5. Science versus Religion in American Law

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The power of organized religion has waxed and waned dramatically throughout human history. In many preindustrial societies, the church provided not only answers to what we think of today as scientific questions, but strict guidance to political leaders as well—religion "once could define secular laws in usury, regulate the conditions of production in the guilds, and prohibit what today are normal business and commercial practices. . . . [M]onarchs were brought cringing to religious shrines and matters of personal morality were effectively dictated by pontifical power."[1] In the twentieth-century Soviet Union, by contrast, religion was repressed in the name of an all-encompassing "scientific" view of government and morality.[2]

The Framers' Conception of Religion and Science

From the beginning, America has had a more nuanced relationship between church and state in general, and church and science in particular. The framers of the Constitution, as we have seen, cherished the Enlightenment ideal that science could illuminate everything from chemical reactions to political theory. But the framers were also descendants of people who had come to America in large part seeking religious freedom. The growth of modern science in the eighteenth century did not require the framers to uniformly reject religion:

> Religious belief in the New World was by no means repressed by scientific progress as it was in the Old. On the contrary, there emerged an American

symbiosis of rationalism and Christianity, technological progress and moral challenge. . . . Franklin, Jefferson, Rush and Priestly all espoused a rationalistic conception of progress, but, unlike Paine, they found that science and reason did not require them to reject completely their Christian heritage. Rather, Christianity supplied them with a comfortable ethical system whose telic projections could be made entirely harmonious with the methods and conclusions of science.[3]

The original relationship between science and religion in America turned in part on the American infatuation with progress. Scholars still debate whether the belief in human progress was known in ancient Greece and Rome, or whether, facilitated by Christianity's linear conception of history, it began in the Middle Ages.[4] There is wide consensus, however, that the idea of progress was dominant among eighteenth-century Enlightenment thinkers.[5] We have already noted the optimism, fueled by Newton's discoveries, that improvement, perhaps perfection, was attainable in all human endeavors.

This notion of progress was particularly strong in America. The people who came to live in the New World often saw themselves as replacing the corrupt institutions of the Old World with a more perfect order.[6] The very acts of creating a nation and writing its Constitution were a kind of "applied Enlightenment."[7]

The Enlightenment origins of the U.S. Constitution reflected and reinforced a particular balance between religion and science. To many of the framers, dogmatic, authoritarian religion, as opposed to a more enlightened deism, was a threat to the idea of progress they held dear. Their views shaped the nonestablishment and free exercise of religion clauses of the Constitution, clauses that have a continuing impact on the relationship between American science and religion.

The First Amendment's requirement that "Congress shall make no law respecting an establishment of religion" was designed for many purposes, some of them conflicting. Certain of the framers, for example, wanted to forbid Congress from establishing religion in order to maintain state establishments they favored.[8] In this century, however, the Supreme Court has interpreted the nonestablishment clause in light of the purposes of Jefferson and Madison, as reflected in their battles to forbid established religion of any kind in Virginia.[9] Moreover, the Court, beginning in 1947, applied the nonestablishment clause to state as well as federal government.[10]

A religion-science skirmish in colonial America gives us a taste of

the Enlightenment views that characterized Jefferson and Madison's approach to nonestablishment.[11] After the Boston earthquake of 1755, the Reverend Thomas Prince's sermon, "Earthquakes the Works of God and Tokens of his Just Displeasure," suggested that Ben Franklin's lightning rods might have brought on the earthquake. Prince concluded, "O! there is no getting out of the mighty Hand of God! If we think to avoid it in the Air, we cannot in the Earth."[12]

Harvard professor John Winthrop, a leading Newtonian, immediately published a powerful scientific rejoinder that was widely believed to have made Prince appear ridiculous.[13] Winthrop's response, as well as his writings on comets a few years later, attacked clergy who fostered fear rather than understanding of natural phenomena, and emphasized the consistency of Winthrop's own belief in God with an understanding of Newtonian mechanics.[14] Winthrop's attitude exemplified an important strand of Enlightenment thinking: a combination of attacks on "superstitious" clergy with support for scientific speculation.[15] Leading American scientists joined Winthrop in condemning the "priestcraft" that controlled men's minds.[16] The goal of these scientists was not atheism, but rather a faith illuminated by natural philosophy.[17]

