Twenty Questions: What Have the Courts Said about the Teaching of Evolution and Creationism in Public Schools?

RANDY MOORE, MURRAY JENSEN, AND JAY HATCH

Although the Scopes trial remains the most famous court decision associated with the teaching of evolution, there have been many other important court decisions associated with the teaching of evolution and creationism in public schools. An understanding of these decisions can help teachers answer students’ questions about the teaching of evolution and creationism. Such an understanding can also be used to counter the antiscience attitudes and actions of creationist parents, school administrators, and colleagues.

Keywords: court decisions, creationism, evolution, science education

We have staked the very existence of our country on the faith that complete separation between the state and religion is best for the state and best for religion. If nowhere else, in the relation between Church and State, good fences make good neighbors.

—Justice Felix Frankfurter in McCollum v. Board of Education (1948)

I want you to have all the academic freedom you want, as long as you wind up saying the Bible account [of creation] is true and all others are not.

—Television preacher and university administrator Jerry Falwell (1979)

A lthough the United States is one of the most scientifically and technologically advanced countries in the world, most US citizens continue to question or reject evolution and want creationism to be taught in public schools (Glanz 2000, Moore 2002a, 2002b). Public manifestations of this widespread, deep support for the teaching of creationism—and the discrediting of evolution that inevitably accompanies creationism (see McLean v. Arkansas Board of Education [1982], p. 19)—often make headlines, as evidenced by recent stories entitled “School District Supports Intelligent Design” (NCSE 2002a), “‘Creation Science’ Class Requested” (NCSE 2002b), and “‘Draft Ohio Standards Allow Debate on Evolution” (Hoff 2002). When students hear about these and other evolution-related stories (or see the play or movie version of Inherit the Wind), they often have questions about the legal issues associated with the evolution–creationism controversy. For example, hasn’t the US Supreme Court endorsed the teaching of “evidence against evolution”? If parents want their children to be taught creationism and evolution at school, shouldn’t teachers teach both? That is, shouldn’t teachers teach creationism if they also teach evolution (see discussions in Moore 2002a, 2002b)?

These and other questions about the teaching of evolution are often posed not only by students, parents, and school administrators, but also by science teachers. Although many biology teachers question evolution and want to teach creationism (and in some cases actually do teach creationism; see LeVake v. Independent School District No. 656 [2000], Moore
2001), others avoid evolution altogether because they are confused about the subject or the legal aspects of teaching it. For example, at the 2002 annual meeting of the National Association of Biology Teachers, teachers asked one speaker whether any court has issued a decision regarding “intelligent design” and whether teachers can give creationism “equal time” in their classes if students’ parents want the teachers to discuss creationism. Unbeknownst to the speaker and teachers, these and other questions related to the teaching of evolution and creationism have already been addressed by the US court system.

As editor of The American Biology Teacher, one of us (Moore) is often deluged with questions from teachers about legal issues associated with the teaching of evolution and creationism. In this article, we answer 20 of the most common of these questions. An understanding of these questions can help science teachers not only answer students’ questions about the teaching of evolution but also resist the antiscience efforts of creationist parents, school administrators, and colleagues who want to force their religious ideology into science classrooms. Detailed histories and expanded legal analyses of each of these cases are provided elsewhere (Moore 2002a, Moore and Miksch 2003).

1. Can teachers be required by school administrators to read aloud a disclaimer saying that their teaching of evolution is not meant to dissuade students from accepting the biblical version of creation?

No. In Freiler v. Tangipahoa Parish Board of Education (1999), the Fifth Circuit Court of Appeals ruled that it is unconstitutional to require teachers to read aloud disclaimers stating that, among other things, the teaching of evolution is “not intended to influence or dissuade the Biblical version of Creation.” The court ruled that such disclaimers (a) are “intended to protect and maintain a particular religious viewpoint, namely belief in the Biblical version of creation,” (b) are “contrary to an intent to encourage critical thinking,” (c) do not advance freethinking or sensitivity to and tolerance of diverse beliefs, and (d) endorse religion “by disclaiming the teaching of evolution in such a manner as to convey the message that evolution is a religious viewpoint that runs counter to...other religious views.”

2. Wasn’t it once illegal to teach evolution in the United States?

No; there have been no laws that have banned all teaching of evolution. However, Tennessee, Arkansas, and Mississippi passed laws in the 1920s that banned the teaching of human evolution (the most famous of these laws was Tennessee’s Butler Law, passed in 1925, which was used to convict coach and substitute science teacher John Scopes in 1925). As noted by the Tennessee Supreme Court in John Thomas Scopes v. The State of Tennessee, “It thus seems plain that the Legislature in this enactment only intended to forbid teaching that men descended from a lower order of animals” and that “the act...deals with nothing but the evolution of man from a lower order of animals.” Teaching students about the evolution of nonhuman organisms has never been a crime.

