Confronting the Tree of Life: Three Court Cases in Modern American History

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(ABSTRACT)

Like few other concepts in the history of science, Darwinian evolution prompted humans to question their most basic assumptions about themselves. Among the theory's most controversial implications, the principle of *common descent* insisted that humans were kin to other species. As such, common descent challenged the previously unquestioned tradition of *anthropocentrism*, which held that humans were distinct from and superior to other species.

In order to discern common descent's impact on anthropocentrism, I will examine three court cases from an eighty-year span of American history, where resistance to common descent was especially virulent. Courtrooms provided the nation's leading critics of common descent an arena in which to protest the theory's most egregious offenses. As common descent garnered increasing support from scientists and educators, however, anthropocentrists modified their position accordingly. Initially, they stigmatized monkeys and apes precisely because those animals were the most genealogically proximate to humans. As common descent became more accepted, however, this position became increasingly difficult to defend. Accordingly, many anthropocentrists abandoned their obsession with primates and instead engaged the entire tree of life, including its mysterious origin. By the turn of the millennium, even as some anthropocentrists increasingly accepted humanity's kinship to other species, many continued to cite human intelligence as legitimate grounds for anthropocentric behavior. Thus, while anthropocentrism survived the threat of common descent, it had to accommodate the Darwinian onslaught in order to do so.

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Introduction

"If man had not been his own classifier, he would never have thought of founding a separate order for his own reception."[1]

~ Charles Darwin, 1871

In December, 1831, twenty-two-year-old Charles Robert Darwin set sail aboard *H.M.S. Beagle* on a survey expedition that spent most of its five years exploring the southern hemisphere's coasts. At the outset of the voyage, Darwin subscribed to the scientifically orthodox view, reinforced by the Biblical story of creation, that each species had been created as such by divine decree. "I did not then in the least doubt the strict and literal truth of every word in the Bible," he later acknowledged.[2] His observations aboard the *Beagle*, however, prompted him to question his presumption that each species had been created as such. In the Galapagos Archipelago, for example, he noticed that while each island's flora and fauna generally resembled the biota on neighboring islands, there were subtle differences unique to each island. "These facts seemed to me to throw some light on the origin of species," he wrote.[3]

Upon his return to England in 1836, Darwin began keeping a secret notebook on the "transmutation of species." In it, he pondered the possibility that different species had descended from a common ancestor. As early as 1837, Darwin already employed the phrase "tree of life" to describe the genealogical connections between living things.[4] But while his transmutation notebooks indicated that he had converted to an evolutionary point-of-view, Darwin still had not determined what mechanism drove the process. That

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[1] Charles Darwin, *The Descent of Man* (New York: New York University Press, 1989), pp. 165-166.
[2] Charles Darwin, *The Autobiography of Charles Darwin*, edited by Francis Darwin (Amherst: Prometheus Books, 2000), p. 57.
[3] Charles Darwin, Darwin, *On the Origin of Species: A Facsimile of the First Edition*. (Cambridge: Harvard University Press, 1964), p.1.
[4] Charles Darwin, *Charles Darwin's Notebooks*, edited by Paul Barrett, Peter Gautrey, Sandra Herbert, David Kohn, and Sydney Smith (Cambridge: Cambridge University Press, 1987), p. 176.

changed in the autumn of 1838, when Darwin read economist Thomas Malthus's *Essay on the Principle of Population.* Malthus argued that as human population grew more rapidly than the resources on which humans relied, competition for those resources necessarily intensified. Darwin adopted the principle and extended it to the entire biological world. Because all living things compete for limited resources, Darwin surmised, individuals better suited to their environment are more likely to survive and leave similarly well-adapted progeny. This mechanism, which Darwin dubbed "natural selection," explained how different species emerged from the same ancestral species and, importantly, supported his suspicion that different species were related.

Armed with a convincing theory of evolution, Darwin quietly accrued evidence in its favor. He did so deliberately, because he anticipated (correctly, as it happens) that his theory might meet resistance. In fact, he kept his revolutionary hypothesis a secret from the world for over twenty years. When he did share his theory with select confidants, he did so almost apologetically. "I am almost convinced," he wrote to Joseph Hooker in 1844, "that species are not (it is like confessing a murder) immutable."[5] Indeed, Darwin might never have published the theory during his life had he not been scooped by a younger colleague. In an article he had ironically asked Darwin to comment on, a young naturalist named Alfred Russel Wallace proposed an evolutionary theory nearly identical to the one that Darwin had been secretly developing for the previous two decades. In light of Darwin's demonstrably extensive research, however, Darwin's friends, Charles Lyell and Joseph Hooker, determined that both men held some claim to ownership of the

[5] "Charles Darwin's letter to Joseph Hooker, January 11, 1844," *The Life and Letters of Charles Darwin*, edited by Francis Darwin (New York: Appleton and Company, 1896), p. 23.

theory. Unbeknownst to Wallace, his paper was read alongside an abstract by Darwin at the Linnean Society of London on July 1st, 1858.

