Evolution, Creationism, and the Courts: 20 Questions

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Abstract

The teaching of evolution and creationism is controversial to many people in the United States. Knowledge of the many important court-decisions about the teaching of evolution and creationism in the United States can be used not only to resist anti-evolution activities of creationists, but also to help teachers address questions about the teaching of evolution and creationism.

> "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

> "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." *Jerry Falwell*, television preacher and university administrator

As editor of *The American Biology Teacher*, one of us (Moore) is often questioned about the teaching of evolution. Although these questions are usually about content and pedagogy, an increasing number are about the legal issues associated with the teaching of evolution and creationism in science classes of public schools. For example, what have courts said about teaching the alleged "evidence against evolution"? If parents, teachers, administrators, and students want creationism to be taught with (but not necessarily in place of) evolution, can teachers teach both? And what about "intelligent design"?

In this paper we answer 20 of the most common questions about legal issues associated with the teaching of evolution and creationism. An understanding of these questions can help science teachers not only answer students' questions about the teaching of evolution, but also help teachers resist the anti-science efforts of creationist parents, school administrators, colleagues, and others who want to force their religious ideology into science classrooms.

Evolution, Creationism, and the United States Constitution

Discussions of the legality of teaching evolution and creationism require a brief discussion of the United States Constitution. The First Amendment to the U.S. Constitution states in relevant part: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof." Courts analyze the First Amendment as creating two Religion Clauses: the Establishment Clause and the Free Exercise Clause. Each of these clauses frames the evolution/creationism legal debate. The U.S. Supreme Court has emphasized a critical difference "between government [acts] endorsing religion, which the Establishment Clause forbids, and private speech endorsing religion, which the Free Speech and Free Exercise Clauses protect" (*Board of Education Of Westside Community Schools [Dist. 66] v. Mergens*, 1990, p. 250).

The Establishment Clause is central to the evolution/creationism debate. Early court interpretation of the Establishment Clause invoked Thomas Jefferson's comment that the clause was intended to erect "a wall of separation between Church and State" (*Reynolds v. United States*, 1878). Over time, the courts

have interpreted the clause to require government neutrality towards religion, and the Establishment Clause's prohibitions were made applicable to offending state-actions by the Fourteenth Amendment. In *Lemon v. Kurtzman* (1971) the Supreme Court developed a test to analyze whether the Establishment Clause has been violated. *Lemon* requires a challenged government practice to have (1) a secular purpose, and (2) a primary effect that neither advances nor inhibits religion. Although the "Lemon test" is still used, it has been criticized as being difficult to apply. In Establishment Clause cases, therefore, the courts may focus on whether the challenged government activity has the effect of advancing religion. For example, the government should not convey a message of endorsement (see *County of Allegheny v. ACLU Greater Pittsburgh Chapter*, 1989, a crèche case in which a display conveyed the message that one religious belief was favored or preferred), nor coerce anyone to support or participate in a religion. Religious prayer at public school graduation, for example, is coercion and violates the Establishment Clause (*Lee v. Weisman*, 1992). The recent U.S. Supreme Court case upholding school vouchers was also an analysis of the Establishment Clause. In *Zelman v. Simmons-Harris* (2002), the Supreme Court decided that there is a secular purpose for the voucher program – dealing with a failing school system – and the state was not advancing religion by giving money to religious schools. Rather, parents were choosing between giving the voucher to a public or private school. Thus, vouchers do not endorse a religion because the state did not directly support or advance religion in the schools.

Debates about teaching evolution and creationism also raise questions about the free exercise of religion. Parents who do not want their children to learn evolution may argue that it violates their free exercise of religion, while other parents may argue teaching creationism violates their rights. The Free Exercise Clause ensures the right to believe whatever religious doctrine one desires. To determine if there is a violation of the Free Exercise Clause, Courts determine whether a state or federal governmental action has a coercive effect on the practice, or non-practice, of an individual's religion.

Twenty Questions

1. Many students, parents, and anti-science activists such as William Dembski are demanding that schools include "intelligent design" in their science curricula. Have the courts said anything about "intelligent design"?

Yes. 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."

2. Wasn't it once a crime to teach evolution in the United States?

No, there have been no laws banning the teaching of evolution *per se*. However, Tennessee, Arkansas, and Mississippi passed laws in the 1920s that made it a misdemeanor to teach *human* evolution. As noted by the Tennessee Supreme Court in *Scopes v. The State of Tennessee* (1927), "it thus seems plain that the Legislature in this enactment only intended to forbid teaching that men descended from a lower order of animals" (p. 111) and that "the act ... deals with nothing but the evolution of man from a lower order of animals" (p. 119). Teaching students about the evolution of non-human organisms has never been a crime (Moore, Jensen, Hsu, and Hatch, in press).