3. Weren’t laws banning the teaching of human evolution struck down by the Scopes trial in 1925?

No. Although the Tennessee Supreme Court noted that the law used to prosecute John Scopes “was not drafted with as much care as could have been drafted,” the constitutionality of the law was upheld in a split decision in 1927 (John Thomas Scopes v. The State of Tennessee). The American Civil Liberties Union searched for several years for another volunteer to test the constitutionality of the antievolution laws but could not find one. After the Scopes trial, the laws banning the teaching of human evolution in Tennessee, Arkansas, and Mississippi remained in effect for more than 40 years.

4. The Scopes trial is the most famous event in the history of the evolution–creationism controversy and is one of the most important events of the 20th century. From a legal point of view, what did it accomplish?

Nothing. Scopes’s misdemeanor conviction (John Thomas Scopes v. The State of Tennessee) in 1925 was later overturned, but the law used to convict Scopes remained in effect until 1967.

5. Is it still illegal to teach human evolution anywhere in the United States?

No. In 1968, the US Supreme Court ruled unanimously in Epperson v. Arkansas that (a) the First Amendment to the US Constitution does not permit a state to require that teaching and learning must be tailored to the principles or prohibitions of any particular religious sect or doctrine, and (b) laws banning the teaching of evolution are unconstitutional because they seek “to prevent...teachers from discussing the theory of evolution because it is contrary to the belief of some that the Book of Genesis must be the exclusive source of doctrine as to the origin of man.” In 1970, Mississippi became the last state to nullify its ban on the teaching of human evolution.

6. If students claim that evolution is incompatible with or offensive to their religious beliefs, must teachers modify their teaching to accommodate the students’ right to religious freedom?

No. In Wright v. Houston Independent School District (1978), the first lawsuit to be initiated by creationists, a student’s mother claimed in 1970 that the Houston Independent School District had violated her daughter’s constitutional rights by (a) teaching evolution without referring to other theories, and (b) teaching evolution as an endorsement of a “religion of secularism” that implied her daughter’s beliefs in creationism were wrong (thereby inhibiting her free exercise of religion). According to the lawsuit, there was little difference between the Arkansas ban on the teaching of evolution and the Houston Independent School District’s attempt to avoid teaching
creationism, because neither policy was religiously neutral (as demanded by Epperson v. Arkansas). Wright’s lawsuit was dismissed before reaching trial when the Fifth Circuit Court of Appeals ruled that (a) the school district’s teaching of evolution was unlike the censorship imposed by Arkansas before Epperson v. Arkansas in that there was no evidence the school district discouraged the free discussion of ideas; (b) the school district had not promoted secularism as a religion; (c) Wright’s proposed solution of “equal time” for creationism was “an unwarranted intrusion into the authority of public school systems to control the academic curriculum”; and (d) the free exercise of religion is not accompanied by a right to be insulated from scientific findings incompatible with one’s religious beliefs. As had been noted in Epperson v. Arkansas, “there is and can be no doubt that the First Amendment does not permit prohibitions of any religious sect or dogma,” and there can be no legitimate state interest in protecting particular religions from scientific views “distasteful to them.” This point was later emphasized in Segraves v. State of California (1981), in which the Sacramento Superior Court ruled that classroom discussions of evolution did not violate students’ free exercise of religion. Science teachers should not be expected to avoid scientific issues on which a religion claims expertise.

7. Can the government use public funds to promote the teaching of evolution?

Yes. In 1973, writer and evangelist William Willoughby—acting in what he called “the interests of forty million evangelistic Christians in the United States”—sued the director of the National Science Foundation and others for funding the pro-evolution textbooks produced in the 1960s by the Biological Sciences Curriculum Study (BSCS). Willoughby claimed that the use of tax money to support the textbooks was establishing “secular humanism” as the “official religion of the United States.” Willoughby’s lawsuit (Willoughby v. Stever [1972]) was dismissed in 1973 by the DC Circuit Court of Appeals on the grounds that BSCS’s decidedly pro-evolution books disseminated scientific findings, not religion. Governmental agencies such as the National Science Foundation may use tax money to disseminate scientific findings, including those related to evolution.

8. If the government uses public funds to support science textbooks that promote evolution, must it also provide funds to support textbooks that promote creationism?