The following year, Darwin elaborated on the theory in his magnum opus, *On the Origin of Species*. The book proved enormously influential, completely transforming the biological sciences. Darwin's theory also presented profound philosophical implications, challenging humans to reexamine their most basic assumptions about themselves and their place in the world. Accordingly, Darwin is remembered as "one of the truly great minds in western history," and some consider the revolution he spawned "the most fundamental of all intellectual revolutions in the history of mankind."[6]

But Darwin's theory of evolution was no monolith. It incorporated a broad suite of sub-theories, each with its own implications. Twentieth-century biologist Ernst Mayr even suggested that Darwin's theory of evolution was actually an amalgamation of five distinct theories: evolution as such, common descent, multiplication of species, gradualism, and natural selection.[7] Mayr distinguished each Darwinian component from the others and argued that each was "a full theory in its own right."[8]

My thesis will focus on one of those theories: the theory of common descent. I will ask how that theory has been articulated across time, and examine the resistance it has inspired. The decision to examine common descent is not an arbitrary one. As this thesis will show, the theory's success has prompted humans to reconsider the grounds on which they base anthropocentric behavior.

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[6] Donald Worster, *Nature's Economy: the Roots of Ecology* (San Francisco: Sierra Club, 1977), p. 168; Ernst Mayr, "The Nature of the Darwinian Revolution," *Evolution and the Diversity of Life: Selected Essays* (Cambridge: Belknap Press, 1976), p. 277.
[7] Ernst Mayr, "Darwin's Five Theories of Evolution," *The Darwinian Heritage*, edited by David Kohn (Princeton, Princeton University Press, 1985), pp. 755-772.
[8] Mayr, "Darwin's Five Theories of Evolution," p. 757.

As its name suggests, anthropocentrism encourages a human-centered perspective on the universe. The concept holds that humans are inherently more valuable than other species. Anthropocentrism went unquestioned for much of human history, and found support from a variety of Western history's most powerful institutions. The Judeo-Christian tradition, for example, taught that all species were created as such through separate acts of creation. Each species was an essentialist group with its own unique genealogical history. Species were isolated like islands, thereby validating species-centered behavior. In Genesis, God affirmed anthropocentrism's validity when He promised humans dominion over every other living thing.

Anthropocentrism was further reinforced by the Great Chain of Being. According to historian Arthur Lovejoy, the Great Chain of Being was "one of the half-dozen most potent and persistent presuppositions in Western thought."[9] It organized everything in the universe according to a hierarchy of value, with dirt at the bottom and God at the top. Humans, meanwhile, occupied a conspicuous position, linking the material universe with the ethereal one. On the one hand, humans, confined to their material bodies, were far inferior to God and the angels. On the other hand, humans, alone among nature, possessed an ethereal soul. This arrangement may have rendered humans subject to God's pastoral power, but it also rendered them superior to the rest of the material universe.

Darwin's theory of common descent undermined these assumptions, however. According to common descent, humans had not been created as such. Instead, they had descended, along with other extant species, from the same pre-existing species. Although

[9] Arthur Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Cambridge: Harvard University Press, 1964), p. viii.

the precise breadth of humanity's new family tree remained inexact, the most liberal interpretations of the theory argued that *all* living things, however different, belonged to a single tree of life. Darwin himself allowed for the possibility. "It does not seem incredible that, from some such low and intermediate form, both animals and plants may have been developed," he wrote. "If we admit this," he added, "we must likewise admit that all the organic beings which have ever lived on this earth may be descended from some one primordial form."[10]

Common descent thus undermined essentialist divisions among species, and linked humans in seamless continuity to other living things. Moreover, because each species had presumably endured the same amount of evolution, common descent challenged the Great Chain of Being's vertical orientation. As paleontologist Stephen Jay Gould once opined, "In Darwin's world, all (as survivors in a tough game) have some claim to equal status."[11] Thus, because common descent undermined the traditional grounds for anthropocentrism, many humans resisted the theory. In a series of Gallup polls between 1982 and 2006, for example, a robust plurality (45 percent) of sampled American citizens consistently confirmed their belief that "God created human beings pretty much in their present form at one time within the last 10,000 years." In that same span but at the other extreme, no more than 13 percent of the population accepted an evolutionary process in which God had no part.[12] For many Americans, accepting other species as one's kin remained a troublesome adjustment.

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[10] Charles Darwin, *The Origin of the Species*, 6th edition (New York: Collier and Son, 1909) p. 452. Sixth edition originally published in 1872.
[11] Stephen Jay Gould, *Wonderful Life: the Burgess Shale and the Nature of History* (New York: Norton and Company, 1989), p. 42.
[12] Frank Newport, "American Beliefs: Evolution vs. Bible's Explanation of Human Origins," *Gallup News Service*, March 8, 2006.

Common descent's pervasive implications were not lost on twentieth-century biologist Ernst Mayr. He maintained that the scientific acceptance of common descent "effectively ended the anthropocentric tradition that had been maintained by the Bible and by most philosophies."[13] "By destroying the anthropocentric concept of the universe," he elsewhere opined, "it caused a greater upheaval in man's thinking than any other scientific advance since the rebirth of science in the Renaissance."[14] I argue that Americans' historical behavior suggests otherwise. Anthropocentrism survived the Darwinian onslaught, and in fact continues to thrive. In order to do so, however, it has had to accommodate common descent's increasing support both in the scientific community and in the courts.