3. Didn't the Scopes Trial strike down the laws that banned the teaching of human evolution?

No. In 1927 the Tennessee Supreme Court overturned Scopes' conviction, but upheld the constitutionality of the law that banned the teaching of human evolution in public schools and colleges

throughout Tennessee (*Scopes v. The State of Tennessee*, 1927). Laws banning the teaching of human evolution in Tennessee, Arkansas, and Mississippi remained in effect for more than 40 years.

4. Everyone has heard of the Scopes Trial. From a legal perspective, what did it accomplish?

Nothing. Scopes' conviction was overturned in 1927, but Tennessee's law banning the teaching of human evolution was not overturned until 1967 when the state was faced with an expensive and embarrassing lawsuit filed by a teacher who was fired for teaching human evolution.

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

No. In 1968, the U.S. Supreme Court ruled unanimously in *Epperson v. Arkansas* that laws banning the teaching of evolution are unconstitutional because they violate the Establishment Clause of the U.S. Constitution. Citing *Epperson*, the Fifth Circuit Court of Appeals ruled in *Wright v. Houston Independent School District* (1973) that "Federal courts cannot by judicial decree do that which the Supreme Court has declared the state legislatures powerless to do, i.e., prevent teaching the theory of evolution in public schools for religious reasons" (p. 137). By 1970, all of the laws banning the teaching of human evolution had been overturned.

6. A student in my class, and his parents, claim that evolution offends and is incompatible with their religious beliefs. Must I modify my teaching to accommodate their right to religious freedom?

No. *Wright v. Houston Independent School District* (1973) - the first lawsuit to be initiated by creationists - was dismissed when the Fifth Circuit Court of Appeals ruled that to be insulated from scientific findings incompatible with one's religious beliefs does not accompany the free exercise of religion. As had been noted in *Epperson v. Arkansas* (1968), "there is and can be no doubt that the First Amendment does not permit the State to require that teaching and learning must be tailored to the principles or prohibitions of any religious sect or dogma" (p. 106) and that there can be no legitimate state interest in protecting particular religions from scientific views "distasteful to them" (Moore, Jensen, Hsu, & Hatch, in press).

Science and religion necessarily deal with many of the same questions, and they may often provide conflicting answers. But as the U.S. Supreme Court noted in 1952 in *Burstyn v. Wilson*, it is not the business of government to suppress real or imagined attacks on a particular religious doctrine. Science teachers in public schools should not be expected to avoid discussions of every scientific issue on which some religion claims expertise.

7. Can the government use tax money to promote the teaching of evolution?

Yes. In 1973, William Willoughby - acting "in the interests of forty million evangelistic Christians" in the United States - sued the director of the National Science Foundation and others for funding the popular and decidedly pro-evolution textbooks produced in the 1960s by the Biological Sciences Curriculum Study (BSCS). Willoughby's lawsuit (*Willoughby v. Stever*, 1972) was dismissed by the D.C. Circuit Court of Appeals, on the grounds that the BSCS books disseminated scientific findings, not religion. Governmental agencies such as the National Science Foundation can use tax money to disseminate scientific findings, including those related to evolution (Moore, Jensen, Hsu, & Hatch, in press).

8. Textbooks produced in the 1960's by the Biological Sciences Curriculum Study promoted the teaching of evolution and were subsidized by the federal government. If the government uses tax money to produce science textbooks that promote evolution, must it also provide funds to produce textbooks that promote creationism?

No. In *Willoughby v. Stever* (1972), the D.C. Circuit Court of Appeals ruled that publicly-funded science textbooks cannot be tailored to particular religious beliefs. Similarly, a Georgia court ruled recently that a textbook did not violate the Establishment or Free Exercise Clauses when the text stated "creationism is not a scientific theorem capable of being proven or disproven through scientific methods" (*Moeller v. Schrenko*, 2001, p. 201).

9. I just returned from the American Museum of Natural History, where I saw several exhibits that promote evolution. If the government uses public funds to produce exhibits that promote evolution, must it also provide funds to produce public exhibits that promote creationism?