No. In Willoughby v. Stever (see above), the DC Circuit Court of Appeals ruled that publicly funded science textbooks may not be tailored to particular religious beliefs. Similarly, the Georgia Court of Appeals ruled in 2001 that it is not unconstitutional for schools to use a textbook stating that “creationism is not a scientific theorem capable of being proven or disproven through scientific methods” (Moeller v. Schrenko).

9. If the government uses public funds to produce public exhibits that promote evolution, must it also provide funds to produce public exhibits that promote creationism?

No. In Crowley v. Smithsonian Institution (1980), retired missionary Dale Crowley Jr. claimed that an exhibit entitled The Emergence of Man: Dynamics of Evolution at the Smithsonian Institution’s Museum of Natural History was establishing the religion of secular humanism and forcing fundamentalists to choose between violating their religious views by entering the museum or abandoning their right to access public property. Crowley demanded that either the exhibit be closed or the Smithsonian give equal money and space for an exhibit promoting the biblical story of creation. The DC Circuit Court of Appeals ruled that the Smithsonian (a) had treated evolution as science, not religion, and (b) had not restricted the exercise of religion, noting that “the plaintiffs can carry their beliefs into the Museum with them, though they risk seeing science exhibits that are contrary to that faith.”

10. Do teachers have a First Amendment right to teach creationism in science classes of public schools, even if school boards specify that teachers are to teach evolution?

No. In Webster v. New Lenox School District #122 (1990), social studies teacher Ray Webster claimed that the New Lenox School District violated his First Amendment and Fourteenth Amendment rights by prohibiting him from teaching the Christian version of creationism in his classes. Webster claimed that, at most, he was merely encouraging students “to explore alternative viewpoints.” Relying on Edwards v. Aguillard and its conclusion that “families entrust public schools with the education of their children, but condition their trust on the understanding that the classroom will not purposely be used to advance religious views,” the Seventh Circuit Court of Appeals ruled that “Mr. Webster [does] not have a First Amendment right to teach creation science in a public school,” because creation science is a form of religious advocacy. Similarly, schools can require teachers “to refrain from expressions of religious viewpoints in the classroom and like settings” (Bishop v. Aronov [1991]), and the Seventh Circuit Court of Appeals, in upholding a teacher’s dismissal, ruled that a teacher does not have a First Amendment right to teach creationism and that schools have a constitutional duty to make certain that teachers do not inculcate religion (Hellend v. South Bend Community School Corporation [1996]). As noted in 1979 in Palmer v. Board of Education, “There is a compelling state interest in the choice and adherence to a suitable curriculum for the benefit of our young citizens and society. It cannot be left to individual teachers to teach what they please.”
11. If teachers teach evolution, must they also provide “equal time” for creationism?
No. In McLean v. Arkansas Board of Education (1982), Federal Judge William Overton ruled that the Arkansas law requiring “equal time” for creationism was unconstitutional (according to the “Lemon test” established in Lemon v. Kurtzman [1971]), that it was based on “an inescapable religiosity,” and that it “advanced particular religious beliefs.” In 1987, the US Supreme Court ruled (by a vote of 7 to 2) in Edwards v. Aguillard that Louisiana’s law requiring “balanced treatment” for creationism was also unconstitutional and “facially invalid” because it was meant “to restructure the science curriculum to conform with a particular religious viewpoint” and that “the goal of providing a more comprehensive science curriculum is not furthered either by outlawing the teaching of evolution or by requiring the teaching of creation science.... Requiring schools to teach creation science with evolution does not advance academic freedom.” These cases, combined with Daniel v. Waters (which in 1975 overturned Tennessee’s “Genesis Act” that required public schools to give equal emphasis to evolution and the Genesis version of creation), doomed future attempts by legislatures to require “equal time” and “balanced treatment” for creationism in public schools (Moore and Miksch 2003).

12. What have the courts said about the educational merits of “creation science”?
In McLean v. Arkansas Board of Education, Federal Judge William Overton ruled that “creation science has no scientific merit or educational value as science.” Instead of being scientists, the creationists “take the literal wording of the Book of Genesis and attempt to find scientific support for it.... A theory that is by its own terms dogmatic, absolutist, and never subject to revision is not a scientific theory.” Later, in Edwards v. Aguillard, the US Supreme Court ruled that creation science is a nonphilosophical theory that “embodies the religious belief that a supernatural creator was responsible for the creation of mankind.”