Protests against common descent sometimes found expression in Biblical rhetoric, other times not. "All the religious controversy that followed the publishing of the *Origin*," wrote environmental historian Donald Worster, "did not conceal the fact that the real issue was whether man could admit he was fully a part of nature or not."[15] Thus, an important distinction must be made. Anti-evolutionism and anthropocentrism are not interchangeable and should not be mistaken. Just as common descent is but a component of Darwinian evolution, so too is anthropocentrism but one component of anti-evolutionism. Just as one might reject natural selection, but accept common descent, so too might one reject the Genesis story of creation, but still believe in anthropocentrism.

In order to gain a better understanding of common descent's impact on anthropocentric arguments, I will examine three American court cases that deal with Darwinian evolution. The decision to focus on the United States is not merely one of

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[13] Ernst Mayr, *This is Biology: the Science of the Living World* (Cambridge: Belknap Press, 1998), p. 182.
[14] Mayr, "The Nature of the Darwinian Revolution," p. 291.
[15] Worster, *Nature's Economy*, p. 182-183.

convenience. Although Darwinism has endured criticism across the globe, philosopher of biology Philip Kitcher observed, "nowhere have these efforts been more strenuous than in the United States."[16] The resistance is curious, especially since the United States' pace-setting research in the biological sciences has largely been predicated on Darwinian evolution. The United States has always harbored pockets of very conservative Christians, however, who believe their religion is incompatible with Darwinian evolution.

Anti-evolutionists primarily complained about schoolchildren's forced exposure to the theory. Their reasons were both ideological and pragmatic. "Americans regard the public schools as a most vital civic institution for the preservation of a democratic system of government," Supreme Court Justice William Brennan wrote.[17] At the same time, however, public classrooms were subject to nonscientific authorities (i.e., state legislatures and school boards), allowing anti-evolutionists to exert more influence.

Because courts mediated access to the classroom, skirmishes over evolution's place in school curricula often resulted in high-profile court cases. The cases highlighted the courtroom's unique role in American society. According to the American Bar Association, "the best way to get to the truth is to allow all the competing parties to present their views to an impartial third party as adversaries, or opponents, under rules that permit the evidence to be presented fairly and in an orderly fashion."[18] The courtroom thus provided critics of common descent a unique forum in which they protested the theory's most egregious implications. As legal historian Robert Ferguson observed, "a communal rule of law survives only where the structure of regulations (the

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[16] Philip Kitcher, *Living with Darwin: Evolution, Design, and the Future of Faith* (Oxford: Oxford University Press, 2007), p. 2.
[17] *Abingdon School District v. Schempp [374 U.S. 203]. June 17, 1963.*
[18] Robert Ferguson, *The Trial in American Life* (Chicago: Chicago University Press, 2007), p. 6.

law) exists in relation to the disposition of cultural forces (social norms)."[19] The frequency with which evolution was debated thus indicates the level of resistance it inspired. According to Michel Foucault, examining these points of dissident protest allows one to better understand how two ideas conflict, thereby elucidating each concept's boundaries. He advised historians to treat "resistance as a chemical catalyst so as to bring to light power relations, locate their position, and find out their point of application and the methods used."[20] The courtroom provides the best opportunity to test Foucault's suggestion. In no other place was resistance so meticulously articulated.

In addition to the debates it oversaw, however, the judiciary was itself a dynamic institution. Because judges increasingly invoked the first clause of the First Amendment when deciding cases that dealt with common descent, efforts to accommodate judicial precedent influenced the tenor of debate. Thus, shifting interpretations of the Establishment Clause, which promises that "Congress shall make no law respecting an establishment of religion," had immense impact on the fate of common descent and anthropocentrism over the past years.

The first chapter will examine complaints against common descent at the celebrated Scopes "Monkey Trial" of 1925. The episode took shape when a young teacher agreed, at the behest of Dayton's civic leaders, to stand trial for violating a recently passed statute that prohibited instructors from teaching their students about Darwinian evolution. A sensationalized cultural flashpoint sometimes dubbed "the trial of the century," the Scopes trial also showcased anthropocentrists' most base response to the theory of common descent. Although common descent implied a startlingly diverse

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[19] Ferguson, *The Trial in American Life*, p. 11
[20] Michel Foucault, "The Subject and Power," *Critical Inquiry* Vol. 8 No. 4 (Summer 1982), p. 780.

tree of life, anthropocentrists most frequently stigmatized the branches closest to them. As such, monkeys and apes emerged as powerful cultural symbols of evolution, though their proper relationship to humans was frequently misinterpreted. Although Darwinian evolution *actually* rendered monkeys and humans cousins, for example, many anthropocentrists *assumed* the theory deemed monkeys our ancestors. .

To prohibit the theory of common descent from public classrooms, critics of the theory cited its incompatibility with the Biblical story of Genesis. Because they relied on a literal interpretation of the Bible, these individuals are referred to as *fundamentalist Christians*, or simply *fundamentalists*.[21] Although their dispersal across the nation was uneven, fundamentalists were most prevalent in rural areas and, according to most sources, even comprised a majority in Dayton, Tennessee. Following the trial, the Dayton court upheld the state's right to reject common descent on Biblical grounds. Their success inspired similar statutes in Arkansas and Mississippi.

The second chapter begins with a survey of common descent's increased acceptance in American society. The modern synthesis cemented common descent's integral place in modern biology. Soon thereafter, the National Science Foundation, witness to the critical role science played in winning World War II and in the midst of the Cold War, began endorsing scientific curricula that promoted common descent. Finally, in *Epperson vs. Arkansas* in 1968, the United States Supreme Court even ruled Arkansas's prohibition on teaching common descent unconstitutional because it promoted a religious agenda, a violation of the Establishment Clause.