No. In *Crowley v. Smithsonian Institution* (1980), attempts to ban federally funded evolution-based exhibits were dismissed on grounds similar to those used to dismiss *Willoughby v. Stever* (1972). The D.C. Circuit Court of Appeals determined that using public funds to promote evolution was constitutional and that the government is not required to provide public funds to promote, or give equal time to, creationism.

10. All citizens of the United States have a First Amendment right to free speech. Doesn't this right to free speech entitle teachers to teach creationism in science classes of public schools?

No. In *Webster v. New Lenox School District #122* (1990), the Seventh Circuit Court of Appeals ruled that a teacher does not have a First Amendment right to teach creationism in a public school. A school can direct a teacher to "refrain from expressions of religious viewpoints in the classroom and like settings" (*Bishop v. Aronov*, 1991, p. 1077). In 1996, the Seventh Circuit upheld the firing of a teacher, noting that the teacher did not have a First Amendment right to teach creationism, and in fact, the school had a constitutional duty to make certain, given the Religion Clauses, that subsidized teachers do not inculcate religion (*Hellend v. South Bend Community School Corporation*).

11. Must science teachers who teach evolution give "equal time" to creationism?

No. In *McLean v. Arkansas Board of Education* (1982), Federal Judge William Overton ruled that Arkansas' law requiring "equal time" for creationism was unconstitutional (as per the Lemon Test in *Lemon v. Kurtzman*, 1971), was based on "an inescapable religiosity," and "advanced particular religious beliefs" (pp. 12, 13). In 1987, the U.S. 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." The Court was particularly concerned with the impact of the "Creationism Act" on impressionable children in public schools having mandatory attendance. These cases, combined with *Daniel v. Waters* (1975) (which overturned Tennessee's "Genesis Act" requiring 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, Jensen, Hsu, & Hatch, in press).

12. Has a court ever assessed the scientific merits of creation science?

Yes. In *McLean v. Arkansas Board of Education* (1982), Federal Judge William Overton ruled that "creation science is simply not science," that "creation science is not guided by natural law," and that "creation science has no scientific merit or educational value as science" (p. 22). 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" (p. 17). As Overton noted, "if the unifying idea of supernatural creation by God i removed [from the law], the remaining parts [of the law] explain nothing and are meaningless assertions (p. 15).

13. My students, their parents, school administrators, and other local residents all want me to teach evolution as well as creationism. These are the people whose taxes pay my salary and support the school. If these people want me to teach creationism as well as evolution, can I teach them both? Isn't teaching both creationism and evolution in science classes only fair?

There are numerous problems with this logic. For example, there are thousands of different creation stories. Since the Constitution requires that schools must be religiously neutral, a teacher cannot present any particular creation story as being more "true" than others. As noted by the Fifth Circuit Court of Appeals in *Wright* (1973), "to require the teaching of every theory of human origin … would be an unwarranted intrusion into the authority of public school systems to control the academic curriculum" (p 137).

The popularity of creationism is irrelevant to it being taught in public schools. As noted by Judge Overton in *McLean v. Arkansas Board of Education* (1982), "the application and content of the First Amendment principles are not determined by public opinion polls or by an 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" (p. 26).

Courts have often been required to invalidate statutes which advance religion in pubic elementary and secondary schools, even though a majority supports the laws, as exemplified by *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 on walls of public schools), *Abington School District v. Schempp* (1963) (daily reading of Bible), and *Engel v. Vitale* (1962) (recitation of denominationally neutral prayer).

It is unconstitutional to require creationism to be taught in science classes of public schools (*Edwards v. Aguillard,* 1987). One reason is because children are highly impressionable. The Supreme Court has determined that teachers must not inculcate religion; school administrators have a duty to make certain that public school teachers do not inculcate religion (see also, *Lemon v. Kurtzman,* 1971 and *Hellend v. South Bend Community School Corporation,* 1996).

Creation science is not science (*McLean v. Arkansas Board of Education,* 1982), and evolution is discredited if it must be counterbalanced by the teaching of creationism (*Edwards v. Aguillard*, 1987; Moore, Jensen, Hsu, & Hatch, in press).

14. Can a school district force a science teacher to stop teaching creationism? If the teacher refuses to teach evolution, can the teacher be reassigned?

Yes. In *Webster v. New Lenox School District #122* (1990), the Seventh Circuit Court of Appeals ruled that a school district can ban a teacher from teaching creationism. As noted in *Edwards v. Aguillard* (1987) and *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" (p. 521). See also the discussion in Moore, Jensen, Hsu, and Hatch (in press).