13. If students, their parents, school administrators, and taxpayers all want me to teach evolution as well as creationism, can I teach them both? What’s wrong with providing students with an alternate point of view? Isn’t teaching both creationism and evolution only fair?
There are numerous problems with this reasoning. First, the popularity of creationism is irrelevant to the question of whether it should be taught in public schools. As Judge Overton noted in McLean v. Arkansas Board of Education, “The application and content of the First Amendment principles are not determined by public opinion polls or by a majority vote. Whether the proponents of [teaching creationism] constitute the majority or the minority is quite irrelevant under a constitutional system of government. No group, no matter how large or small, may use the organs of government, of which the public schools are the most conspicuous and influential, to foist its religious beliefs on others.” Second, it is unconstitutional to teach creationism (Edwards v. Aguillard and McLean v. Arkansas Board of Education). Third, creation science is not science (McLean v. Arkansas Board of Education; see below). Teachers discredit evolution if they counterbalance the teaching of evolution with the teaching of creationism (Edwards v. Aguillard). Finally, although most people in the United States want their children to be exposed to creationism in school (Glanz 2000), there are countless different creation stories. These stories may be appropriate in comparative religion classes, but they are not appropriate in science classes. Since the US Constitution requires that public schools be religiously neutral, a teacher cannot present any particular creation story as being more “true” than others. Courts have often been required to invalidate statutes that advance religion in public elementary and secondary schools (e.g., Wallace v. Jaffree [1985; Alabama law authorizing a moment of silence for school prayer]; Stone v. Graham [1980; posting a copy of the Ten Commandments in public schools]; Abington School District v. Schempp [1963; daily reading of the Bible]; Engel v. Vitale [1962; reciting a denominationally neutral prayer]).

14. Is “creation science” really science?
No. In McLean v. Arkansas Board of Education, Federal Judge William Overton ruled that “creation science is simply not science,” is “not guided by natural law,...is not explanatory by reference to natural law, is not testable, and is not falsifiable.... If the unifying idea of supernatural creation by God is removed [from Arkansas law requiring “equal time” for creationism], the remaining parts of the law] explain nothing and are meaningless assertions.”

15. Can a school district stop a teacher from teaching creationism in a science class? If the teacher refuses to teach evolution, can the teacher be reassigned?
Yes. In Webster v. New Lenox School District #122, the Seventh Circuit Court of Appeals ruled that a school district can ban a teacher from teaching creationism. As noted in Edwards v. Aguillard and John E. Peloza v. Capistrano Unified School District (1994), “the Supreme Court has held unequivocally that while the belief in a divine creator of the universe is a religious belief, the scientific theory that higher forms of life evolved from lower forms is not.”

16. Can a school require that a teacher teach evolution? If so, doesn’t this violate a teacher’s right to free speech?
In 1991, John Peloza was teaching creationism and promoting conservative Christianity in his biology classes at Capistrano High School in Orange County, California. When parents and teachers complained about Peloza’s behavior, Peloza was reprimanded. Peloza then sued the school district,
claiming it was violating his right to free speech and forcing him to teach the religion of evolution. In John E. Pelozza v. Capistrano Unified School District, the Ninth Circuit Court of Appeals ruled in 1994 that (a) the school district had acted appropriately in demanding that Pelozza not teach creationism, (b) teachers cannot teach their own curriculum if it violates the state's educational guidelines, and (c) "since the evolutionist theory is not a religion, to require an instructor to teach this theory is not a violation of the Establishment Clause.... [The claim] that the teaching of evolution would be a violation of the Establishment Clause is unfounded."

17. Hasn't the US Supreme Court endorsed the teaching of the alleged “evidence against evolution”? No. However, in the minority opinion of Edwards v. Aguillard, US Supreme Court Justice Antonin Scalia argued that “the people of Louisiana, including those who are Christian fundamentalists, are quite entitled, as a secular matter, to have whatever scientific evidence there may be against evolution presented in their schools, just as Mr. Scopes was entitled to present whatever scientific evidence there was for it.” Although the majority of the Court concluded that Louisiana’s antievolution law was unconstitutional, it also noted that “we do not imply that a legislature could never require that scientific critiques of prevailing scientific theories be taught” and that “teaching a variety of scientific theories about the origins of humankind to school children might be validly done with the clear secular intent of enhancing the effectiveness of science instruction” (see discussion in Moore and Miksch 2003).