The Virginia supporters of the nonestablishment clause shared Winthrop's approach. They wanted to prevent the suppression of enlightened science by the church. Thus, in his "Memorial and Remonstrance Against Religious Assessments," Madison argued that fifteen centuries of establishment Christianity resulted in "superstition" on the part of clergy and laity alike.[18] The centerpiece of Jefferson's attack on established religion in *Notes on the State of Virginia* was a pointed history of science and religion: "Galileo was sent to the Inquisition for affirming that the earth was a sphere; the government had declared it to be as flat as a trencher, and Galileo was obliged to abjure his error. This error, however, at length prevailed, [and] the earth became a globe."[19]

Jefferson was not alone in citing the martyrdom of Galileo. Milton, the leading influence on colonial ideas of free speech,[20] was influenced greatly by a visit he made to the exiled scientist.[21] The *Areopagitica*, a basic source to this day on the evils of licensing speech,[22] describes Milton's trip to Italy where he "found and visited the famous Galileo, grown old, a prisoner to the Inquisition, for thinking in astronomy otherwise than the Franciscan and Dominican licensers thought."[23]

Thus the Jeffersonian wall between church and state was designed in

part to protect American Galileos. In this respect, the free exercise and establishment clauses are complementary; the constitutional requirement that "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof"[24] both protects and enhances science. Whereas some religions may rely on dogma to the detriment of science, others believe scientific inquiry enhances God's glory.[25] Thus nonestablishment combined with free exercise encourages people like Winthrop to pursue their researches. Throughout American history, the religious tolerance built into the First Amendment has bolstered American science. American Quakers, for example, whose faith encourages scientific endeavor, made major contributions to American science beginning in the eighteenth century, and in this century, American tolerance of Judaism led to an influx of Jewish scientists, particularly from Germany.[26]

The Modern Dispute over the Theory of Evolution

The establishment clause has played a decisive role in the twentieth-century successor to the dispute between Galileo and the church. Just as astronomy displaced human beings from the center of the universe, the theory of evolution displaced human beings from their special status among the earth's inhabitants.[27] In the case of evolution, the establishment clause resolved the resulting religion-science dispute in favor of science.

The theory that humans evolved from other primates need not, in the abstract, pose a challenge to one's spiritual beliefs. For example, Darwinism was readily absorbed when it was introduced in Japan in the late nineteenth century. The reason was not that Japanese society was more advanced scientifically; indeed, Japan had much less of a scientific community at that time than did Europe or America.[28] As Edwin Reischauer pointed out, evolution did not cause popular protest because of the nature of the dominant Japanese belief systems:

> Because of Shinto ideas, there were no clear lines between natural objects, such as rocks, trees, waterfalls, and mountains, and living creatures of all sorts, vegetable or animal, and humans, or between humans and gods. Buddhism had also brought the idea that the quality of one's present life might bring rebirth as a superior being or as an inferior one, like a bug or a worm. No one recoiled at the idea that humans could be descended from less advanced animal forms. In fact, Darwinism proved a support to the acceptance of Western science.[29]

But when Darwin's theories emerged in nineteenth-century America they presented an enormous shock to many Christians, and for some that shock remains.[30] The shock stems from specific religious teachings. In the Bible people are created separately from other creatures and are given a role and a set of capabilities that set them apart from all others. The Darwinian notion that people are animals is a fundamental challenge to that entire structure. This is not simply an instance where a biblical account appears at odds with modern science. It is to many a threat to the very idea of transcendent morality.