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[21] The term "fundamentalist," in this context, references a volume of essays edited by Reuben Archer Torrey in 1917, and published under the title *The Fundamentals: A Testimony to the Truth*. The essays stressed, among other things, the inerrancy of the Bible. See: Reuben Archer Torrey, *The Fundamentals*, (Grand Rapids: Baker Books, 2003).

Nevertheless, Arkansas passed another statute in 1981, which likewise intended to limit Darwinian evolution in the classroom. When a host of Arkansan parents and civic organizations filed suit against the state, *McLean vs. Arkansas* was born. This time, however, several things had changed, each reflecting common descent's improved social standing. In response to *Epperson*, for example, critics of common descent no longer appealed to the Bible as a scientific authority. Instead, they offered "scientific" evidence for their suspiciously Christian agenda. They even called themselves *creation-scientists*, or simply *creationists*. What is more, whereas fundamentalists had sought to prohibit common descent from the classroom, creationists merely sought to have their theory afforded equal time.

In addition to complaints about monkeys, however, *McLean* also showcased considerable debate about life's origin in a Darwinian universe. Heeding Loren Eiseley's assertion that "the recovery of the lost history of life" was "one of the greatest scientific achievements of all time," anti-evolutionists demonstrated an increased interest in humanity's lost history.[22] While the public generally continued to stigmatize other primates in good anthropocentric fashion, many others found that the deeper in time they traced their family, the broader and more exotic their list of contemporary cousins grew. Because the origin of life served as the ultimate nexus potentially implicated every living thing, debate about it signaled the first hesitant steps away from anthropocentrism and toward biocentrism. Despite these concessions, however, the court ruled the "equal-time" legislation unconstitutional because it too violated the Establishment Clause.

Finally, the third chapter begins with the recognition that, by the turn of the millennium, the theory of common descent found either explicit or implicit support from

[22] Loren Eiseley, *Darwin's Century* (New York: Doubleday and Company, 1958), p. 6.

biology, education, and the judiciary. Thus, when anti-evolution sentiment emerged anew under the name *intelligent design* (ID) in the late 1990s, it made several accommodations. Like their creationist predecessors, for example, ID proponents also claimed to disavow any religious motivation. Other accommodations were unique to the ID movement, however. The venue of political activism had changed, for example. Unable to garner the same level of support enjoyed by their anti-evolution predecessors, ID proponents abandoned appeals to state legislatures and sought instead to influence local school boards. What is more, when a school board in Pennsylvania resolved to promote ID, anti-evolutionists offered their most conciliatory demands yet. While fundamentalists had prohibited common descent and creationists had sought to compliment it with a more Genesis-friendly alternative, ID proponents agreed to teach the theory of common descent exclusively. They merely asked that students be made aware of ID's existence. Offended parents filed suit in early 2005, and *Kitzmiller vs. Dover* was born.

The most important change concerned the nature of the resistance itself. The theory of common descent so permeated American society that it prompted rifts among the nation's ID leaders. Many continued to conflate evolution with monkeys, but some of ID's most prominent leaders publicly *accepted* common descent in order to expedite arguments against what they considered Darwinism's shakiest components. The veritable triumph of common descent begged the question: was anthropocentrism dead? Indeed, it was not. While some conceded humanity's kinship to other species, many more grounded their anthropocentrism in another arena altogether: human intellect. Although intelligence-based anthropocentrism had existed long before 2005, the ID

movement imbued it with more importance than ever. What is more, both critics *and* supporters of common descent were apt to promote intelligence-based anthropocentrism. The court, meanwhile, ruled ID unconstitutional because its emphasis on a "master intellect" too closely resembled previous emphases on God, a violation of the Establishment Clause.

Thus, while a plurality of the American populace continued to reject common descent, the nation's leading anti-evolutionists were more accommodating. These three trials not only garnered significant national attention, they also revealed how institutional support for common descent prompted leading anti-evolutionists to reevaluate their claims of superiority. In 1925, anti-evolutionists employed overt anthropocentric rhetoric when rejecting Darwinism. Anti-evolutionists took up arms at what Cary Wolfe has called "the boundary of the human," denouncing most loudly those cousins closest to the border: monkeys and apes.[23] Battling under quite different conditions in 1981, anti-evolutionists continued to resist the monkeys at the gate, but they also identified a new point of debate: the origin of life. The deeper you trace back your ancestors, they discovered, the more exotic your contemporary field of cousins grows. By debating the origin of life, that ultimate nexus potentially connecting all living things, anti-evolutionists were unwittingly abandoning their anthropocentric posts and engaging the entire tree of life. By 2005, many anti-evolutionists publicly accepted common descent. Rather than forsaking anthropocentrism, however, anti-evolutionists reoriented the grounds on which they asserted human superiority. While humans had long presumed that their superior intellect endowed them with superior value, the concept assumed new

[23] Cary Wolfe, *Animal Rites: American Culture, the Discourse of Species, and Posthumanist Theory* (Chicago: Chicago University Press, 2003).

importance in light of the tree of life's acceptance. Thus, while anthropocentrism continues to resist common descent, its historical trajectory suggests accommodation and retreat.