15. Can a school require that a teacher teach evolution? If so, doesn't this violate a teacher's right to free speech?

In *Peloza v. Capistrano Unified School District*, the Ninth Circuit Court of Appeals ruled in 1994 that requiring a teacher to teach evolution is not a violation of the Establishment Clause of the U.S. Constitution. In dismissing Peloza's lawsuit, the court noted that "since the evolutionist theory is not a religion, to require an instructor to teach this theory is not a violation of the Establishment Clause … Evolution is a scientific theory based on the gathering and studying of data, and modification of new data. It is an established scientific theory which is used as the basis for many areas of science. As scientific methods advance and become more accurate, the scientific community will revise the accepted theory to a more accurate explanation of life's origins. Plaintiff's assertions that the teaching of evolution would be a violation of the Establishment Clause is unfounded" (pp. 521-522).

16. Hasn't the U.S. Supreme Court endorsed the teaching of "evidence against evolution"?

No. However, in the minority opinion of *Edwards v. Aguillard* (1987), U.S. Supreme Court Justice 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 anti-evolution 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" (p. 594; Moore, Jensen, Hsu, & Hatch, in press).

17. Does a science 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 and that there is no evidence to show that it actually occurred. When LeVake was reassigned, he sued. In *LeVake v. Independent School District #656* (2000), the Minnesota Court of Appeals ruled 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 pubic school teacher to teach evolution in the manner prescribed by the curriculum overrides his First Amendment rights as a private citizen" (p. 502).

The Eleventh Circuit Court of Appeals has also ruled that a school can direct a teacher to refrain from discussing religion in classroom settings (*Bishop v. Aronov*, 1991), and the Supreme Court has stated tha schools have a duty to make sure teachers do not inculcate religion (*Lemon v. Kurtzman*, 1971). The prohibition against an establishment of religion in these situations outweighs the public school teachers' right to free speech. Finally, in *Peloza v. Capistrano Unified School District* (1994), the Ninth Circuit Court of Appeals noted that "to permit [Peloza] to discuss his religious beliefs with students during school time on school grounds would violate the Establishment Clause of the First Amendment. Such speech would not have a secular purpose, would have the primary effect of advancing religion, and would entangle the school with religion. In sum, it would flunk . . . the test articulated in *Lemon v. Kurtzman*" (p. 522).

18. Can science teachers teach creationism if their school district adopts a course textbook that promotes creationism?

No. Requiring the teaching of creationism in science classes of public schools is unconstitutional. Moreover, Indiana Superior Court Judge Michael T. Dugan ruled in *Hendren v. Campbell* (1977) that creationism-based biology textbooks such as *Biology: A Search for Order in Complexity* advance a specific religious perspective, and that the use of such books would ensure "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 solely adopt a science course textbook that promotes creationism because such textbooks are sectarian in content and entangle the state with religion.

19. Can science 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?

In *Freiler v. Tangipahoa Parish Board of Education* (1999), the Fifth Circuit Court of Appeals ruled tha it is unlawful to require teachers to read aloud disclaimers saying that the biblical version of creation is the only concept from which students were not to be dissuaded. Such a disclaimer, according to the court, was "intended to protect and maintain a particular religious viewpoint, namely belief in the Biblical version of creation." Such disclaimers are "contrary to an intent to encourage critical thinking" (p. 345) and do not advance free-thinking, or sensitivity to, and tolerance of, diverse beliefs.

20. Isn't evolution a religion? Doesn't the teaching of evolution promote the religion of evolution, an therefore violate the Establishment Clause of the U.S. Constitution?

No, evolution is not a religion. According to the court in *Wright* (1973), the teaching of human evolution does not equal an establishment of religion by a state. This was strengthened when the Ninth Circuit Court of Appeals in *Peloza v. Capistrano Unified School District* (1994) noted that *evolution* and *evolutionism* "define a biological concept; higher life forms evolve from lower ones. The concept has nothing to do with whether or not there is a divine Creator (who did or did not plan evolution as part of a divine scheme) … Neither the Supreme Court, nor this circuit, has ever held that evolutionism or secular humanism are 'religions' for Establishment clause purposes. Indeed, both the dictionary definition of religion and the clear weight of the case law are to the contrary. 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 (citing *Edwards v. Aguillard*, 1987) … Since the evolutionist theory is not a religion, to require an instructor to teach this theory is not a violation of the Establishment Clause" (p. 521).