The clash between evolution and science first came to the American courts in the Scopes trial. The trial verdict was mixed. In 1925, John Thomas Scopes was convicted by a jury of violating a Tennessee statute that made it unlawful "to teach any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals."[31] At the time of Scopes's trial and appeal the U.S. Supreme Court had not yet ruled that the nonestablishment clause of the First Amendment applied to actions of the state, as opposed to federal, government.[32] Thus Scopes's appeal to the Tennessee Supreme Court was severely constrained. And the Tennessee Supreme Court found that the anti-evolution law was within the power of the Tennessee legislature.[33]

But the process orientation of the legal system enables courts to reach compromises, a power of particular importance in highly charged and divisive cases. The Scopes trial, with Clarence Darrow for the defense and William Jennings Bryan for the State, had elicited enormous public attention, much of it consisting of negative publicity directed at the "fundamentalist" supporters of "monkey bills" like the one in Tennessee.[34] Even Christian magazines expressed concern about Bryan's literalist approach to the Bible.[35]

Under the circumstances, the Tennessee Supreme Court seemed reluctant to affirm the Scopes conviction. They seized on the fact that, after the jury verdict, the trial judge had imposed a fine of $100, the minimum amount allowed under the statute.[36] Now it might seem unlikely that Scopes was prejudiced by having been given the lightest possible punishment. But the Court noted that under the Constitution of Tennessee, a fine in excess of $50 must be assessed by a jury, and the Court declined to rectify this problem in any way—it simply said that the judgment against Scopes had to be reversed because a judge, not a jury, had

imposed the fine.[37] The Court then went on to note that "the peace and dignity of the state" would be best served if the prosecution of Scopes were dropped so that "this bizarre case" could be ended.[38] And indeed, the case ended at that point.

The evolution controversy did not come before the U.S. Supreme Court until *Epperson v. Arkansas*,[39] a 1968 challenge to the constitutionality of an Arkansas statute prohibiting the teaching of evolution.[40] By this time, the nonestablishment clause had been applied to the states, and in this case the Jeffersonian and Madisonian view of that clause carried the day. In other words, the challenge to the Arkansas law was successful because the case was seen as a dispute between religion and science.

An amicus brief in *Epperson* demonstrated to the Court that science was in fact at stake by including a statement signed by 179 biologists asserting that evolution "is firmly established even as the rotundity of the earth is firmly established."[41] Another brief for the opponents of the statute, in a passage with roots in the eighteenth century, argued that the uninformed use "all forms of physical and mental torture, to maintain the status quo of their unenlightenment and their accepted beliefs."[42] During oral argument, counsel for the State was asked, "What if Arkansas would forbid the theory that the world is round?"[43] And the Court's opinion, in striking down the statute under the establishment clause, featured excerpts from arguments against fundamentalist religion generally.[44]

Commentary on *Epperson* has tended to focus on the doctrinal point that the Court found the statute unconstitutional because it had been enacted for a religious purpose.[45] But the Court's proof of an illegal purpose consisted merely of citation to newspaper advertisements, letters to the editor, and law review articles.[46] No statement of any legislator was included. In other cases where a religious purpose seems likely, the Court has declined to find one or even to look very hard.[47] Academic emphasis on purpose or motive in the usual sense is misplaced here. The Court's scrutiny of the statute was more intense than in the usual establishment case because the competing value at stake was science. Indeed, the Court said as much: "The State's undoubted right to prescribe the curriculum for its public schools does not carry with it the right to prohibit, on pain of criminal penalty, the teaching of a scientific theory or doctrine where that prohibition is based upon reasons that

violate the First Amendment."[48] The Arkansas statute's improper purpose was not to aid religion, but rather to aid religion at the expense of science.

The Supreme Court believed in *Epperson* that what it called the "monkey" law might be a curiosity from an earlier era, noting that, apart from Arkansas, only Mississippi had an anti-evolution statute on its books.[49] In 1970 the Mississippi law was struck down on the authority of *Epperson*.[50] But, contrary to the Court's belief, the subject of the teaching of evolution in the public schools has remained a lively one. The fundamental challenge Darwin poses to the beliefs of many Americans cannot easily be put to rest.