Chapter One

Simian Sodas

Anthropocentrism at the Scopes Monkey Trial

Introduction

The trial of John Scopes, better known by its popular moniker, the Scopes "Monkey Trial," remains among the most celebrated court cases in the history of the United States. Frequently deemed the "trial of the century," the episode has spawned a robust historiography.[24] Capitalizing on these histories and a wealth of primary sources, I intend to examine anthropocentric reactions to common descent during the Scopes trial.

Anthropocentrism, which privileged human-centered viewpoints, profoundly influenced fundamentalist Christians' resistance to Darwin's theory of common descent during the Scopes trial. Among other things, fundamentalists insisted upon a literalist interpretation of the Bible, and grounded their anthropocentrism on the Biblical assertion that humans were created distinct from all other living things. Humans, fundamentalists argued, maintain a genealogy distinct from all other species. When responding to the theory of common descent, fundamentalists' locus of concern generally fell one place: between humans and other simian primates. Indeed, fundamentalists struggled with common descent's implications, frequently misinterpreting its most basic tenets and stigmatizing those species genealogically closest to humans.

[24] Ed Larson, *Summer for the Gods: the Scopes Trial and American's Continuing Debate over Science and Religion* (New York: Basic Books, 1997); Ray Ginger, *Six Days or Forever? Tennessee vs. John Thomas Scopes (*Oxford: Oxford University Press, 1958); Jerry Tompkins, *D-Days at Dayton: Reflections on the Scopes Trial* (Baton Rouge: Louisiana State University Press, 1965); Michael Lienesch, *In the Beginning: Fundamentalism, the Scopes Trial, and the Making of the Antievolution Movement* (Chapel Hill: University of North Carolina Press, 2007); Jeffrey Moran, *The Scopes Trial: a Brief History with Documents* (New York: Bedford, 2002); Ed Caudill, et al., *The Scopes Trial: a Photographic History* (Knoxville: University of Tennessee Press, 2000); Lyon Sprague de Camp, *The Great Monkey Trial* (New York: Doubleday, 1968); Leslie Allen, *Bryan and Darrow at Dayton* (New York: Arthur Lee and Company, 1925).

The Butler Act

Following World War I, fundamentalist Christians grew increasingly agitated. The new world order that had emerged in the wake of war, they complained, undermined traditional Christian principles that had long gone unquestioned in American society. Fundamentalists inherited many members from the pre-war Progressive movement, as well as that movement's emphasis on influencing public policy. As a result, several states considered anti-evolution statutes in the 1920s.

Though its statute was without question the most famous, Tennessee was not the first state to consider anti-evolution legislation. Yet even the earliest legislative campaigns to ban the theory frequently singled out common descent in explicitly anthropocentric terms. In 1922, for example, when an otherwise anonymous Scopes was still living in Kentucky, State Representative George Ellis introduced a bill in the Kentucky House of Representatives to prohibit the teaching of "Darwinism, Agnosticism, or the theory of Evolution as it pertains to man."[25] Tellingly, Ellis was concerned solely with Darwinism's genealogical implications for humans. "He seemed to be willing to let other animals evolve," Scopes later observed, "while he drew the line at man."[26] The bill passed in the House, but died in the Senate by only two votes.

In 1923, Oklahoma successfully banned any public-school textbook that advocated Darwinian evolution. The stipulation, which had been added as a rider to a popular education measure, mandated that "no copyright shall be purchased, nor textbook

[25] Amendment to the House Bill No. 197 (Oklahoma, 1923). See also: Ed Larson, *Trial and Error: the American Controversy over Creation and Evolution* (Oxford: Oxford University Press, 1985), p. 50.
[26] John Thomas Scopes, *Center of the Storm: Memoirs of John T. Scopes* (New York: Holt, Rinehart and Winston, 1967), p. 47-49.

adopted, that teaches the 'Materialistic Conception of History.'"[27] An addendum explained that the "Materialistic Conception of History" specifically meant the "Darwin theory of creation."[28] That very year, meanwhile, the nation's leading anti-evolutionist, William Jennings Bryan, penned a resolution that attacked Darwinism and was quickly approved by his adopted state of Florida. The nonbinding resolution, which labeled Darwinism "improper and subversive," specifically targeted common descent's genealogical implications for humans. The measure called on instructors to refrain from teaching "as true Darwinism or any other hypothesis that links man in blood relationship to any form of lower life."[29] If the resolution made no reference to the evolution of any species other than humans, it was because Bryan cared little about whether other species evolved. A year earlier, for example, he had written in the *New York Times* that "evolution applied to fish, birds, and beasts would not materially affect man's view of his own responsibilities."[30] Though the resolution provided no punitive measures, it rejected common descent as applied to humans.

Two years later, the Tennessee General Assembly made it a criminal act for any publicly funded instructor to teach common descent. Tennessee's 1925 law outlawing the theory is commonly referred to as "The Butler Act," in recognition of John Washington Butler, the representative who introduced the bill. Section 1 of the law reveals the extent to which restricting common descent was a central concern of its supporters:

> Be it enacted by the General Assembly of the State of Tennessee, That it shall be unlawful for any teacher in any of the Universities, Normals and all other public schools

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[27] Ed Caudill, et al, *The Scopes Trial: a Photographic History*, p. 1-2.
[28] Larson, *Trial and Error*, p. 50.
[29] House Concurrent Resolution Number 7 (Florida, 1923). See also: Larson, *Trial and Error*, p. 53.
[30] William Jennings Bryan, "God and Evolution," *New York Times*, February 26, 1922, p. 84.