Summarizing the Major Legal Cases Involving Creationism and Evolution

Appendix 1 summarizes the major U.S. court cases dealing with evolution and creationism in public schools. The first column of the chart provides the name of the case. The first name listed in this column is the person or organization asking the court to rule on the case, and the second name is either the defendant in a trial case, or the appellee in a court of appeals. The year the case was decided is also listed. The next column lists the question in this manuscript the case helps to answer, and the third column provides a brief description of the court's ruling. The final column lists the states that must abide by the court's opinion. Details regarding each of these cases are presented elsewhere (Moore, 2002).

Although we have answered many of the 20 questions discussed above with a simple yes or no, it is not always possible to answer a legal question with a definitive response applying to all students, teachers, and school boards. This is true because in the United States, each state has its own trial courts and supreme court to decide cases dealing with questions of that particular state's laws. There is also a Federal Court system with 96 Federal District Courts (trial courts), 13 Circuit Courts of Appeal (Federal Appeals Courts), and one U.S. Supreme Court. When a federal district judge makes a ruling, it does not have to be followed by other federal courts. Similarly, when a Circuit Court of Appeal issues an opinion, it is binding only on the federal district courts in the geographic area covered in that circuit. For example, the Fifth Circuit Court of Appeals' decisions are binding and must be followed by all district courts in Louisiana, Mississippi, and Texas. Although courts in the other 47 states are not required to follow a decision by the Fifth Circuit Court of Appeals, the case may be persuasive when other courts consider similar cases. In Appendix 1 we have listed the States that must follow the cases discussed in this paper, based on whether the result is a State court opinion or a District or Circuit Court of Appeal opinion.

Only when the United States Supreme Court issues an opinion on a question of constitutional law, as it did in *Epperson* (1968) and *Edwards* (1987), is it possible to answer with certainty the current state of the law. Even then, however, that certainty applies only to the precise question the Supreme Court decided. This is because the U.S. Supreme Court is the nation's highest court on questions of the U.S. Constitution, and all state and federal courts must adhere to the Court's rulings.

All courts attempt to decide cases on the basis of principles established in prior cases. When the prior case is a U.S. Supreme Court opinion, lower courts *must* apply the Supreme Court's ruling. For example, both *Epperson* (1968) and *Edwards* (1987) have been cited numerous times. According to *Shepard's Citation Index*, as of early 2003 *Epperson* (overturning the ban on teaching human evolution) has been relied on 1295 times by U.S. courts. Similarly, *Edwards v. Aguillard* (overturning balanced treatment of creationism and human evolution) has been cited 1065 times since it was decided by the U.S. Supreme Court in 1987.

The U.S. Supreme Court generally has discretion to decide which cases from the Circuit Courts of Appeal and State courts it will review on appeal. The writ of certiorari (referred to as cert.) is a legal order used by the United States Supreme Court to choose the cases that it wants to affirm, modify, or overturn on appeal. For example, at the request of Governor Edwards, the Supreme Court granted cert. in *Edwards v. Aguillard* (1987), and after conducting research and an oral argument, issued a final opinion that is binding on all 50 states and Puerto Rico. When the U.S. Supreme Court refuses to hear an appeal, it is said to "deny cert." When the Court denies cert., the judgment of the lower court remains in effect. Appendix 1 notes when cert. has been denied. If a lower court case does not have the notation "cert. denied," it means that neither party requested the U.S. Supreme Court to review the case on appeal.

Conclusion

The U.S. Supreme Court first called for a "wall of separation between church and state" in 1878. Since that time the Court has attempted to determine how to build the wall (e.g., regarding public school prayer and the indoctrination of public school students with religious dogma). The cases discussed in this paper attempt to answer the most common questions about the legal issues that have arisen when challenges are made to teaching evolution and creationism. Each case is based on an attendant set of facts, and as circumstances change, courts may change the ways in which they analyze the teaching of evolution and creationism in the public schools. Thus, it is important to remain up-to-date on the current state of the law. As the controversy over the "wall of separation" continues, it is crucial for biology teachers to continue to inform the debate.

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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, April 14, 1977.
Lee v. Weisman, 505 U.S. 577 (1992).
Lemon v. Kurtzman, 403 U.S. 602 (1971).
LeVake v. Independent School District #656, 625 N.W.2d 502 (MN Ct of Appeal 2000), *cert. denied*, 534 U.S. 1081 (2002).
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Wright v. Houston Independent School District, 366 F. Supp. 1208 (S.D.Tex.1972), *aff'd*, 486 F.2d 137 (5th Cir. 1973), *cert. denied sub. nom*. Brown v. Houston Independent School District, 417 U.S. 969 (1974).
Zelman v. Simmons-Harris, 536 U.S. 639 (2002).