Thus litigation has continued as anti-evolutionists try new techniques. But nothing they try can shake the dominance of the scientific world view in this legal arena. In 1975, the U.S. Court of Appeals for the Sixth Circuit struck down a Tennessee statute requiring that the teaching of evolution in public schools be accompanied both by a disclaimer that it is "theory" not "scientific fact," and by an explanation of the Genesis account in the Bible without such disclaimer.[51] The court held that putting science at this disadvantage compared to religion was, under *Epperson*, a violation of the establishment clause.[52]

Epperson was also applied in a 1973 North Carolina case involving a substitute teacher who was asked by a student if he believed man descended from monkeys.[53] The teacher said yes, challenged some other biblical stories as unscientific, and was fired the next day when students complained.[54] The district court held in favor of the teacher on various grounds, including the establishment clause.[55] The court's opinion traced the persecution of Galileo and the contributions of Newton, and concluded that the "United States Constitution was drafted after these and similar events had occurred, but not so long after that they had been forgotten."[56]

Creationism in the Courts

The most recent attack on evolution has come from creationism—the movement arguing that there is scientific evidence that the creation account in the Book of Genesis is accurate.[57]

The first thing to say about creationism is that its very existence is an extraordinary demonstration of the role of science in American society.

The notion that a religious account of reality depends upon scientific verification would come as a shock to many in other cultures and in other times. It is not at all clear that revelation or faith must be subordinate to empiricism. But in America today some fundamentalists have either come to believe—or have been driven to assert—that scientific support for Genesis is of central importance. These creationists have then brought about the passage of legislation requiring that "creation science" be taught along with evolution in the public schools.

But calling something creation "science" does not make it so from the point of view of the scientific community or the courts. The traditional scientific community rallied against creationism,[58] emphasizing that it really was not a scientific theory because it did not admit the possibility that Genesis was wrong. The courts were then confronted once again with lawsuits pitting science against religion, and they ruled once again for science. The process began when a federal district court held in *McLean v. Arkansas*, 529 F. Supp. 1255 (E.D. Ark. 1982), that an Arkansas statute mandating that creationism be taught along with evolution was an unconstitutional establishment of religion. The matter reached the U.S. Supreme Court in the 1987 case of *Edwards v. Aguillard*.[59]

Edwards involved a carefully drafted statute—the Louisiana "Balanced Treatment for Creation-Science and Evolution-Science in Public School Instruction" Act. This act forbade the teaching of evolution in public schools unless accompanied by the teaching of "creation science," which was defined as the "scientific evidences for [creation] and inferences from those scientific evidences."[60] No school was required to teach evolution or creation science, but if either was taught the other had to be taught as well.

The traditional scientific community urged the Court to reject the notion that "creation science" was anything other than religion. Briefs opposing the Louisiana law were filed by, among others, a group of 72 Nobel Laureates in science, and by the National Academy of Sciences. And the majority of the Supreme Court, citing a survey of Louisiana school superintendents, rejected the state's claim that "creationism" was just another scientific theory and concluded instead that it was a religious doctrine characterized by "the literal interpretation of the Book of Genesis."[61] In the end, the Supreme Court struck down the Louisiana law as an establishment of religion because they looked, as they had

in *Epperson,* to the state's purpose and found an improper religious infringement on science:

> In this case, the purpose of the Creationism Act was to restructure the science curriculum to conform with a particular religious viewpoint. Out of many possible science subjects taught in the public schools, the legislature chose to affect the teaching of the one scientific theory that historically has been opposed by certain religious sects. As in *Epperson,* the legislature passed the Act to give preference to those religious groups which have as one of their tenets the creation of humankind by a divine creator. . . . Because the primary purpose of the Creationism Act is to advance a particular religious belief, the Act endorses religion in violation of the First Amendment.[62]