> of the State which are supported in whole or in part by the public school funds of the State, 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]

The legislation, which further stipulated that any instructor found in violation of its terms would be subject to a fine, was only explicitly concerned with the theory of common descent. Nowhere in the text, for example, was the validity of natural selection challenged.

The House passed the bill by an overwhelming vote of 71-5, and the Senate soon followed suit by a vote of 24-6.[32] Butler later admitted that he had submitted the bill because he believed evolution was incompatible with the Bible. "I didn't know anything about evolution when I introduced it," he reported. "I'd read in the papers that boys and girls were coming home from school and telling their fathers and mothers that the Bible was all nonsense. When the bill passed," he added, "I naturally thought we wouldn't hear anymore about evolution in Tennessee."[33]

Indeed, the majority of the legislators who voted in favor of the Butler Act assumed it would never be enforced. "If the Butler Act was not intended to be enforced, it can hardly have been a law," explains historian Ray Ginger. Instead, he argued, the statute "was a gesture, a symbolic act."[34] Governor Austin Peay announced as much when he signed the bill into law in March of 1925. "Probably the law will never be applied," Governor Peay told the Tennessee legislature. "Nobody believes that it is going to be an active statute."[35]

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[31] 1925 Tennessee House Bill 185
[32] Roger Baldwin, *D-Days at Dayton*, edited by Tompkins, p. 56.
[33] Allen, *Bryan and Darrow at Dayton*, pp. 1-2.
[34] Ginger, *Six Days or Forever?*, p. 7.
[35] Scopes, *Center of the Storm*, p. 52.

Prelude to a Trial

Fittingly, John Scopes understood his life in Darwinian terms. "Heredity and environment are the all-powerful factors that, blended in the crucible of chance, control every individual," he once observed. "My own life is a study in environment, heredity, and chance."[36]

Indeed, had Scopes not caught a fleeting glimpse of a lovely young woman in late spring 1925, one of the most famous trials in American history might never have occurred. Rhea County High School in Dayton, Tennessee, where Scopes had spent the previous year as football coach and general science instructor, had recently closed its doors for the summer. Scopes's appointment was for only one year and, not being from Dayton, he had little reason to stay in the tiny town. Soon after commencement ceremonies, however, he caught sight of "a beautiful blonde [he] had somehow previously overlooked." Determined to correct his oversight, Scopes approached the young lady and, within minutes, had arranged to accompany her to her church's next social gathering. "With the church social yet to come," he later remembered, "there was no chance of my leaving town prematurely." He therefore "dawdled" around Dayton for an extra couple days, and, he later wrote, "because I remained I became the defendant in the trial that followed."[37]

More accurately, of course, the inertial path toward his trial actually began some time earlier. After Governor Peay signed the Butler Act into law, Lucille Milner, secretary at the American Civil Liberties Union in New York, spotted a three-inch item in

[36] Scopes, *Center of the Storm*, p. 3.
[37] Scopes, *Center of the Storm*, p. 56.

a Tennessee newspaper which read, "Tennessee Bars the Teaching of Evolution."[38] The fledgling ACLU drafted a press release which appeared in the *Chattanooga Times* on May 4, 1925. "We are looking for a Tennessee teacher who is willing to accept our services in testing this law in the courts," the announcement read. "Our lawyers think a friendly test case can be arranged without costing a teacher his or her job. Distinguished counsel have volunteered their services. All we need now is a willing client."[39] "That was the origin of probably the most widely reported trial on a public issue ever to have taken place in the United States," ACLU co-founder Roger Baldwin later observed.[40]

George Rappleyea, a displaced New Yorker and Dayton businessman, happened upon the ACLU's offer in the *Chattanooga Times* and brought it to the attention of other civic leaders assembled at Fred Robinson's drug store. Robinson's establishment served as a local public forum, where community leaders, enduring Prohibition, frequently discussed business and politics over sodas. The men in the drug store held differing opinions on the statute, but they collectively agreed that a "show trial" might bring a fair amount of publicity, and revenue, to the small town. Someone floated Scopes's name. Though Scopes had been hired as a temporary teacher, the men knew he was still in town.

Scopes was playing tennis with a friend when he was summonsed by a local boy to stop by Robinson's drug store. Though Scopes did not actually remember teaching evolution, he expressed a "willingness to test what I considered a bad law."[41] Thus, with little persuasion, Scopes was arrested. He then went back to playing tennis.

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[38] Larson, *Summer for the Gods*, p. 82.
[39] Larson, *Summer for the Gods*, p. 83.
[40] Roger Baldwin, *D-Days at Dayton*, edited by Tompkins, p. 56.
[41] Scopes, *Center of the Storm*, p. 4.

The "arrest" must then be understood for what it was: a deliberate affair orchestrated by Dayton officials in an effort to draw attention to the town. For his part, Scopes was willingly complicit. Dayton's leaders thus seized upon the judiciary's unique role as arbiter to opposing ideas vying for its institutional endorsement.