18. Does a teacher’s right to free speech entitle him or her to teach the alleged “evidence against evolution” that Justice Scalia cited?
No. In the late 1990s, biology teacher (and creationist) Rodney LeVake taught the alleged “evidence against evolution” to his students, because he believed that evolution is “impossible,” that it is not science, and that there is “no evidence to show that [evolution] actually occurred.” When LeVake was reassigned, he sued. In LeVake v. Independent School District No. 656 (2002), the Minnesota Court of Appeals upheld District Judge Bernard Borene’s ruling, noting that “a school board’s decision to assign a public school teacher to teach a different class because the teacher refused to teach his former assigned class according to the curriculum established by the school board did not violate the teacher’s right to free exercise of religion. A public school teacher’s right to free speech as a citizen does not permit the teacher to teach a class in a manner that circumvents the prescribed course curriculum established by the school board when performing as a teacher.... The established curriculum and LeVake’s responsibility as a public school teacher to teach evolution in the manner prescribed by the curriculum overrides his First Amendment rights as a private citizen.”

19. Can teachers teach creationism in science classes if their school district adopts a course textbook that promotes creationism?
No; the teaching of creationism in science classes of public schools is unconstitutional. Moreover, public schools may not adopt creationism-based textbooks. In the early 1970s, the West Clark Community Schools (Indiana) adopted the creationism-based textbook Biology: A Search for Order in Complexity (Moore 1974). This textbook, which claimed to be for biology teachers wanting a “balanced treatment” of issues related to origins, promoted the Christian version of creation, while proclaiming that “there is no way to support the doctrine of evolution.” When Jon Hendren questioned the constitutionality of using the book, Indiana Superior Court Judge Michael T. Dugan ruled in Hendren v. Campbell (1977) that creationism-based biology textbooks are unconstitutional, because their use (a) advances a specific religious point of view, and (b) ensures “the prospect of biology teachers and students alike being forced to answer and respond to continued demand for correct fundamentalist Christian doctrine in public schools.” It is unconstitutional to adopt a sole science course textbook that promotes creationism, because such textbooks are sectarian in content and entangle the state with religion (Moore and Miksch 2003).

20. Schools in Ohio, Georgia, and elsewhere are considering adding “intelligent design” to their science curriculum. When will a court be making a ruling about “intelligent design”?
One already has. In Freiler v. Tangipahoa Parish Board of Education, the Fifth Circuit Court of Appeals ruled in 1999 that proposals for teaching “intelligent design” are equivalent to proposals for teaching “creation science.”

Conclusion
There are numerous resources available for teachers facing irate parents, students, and administrators who want to force creationism into science classes (e.g., see the resources listed on the Statement on Teaching Evolution Web page of the National Association of Biology Teachers [www.nabt.org/sub/position_statements/evolution.asp] and the Resources Web page of the National Center for Science Education [www.ncseweb.org/article.asp]). However, an understanding of the legal issues associated with the teaching of evolution and creationism in public schools can also help teachers maintain the integrity of their courses and, in the process, best serve their students.

At the Scopes trial in 1925, Scopes’s defender Dudley Field Malone shouted at prosecutors, “Keep your Bible in the world of theology where it belongs, and do not try to...put it into a course of science.” More than 70 years later, religious teachings are still finding their way into the science curriculum. Although creationists have lost every legal challenge to the teaching of evolution, they have nevertheless had a major impact on biology education in the United States. A significant percentage of biology teachers teach creationism in their
courses, and an even larger percentage would teach creationism if they were allowed to do so (Moore 2001). This has resulted in “over a quarter—and perhaps as many as half—of the nation’s high school students [getting] educations shaped by creation influence” (Eve and Harrold 1991).

References cited
Bishop v. Aronov, 926 F.2d 1006, 1077 (11th Cir. 1991).
Crowley v. Smithsonian Institution, 636 F.2d 738 (D.C. Cir. 1980).
Daniel v. Waters, 515 F.2d 485 (6th Cir. 1975).
Freiler v. Tangipahoa Parish Board of Education, 185 F.3d 337 (5th Cir. 1999).
Glanz J. 2000. 79% back creationism in schools. Denver Post, 11 March, pp. 1A, 7A.
Hellend v. South Bend Community School Corporation, 93 F.3d 327 (7th Cir. 1996), cert. denied, 519 U.S. 1092 (1997).
Hendren v. Campbell, Superior Court No. 5, Marion County, Indiana, 14 April 1977.
The Linnean 18: 26–34.
Moore R, Miksch K. 2003. What the courts have said about the teaching of evolution. Science Education Review. Forthcoming.
Palmer v. Board of Education, 603 F.2d 1271, 1274 (7th Cir. 1979).
John E. Peloza v. Capistrano Unified School District, 37 F.3d 517 (9th Cir. 1994).
Webster v. New Lenox School District #122, 917 F.2d 1004 (7th Cir. 1990).