The blow to some religious Americans inflicted by the *Edwards* case is considerable, but it is an unavoidable consequence of the constitutional status of American science and religion. Even Stephen Carter, who has argued eloquently that American elites wrongly trivialize religion, concedes that "*Edwards v. Aguillard* is correctly, if perhaps tragically decided. The decision is correct because of the difficulty of articulating the precise secular purpose for the teaching of creationism: even if dressed up in scientific jargon, it is, at heart, an explanation for the origin of life that is dictated solely by religion."[63]

It is impossible to understand *Epperson, Edwards,* and the other evolution cases as simply dealing with the establishment of religion. Consider, by comparison, application of the establishment clause to state laws that criminalize homosexual behavior. These laws, like anti-evolution laws, are religious in origin. They derive directly from specific biblical passages,[64] and the offense in question was defined traditionally as "the abominable sin not fit to be named among Christians."[65] Furthermore, anti-sodomy laws cannot easily be analogized for constitutional purposes to other criminal laws, like those against murder, which have religious roots but have taken on a secular purpose.[66] Unlike the laws against murder, laws against homosexuality are retained in part because of religious pressure,[67] and many homosexual crimes affect only consenting adults.[68]

Yet establishment clause challenges to the laws against homosexual behavior have failed uniformly.[69] Moreover, in decisions involving homosexuality, courts often go out of their way to rely on the biblical origins of the laws. Thus in *Doe v. Commonwealth*[70] a three-judge federal court upheld Virginia's right to prohibit private, consensual ho-

mosexual acts between adults. The court found that "the longevity of the Virginia Statute does testify to the State's interest and its legitimacy. It is not an upstart notion; it has ancestry going back to Judaic and Christian law." The court then cited Leviticus 18:22: "Thou shalt not lie with mankind, as with womankind: it is abomination."[71] Similarly, when the U.S. Supreme Court upheld a Georgia sodomy statute, Chief Justice Burger's concurrence stressed that "condemnation of [sodomy] is firmly rooted in Judaeo-Christian moral and ethical standards."[72]

Religion is thus deeply involved with our views about homosexuality, yet establishment clause challenges fail while they succeed when evolution is involved. The establishment clause cannot be understood solely as a statement about religion; its content depends upon the context in which religion is operating. When religion shapes our moral standards, constitutional scrutiny is more lax than when religion shapes our scientific standards. Analyzing the evolution decisions without reference to the constitutional status of science is like analyzing a steam engine without reference to the steam.

Not only have the courts kept Genesis out of the public school curriculum, they have prevented individual teachers and students from opting out of the standard course of study. In 1990, a federal appellate court held that a junior high school teacher had no free speech right to teach creationism when that topic was not included in the curriculum.[73] In 1992, when a California high school biology teacher was reprimanded for teaching creationism, he tried a different legal theory. He went to court, arguing that evolution was simply another religion and that his own rights were overridden when he was forced to teach Darwin's theories as required by the standard curriculum.[74] His claim was rejected—the court found that the state could insist that its teachers teach its curriculum and the court rejected the characterization of evolution as "religion," describing it instead as "the widely accepted scientific explanation of the origin of life."[75]

Here again it is important to understand that it is not simply that religion is losing—it is mainstream science that is winning. Thus Stephen Carter, in the course of a sympathetic account of the views of creationists, notes that he "would be distressed were creationism to be offered as part of the curriculum at a public school supported by tax dollars, but it is important to note the reason. I would be distressed because I think it bad science—no more and no less."[76]

Finally, perhaps the sharpest blow to traditional religion in this area came when some Tennessee parents, describing themselves as "born again Christians," went to court in 1983 to argue that their children should be excused from public school classes when material offensive to their religion, including evolution, was taught.[77] They were not seeking the teaching of creationism or anything else—they just wanted released time. But the court rejected their free exercise of religion claim, saying that attending class did not require "affirmation or denial of a religious belief, or performance or non-performance of a religious exercise or practice."[78] The court further concluded that the only way to accommodate the parents' claim would be to eliminate all material offensive to their religion, and "the Supreme Court has clearly held that it violates the Establishment Clause to tailor a public school's curriculum to satisfy the principles or prohibitions of any religion."[79] The *Epperson* case was cited for the last proposition.