Trial as Carnival

"In Dayton," observes historian Edward Larson, "civic leaders all but manufactured a test case, then bragged about doing so."[42] Befitting their expectations, the trial proved a sensation. "The Ringling Brothers or Barnum and Bailey would have been pressed hard to produce more acts and sideshows and freaks than Dayton had," Scopes marveled. "It was a carnival from start to finish."[43] The Rhea County Courthouse served as the epicenter from which the town's festival atmosphere sprawled. "Near the courthouse the streets were jammed with hot dog stands and fanatics," wrote Ginger.[44] Sidewalks were lined with "soft-drink and sandwich stands along the curb, the vendors of religious books and watermelon, the peddlers auctioning calico and notions, open-air tabernacle flung up by evangelists."[45] By some estimates, the town's population tripled during the trial.[46] Over two hundred members of the media descended on the town of eighteen hundred. Drawn by the promise of a spectacle, they came from as far away as London.[47]

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[42] Larson, *Summer for the Gods*, p. 92.
[43] Scopes, *Center of the Storm*, p. 77, 98-99.
[44] Ginger, *Six Days or Forever?,* p. 86.
[45] Ginger, *Six Days or Forever?,* p. 92.
[46] Mary Lee Settle, *The Scopes Trial: The State of Tennessee vs. John Thomas Scopes* (New York: Watts, 1972), p. 57.
[47] Larson, *Summer for the Gods*, p. 142.

The most revolutionary journalistic medium was supplied courtesy of the *Chicago Tribune* and its subsidiary radio station, WGN. Radio was still in its infancy in 1925, but many immediately appreciated its potential. "I regard radio as the most wonderful of all the mysteries that man has unraveled or deals with," Bryan had observed in 1922.[48] The Scopes trial marked the first time in American history that radio would broadcast live legal proceedings. Radio's impact was not only immense but tangible. "WGN Radio received the rights to rearrange the way the courtroom was set up," observed John Williams, who now works at the station. "This was the first time this had happened where the media manipulates an event, literally the way it's played out."[49] "In a move symbolic of the trial itself," Larson added, "the jury box was removed from the center of the chamber to make room for three central microphones, which fed loudspeakers on the courthouse lawn and in four public auditoriums around town."[50]

As is frequently the case when barriers are first crossed, WGN received flak for its perceived intrusion into what was supposed to be a formal legal setting. The station defended itself by asserting that the trial was more of a public debate than a criminal prosecution. "This is not a criminal trial, as that term is ordinarily understood," the station asserted. "It is more like the opening of a summer university… the defendant, Scopes, is already a negligible factor. Nothing serious can happen to him. The contest is entirely over ideas."[51]

Most Americans still received their news from newspapers, however, and no newspaper reporter in Dayton was more famous or more widely read than H.L. Mencken.

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[48] Bryan, "Bryan Hails Radio as Aid to his Party," *New York Times*, September 3, 1922, pg. E10.
[49] Christine Lesiak, *Monkey Trial* (Alexandria: PBS Video, 2002), 27:50.
[50] Larson, *Summer for the Gods*, p. 142.
[51] "Broadcast of Scopes Trial Unprecedented," *Chicago Tribune*, July 5 1925, sec. 7, p. 6. See also: Larson, *Summer for the Gods*, p. 142.

Mencken, reporter for the *Baltimore Sun*, was among the most famous journalists in America. "In a way it was Mencken's show," Scopes once stated. "Although other newspaperman played more important roles in the day-by-day coverage, Mencken's columns were probably more widely read and in this way he may have been more influential."[52] According to biographer Lawrence Levine, Mencken "was a very important weathervane for understanding the changes that were taking place in the United States."[53]

To Mencken's distaste, he found that most of Tennessee's newspapers favored the prosecution. "The newspapers of the State, with one or two exceptions, were violently in favor of the prosecution," he wrote.[54] Nationwide, however, "most major American newspapers went on record favoring the defense."[55] Ed Caudill has even produced a monograph explaining that the newspaper industry's inherent emphasis on falsifiable claims rendered reporters more sympathetic to the defense.[56]

Gauging public opinion is harder still. While it may be difficult to determine with any precision how the nation's citizens felt about the issues at stake in the trial, most indications suggest that the crowd at Dayton was decidedly against common descent. Bryan, whose prowess was prone to hyperbole, estimated that "it is entirely safe to say that not one practicing Christian in ten believes that he has the blood of the brute in him."[57] Even those antagonistic towards Bryan generally accepted that the Great Commoner represented the vast majority. Mencken, for example, whose generalizations

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[52] Scopes, *Center of the Storm*, pp. 122-123.
[53] Christine Lesiak, *Monkey Trial*, 23:45.
[54] Mencken, "Aftermath," *Baltimore Evening Sun*, September 14, 1925.
[55] Larson, *Summer for the Gods*, p. 125.
[56] Ed Caudill, "The Roots of Bias: an Empiricist Press and Coverage of the Scopes Trial," *Journalism Monographs* (Columbia, SC: Association for Education in Journalism and Mass Communication, 1989).
[57] William Jennings Bryan, "Bryan Hails Radio as Aid to his Party," *New York Times*, September 3, 1922, p. E10.

must likewise be taken with a grain of salt, observed that the lack of Christian-inspired protests "is probably due in part to the fact that the fundamentalists are in overwhelming majority as far as the eye can reach."[58] "Heave an egg out of a Pullman window," he later sardonically remarked, "and you will hit a Fundamentalist almost anywhere in the United States today."[59]

