strategies are already in use in many schools and classrooms, to be sure, but there is doubtless room for further development and wider dissemination.

To allay the sentiment that evolution is speculative and useless, which springs from the unreflective instrumentalist type of anti-intellectualism, it is helpful to emphasize that in fact evolution is practically important. David P. Mindell (2006) explains in the introduction to his book on the modern indispensability of evolution that “Evolution informs agriculture, medicine, public health, environmental health, natural resource management, human understanding, and even the pursuit of justice within the legal system.” Survey research suggests that citing the medical relevance of evolution is particularly effective with the public (Coalition of Scientific Societies, 2008).

To allay the sentiment that evolution is taught dogmatically by the acolytes of a scientific priesthood, which springs from the populist anti-elitist type of anti-intellectualism, it is essential for students to encounter evolution through inquiry-based learning. Such an approach — promoted by the best educational resources, such as the Next Generation Science Standards (NGSS Lead States, 2013) — aims at helping students appreciate the processes as well as the results of contemporary scientific inquiry. Students who study evolution — or any area of science — in such a way “will not have been told how to think; they will have learned to think for themselves” (Reid, 2019).

And to allay the sentiment that teaching evolution is a threat to the faith of students, which springs from the religious anti-rationalist type of anti-intellectualism and which continues to be the most influential factor in anti-evolutionism, it is valuable for teachers to emphasize the diversity of religious opinions on evolution — while not, of course, endorsing any particular opinion (Barnes & Brownell, 2017). Students and their parents are frequently unaware that there are people who share their religious faith while

accepting the science of evolution, including both scientists like Francis Collins (Giberson & Collins 2011), the director of the National Institutes of Health, and religious leaders like Pope Francis (2014). Merely making students and parents aware of such possible models is helpful in diminishing the perceived threat.

Perhaps, as Barbara Forrest (2019) suggests, the arc of history bends toward teaching evolution. But there is no reason for complacency, especially when the forces of anti-evolutionism persist. The fallback strategy of anti-evolutionism has yet to receive a definitive rebuke in the courts. Even the legal defeats of creation science and intelligent design are at risk, with two recent appointments to the federal judiciary — Steven Gras on the Eighth Circuit and Lawrence VanDyke on the Ninth Circuit — bringing a history of sympathy for creationism with them to the bench (Alliance for Justice, 2020). The story of anti-evolutionism in the United States is by no means over.

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