The Growth of Civil Religion

The success of evolution in the courtrooms provides a strong measure of protection for science against a possible rival. It does not, however, fully account for the modern relationship between science and religion in American society. Religion has many claims that turn not at all on Darwin, and religion plays a major role in modern American life. Moreover, when science is not directly involved, we have seen that the courts have allowed the church to have considerable influence, as in the regulation of homosexual behavior. Nonetheless, when we examine the role of American religion in public life across the board, we see religion as a smaller presence than is required by logic and law. We also see science playing a larger role in many debates than might be expected.

This is not happening because Americans are flocking to atheism or agnosticism. Rumors of the death of religion in America are entirely unfounded. The percentage of Americans affiliated with a religious group is higher today than in the early 1950s and much higher than it was in the 1780s.[80] Moreover, the fastest growing denominations tend to be those with the most literalistic interpretation of the Bible.[81]

But the other side of the coin is revealing. The mainstream Protestant denominations—such as the Presbyterians, Lutherans, and Episcopalians—are in decline.[82] Moreover, the content of these traditional reli-

gions, as well as others, has become increasingly secularized.[83] Religions have sought to soften their distinctive teachings in order to appeal to an increasingly mobile and modernized constituency.

At the same time, America's "civil" or "political" religion has become increasingly pervasive and hard to distinguish from the watered-down doctrines of the mainstream churches. Sociologist Peter L. Berger has defined civil religion as "basic convictions about human destiny and human rights as expressed in American democratic institutions."[84] At times, our civil religion in practice becomes a nonthreatening notion that America and Americans believe in a vague, undemanding sort of God. As President Eisenhower reportedly said, "Our government makes no sense unless it is founded in a deeply felt religious faith—and I don't care what it is."[85] More recently, President Bush spoke of "our Nation's Judeo-Christian moral heritage and . . . the timeless values that have united Americans of all religions and all walks of life: love of God and family, personal responsibility and virtue, respect for the law, and concern for others."[86]

To some extent, American religion is a victim of its own success. The genuine opportunity for free exercise attracts people with countless beliefs from around the globe. Under the circumstances, public endorsement of any distinctive religious teaching is bound to offend quite a large number of Americans. It is important to remember that many objections to government-sponsored religious observances stem not from the complaints of atheists but from those of different faiths. For example, the 1963 U.S. Supreme Court case striking down Bible readings in the public schools was brought by a church-going Unitarian who objected, among other things, to the theological doctrine of the Trinity.[87] Earlier challenges to Bible readings were brought by Catholics who objected to use of the King James translation of the Bible, which was not approved by Catholic ecclesiastical authority.[88] In Boston, in 1859, an eleven-year-old Catholic boy was beaten by his teacher because he would not read the Ten Commandments from the King James version. When a court held that this discipline was proper, public outrage led to changes on the Boston School Committee.[89]

The practices of minority religions remain controversial today. In 1993, the Supreme Court struck down a Hialeah, Florida, ordinance that forbid the Santeria religion's practice of animal sacrifice.[90] The Court noted the ordinance had been supported by many Cuban immi-

grants who were familiar with Santeria from their native country, and who applauded the fact that, in Cuba, "people were put in jail for practicing this religion."[91] In America that cannot happen, but clearly it is true that a Santeria-dominated legislature could not impose its religious beliefs on an unconsenting minority.

The net effect is that religion, which can be highly distinctive, must be watered down when it is linked in any way with the government. Thus consider the well-known Supreme Court decisions allowing display on public property of a creche when it is surrounded by a "Seasons Greetings" banner and plastic reindeer,[92] but not when it stands alone.[93]

None of this means that religion cannot influence public debate and legislation. When a secular purpose can be shown, laws that mandate Sunday closings[94] or ban sodomy[95] will be upheld. But the tolerance demanded by the free exercise and nonestablishment clauses has an impact. On many issues, religious leaders, afraid of offending others and of losing parishioners, shy away from strong moral pronouncements. The stability of our pluralistic political community can only stand so much. As John Rawls has put it, the "overlapping consensus" needed if groups with different beliefs are to live peacefully together implies that religious groups themselves must be tolerant of other approaches to the truth.[96]