Appendix 1

The major court-cases involving the teaching of evolution and creationism

Case Name	Question/s	Ruling	States that must follow
Crowley v. Smithsonian Institution (1980)	9	The use of federal funds for public exhibits that promote evolution does not violate the Establishment or Free Exercise Clauses. The government is not required to provide public funds to promote creationism.	District of Columbia (DC Circuit Court of Appeals opinion)
Daniel v. Waters (1975)	11	Overturned Tennessee law requiring equal emphasis on evolution and Genesis version of creation.	Kentucky, Michigan, Ohio, Tennessee (6th Circuit Court of Appeals opinion)
Edwards v. Aguillard (1987)	11, 13, 14, 15, 16, 17	Overturned State law requiring public schools that teach evolution to teach "creation science" as well, because such a law advances religious doctrine in violation of First Amendment's establishment of religion clause.	All (This is a U.S. Supreme Court opinion.)
Epperson v. Arkansas (1968)	2, 5, 6	Arkansas law, making it illegal to teach human evolution, struck down as a violation of the Establishment Clause.	All (This is a U.S. Supreme Court opinion.)
Freiler v. Tangipahoa Parish Board of Education (1999)	1, 19	Proposals for teaching “intelligent design” are equivalent to proposals for teaching creation science.	Louisiana, Mississippi, Texas (5th Circuit Court of Appeals opinion, cert. denied)
Hellend v. South Bend Community School Corporation (1996)	10, 13, 17	A school must direct a teacher to refrain from expressions of religious viewpoints in the classroom and this includes creationism.	Illinois, Indiana, Wisconsin (7th Circuit Court of Appeals opinion)

Hendren v. Campbell (1977)	18	Adopting creationism-based biology textbooks in public schools is unconstitutional because these books advance a specific religious point of view.	Marion County, Indiana
LeVake v. Independent School District #656 (2000)	17	Refusal to allow teacher to teach "evidence against evolution" does not violate free speech rights of teacher.	Minnesota
McLean v. Arkansas Board of Education (1982)	11, 12, 13, 14	Ruling that creation science has no scientific merit or educational value, the court determined that equal time for creationism is unconstitutional.	Arkansas
Moeller v. Schrenko (2001)	8	Using a biology textbook that states creationism is not science does not violate the Establishment or the Free Exercise Clauses.	Georgia (Georgia Court of Appeals decision)
Peloza v. Capistrano Unified School District (1994)	6, 10, 14, 15, 16, 17, 20	Ruling that evolution is not a religion, the court determined that requiring a biology teacher to teach evolution did not violate the Establishment Clause, nor the teacher's right to free speech.	Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon, Washington (9th Circuit Court of Appeals opinion)
Scopes v. The State of Tennessee (1927)	2, 3, 4	The court upheld the constitutionality of a state law banning the teaching of human evolution but the conviction of the biology teacher for teaching human evolution was overturned.	None. The U.S. Supreme Court has ruled it is unconstitutional to forbid the teaching of human evolution.
State of Tennessee v. John Thomas Scopes (1925)	2, 3, 4, 5	Substitute biology teacher, John Scopes, is convicted of the crime of teaching human evolution in a public school in Tennessee.	None. The U.S. Supreme Court has ruled it is unconstitutional to forbid the teaching of human evolution.

Webster v. New Lenox School District #122 (1990)	10, 14, 15	A teacher does not have a First Amendment right to teach creationism in public school.	Illinois, Indiana, Wisconsin (7th Circuit Court of Appeals opinion)
Willoughby v. Stever (1972)	7, 8	Publicly funded textbooks that promote evolution disseminate scientific findings, not religion, and are constitutional under the Establishment and Free Exercise Clauses.	District of Columbia (DC Circuit Court of Appeals opinion, cert. denied)
Wright v. Houston Independent School District (1973)	5, 6, 11, 13, 20	Teaching evolution is not Establishment of Religion (secular humanism is not a religion) and "to require the teaching of every theory of human origin … would be an unwarranted intrusion into the authority of public school systems to control the academic curriculum."	Louisiana, Mississippi, Texas (5th Circuit Court of Appeals opinion, cert. denied)