Stephen Carter argues for greater acceptance by American elites of people with strong traditional faith, but he also envisions a society in which religion remains separate from and critical of the state and in which various viewpoints can flourish.[97] According to Carter, religious groups that would take away the freedom of others should be opposed precisely because of the content of their beliefs.[98] The proper political goal, according to Carter, is the participation of religious and nonreligious groups in a "state that loves liberty and cherishes its diversity."[99]

Science, Progress, and Values

If religion in a pluralistic society is unlikely to be a unified source of values, the scientific community, with its unusual degree of internal coherence, is in some respects better off. Moreover, changes in the American conception of progress have strengthened the influence of science. In its Enlightenment embodiment, progress embraced the idea of improvement throughout human affairs. In this century, however,

world wars, totalitarian regimes, and the growth of relativistic philosophies have undermined that faith.[100] We are no longer sure that our political ideas are moving forward, but we still like the idea of forward movement. So what remains? The answer is science—the one institution where progress is still the unashamed touchstone. Progressivism has survived today largely because modern thinkers "have divorced it from the 'heavenly city of the eighteenth century philosophers,' tied it to the cause of democracy and abundance, and brought it down to earth."[101] Thus the linkage between science and faith available to the framers has fallen victim not only to Darwinism, but to increased secularization and pessimism:

> In its inception when the secular order embraced the vision of a perfected humanity and a new human community, important segments of the community of faith could identify with the efforts to achieve such a goal. In that situation a collapse of faith into the general cultural situation was understandable. But with the decline of that vision and its supersession by the rise to dominance of the "technological imperative" it has become more difficult to find in the secular sphere reflections of a substantive Christian purpose.[102]

Thus in the public sphere appeals to science and its progressive values are common. We may no longer believe we can make better people, but we believe we can always learn more about the natural world, and some type of progress remains better than none.

But we must be cautious about what science cannot do. It is precisely its lack of normative content that makes progress an unproblematic norm in the scientific community. Science does not tell us what we ought to do. Indeed, it disclaims any such authority. If it did otherwise, it would weaken its claims to neutrality and testability. But we often forget that. A discussion of whether a computer can be built or whether a genetic therapy can be achieved quietly slips into an assumption that the computer or the therapy ought to be undertaken. Science, given the absence of a loud voice for traditional religion, often plays a large role in our thinking about the kind of society we ought to build.[103]

The theory of evolution itself offers an excellent example. As a scientific theory it has had enormous influence. But it has done much more than that. From nineteenth-century Social Darwinism to modern sociobiology, evolutionary ideas have spilled over into theories about human virtue and morality.[104] The presentation of those theories is perfectly appropriate and understandable—it would be odd indeed if science did

not influence our thinking on nonscientific issues. But matters of morality, in the end, are not subject to the scientific method. One can believe, for example, that all of the physical similarity in the world does not prove that human moral choices are indistinguishable from the choices made by other animals. As one twentieth-century theologian wrote, "it is not true that a specific kind of continuity in the natural order affects the life of the human spirit. . . . Sin is not found in the brutes, and anyone who professes to find it there misunderstands the concept 'sin.' "[105] These voices too often go unheard when speculations begin about the implications of the latest scientific breakthrough. Our pluralism makes the voices talking about values so diverse and dilute that they are too easily ignored.

Thus basic science occupies a favorable position indeed in American law and culture. The Constitution shields science from its rival—religion—and from government suppression. It lays the groundwork for generous funding, and statutes assure that the resulting funding is parceled out by the scientific community itself. Meanwhile in our pluralistic culture with traditional religious voices often weak and divided, science even plays a major role in the formation of our values. Throughout the entire process, the progressive ethos of science utterly dominates the cautious process norms of the lawyer. But when we come to applying science to the real world through technology, the tables are turned with a vengeance.