Representing that fundamentalist majority, Bryan, who thrice ran for President on the Democratic ticket and who many considered the "greatest American orator of his time, or perhaps of any time," volunteered his services to the prosecution.[60] Bryan had been an active opponent of Darwinism for some time. To be sure, Bryan objected to Darwinian evolution on grounds beyond just common descent. For example, he detested natural selection's red-in-tooth-and-claw implications. He considered natural selection a "cruel law under which the strong killed off the weak," and complained that "the Darwinian theory represents man as reaching his present perfection by the operation of the law of hate – the merciless law by which the strong crowd out and kill the weak."[61]

Bryan's record reveals, however, that he most objected to Darwinism's ancestral implications for humans. The Florida resolution he penned in 1923, in which he rejected that humans shared any "blood relationship to any other form of life," marks an obvious example, but there are many others.[62] As early as 1909, for example, he was willing to allow that evolution had occurred, but refused to extend the process to humans. "I do not

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[58] "Mencken Finds Daytonians Full of Sickening Doubt about Value of Publicity," *Baltimore Evening Sun*, July 9, 1925.
[59] Mencken, "Aftermath," *Baltimore Evening Sun*, September 14, 1925.
[60] De Camp, *The Great Monkey Trial*, p. 36.
[61] Allen, *Bryan and Darrow at Dayton*, p. 104; William Jennings Bryan, "Prince of Peace," *Speeches of William Jennings Bryan,* (New York: Funk and Wagnalls, 1911) p. 266-268. See also: Larson, *Summer for the Gods*, p. 39.
[62] House Concurrent Resolution Number 7 (Florida, 1923).

carry the doctrine of evolution as far as some do," he wrote, for "I am not yet convinced that man is a lineal descendant of the lower animals."[63]

The year before he penned Florida's anti-evolution resolution, Bryan entered into a famous row over the theory in the pages of the *New York Times*. There, Bryan used explicitly anthropocentric language to articulate his objections to Darwinism, for he "expressed concern only about the teaching of *human* evolution."[64] In an article he wrote for the *Times* titled "God and Evolution," for example, Bryan resolutely affirmed that "the only part of evolution in which any considerable interest is felt is evolution applied to man." He further remarked that the only "evolution that is harmful – distinctly so – is the evolution that destroys man's family tree as taught by the Bible and makes him a descendant of the lower forms of life."[65] Two weeks later, under increased criticism for his anti-evolution remarks, Bryan told an audience in Philadelphia how he wished "the evolutionists would stop with their own ancestors and leave mine alone."[66]

Though Bryan was an avowed critic of common descent, he was only one insofar as the doctrine applied to humans. "I would not be concerned about the truth or falsity of evolution before man but for the fact that a concession as to the truth of evolution furnishes our opponents with an argument which they are quick to use," he wrote to Howard Kelly a month before the Scopes trial. "If we concede evolution up to man, we have only the Bible to support us in the contention that evolution stops before it reaches man."[67]

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[63] Ginger, *Six Days or Forever?,* p. 29.
[64] Larson, *Summer for the Gods*, p. 8. My italics
[65] William Jennings Bryan, "God and Evolution," *New York Times*, February 26, 1922, p. 84.
[66] William Jennings Bryan, "Bryan Flays Darwinism," *New York Times*, March 6, 1922, p. 10.
[67] William Jennings Bryan, Letter to Howard Kelly, June 22, 1925, in *Bryan Papers*. See also: Larson, *Summer for the Gods*, p. 130-131.

In response to Bryan's attacks on common descent, Henry Fairfield Osborn, president of the American Museum of Natural History and Bryan's earliest "chief adversary in the creation-evolution controversy," replied in the pages of the *Times*.[68] Osborn argued that the evolution of humans, to which Bryan so vehemently objected, was a firmly established scientific fact. "No living naturalist, so far as I know, differs as to the immutable truth of evolution," Osborn wrote, "and the ascent of all the extinct and existing forms of life, including man, from an original and single cellular state."[69]

Meanwhile, Clarence Darrow, the famed attorney whom even the prosecution recognized as the "greatest criminal lawyer in America," assisted the defense.[70] It was the only time in his illustrious legal career that he volunteered his services for free.[71] Though they once considered themselves close friends, Darrow and Bryan had grown increasingly antagonistic toward one another with the passage of time. On Independence Day, 1923, matters were exacerbated when Darrow wrote an open letter to Bryan on the front page of the *Chicago Tribune* asking the Great Commoner his opinion on more than fifty episodes from the Bible that, when read literally, contradicted modern science.[72] Bryan did not reply, claiming it beneath his dignity.

A year later, in 1924, Darrow served as counsel to Nathan Leopold, Jr. and Richard Loeb in another of the twentieth century's most famous trials. The young men had admitted to committing an excruciatingly heinous murder. Darrow's legal service attracted scorn from, among others, Bryan. Bryan attacked Darrow as the "greatest

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[68] Larson, *Summer for the Gods*, p. 7.
[69] Henry Fairfield Osborn, "Evolution and Religion," *New York Times*, March 5, 1922, p. 91.
[70] *The World's Most Famous Court Trial, Tennessee Evolution Case: a Complete Stenographic Report of the Famous Court Test of the Tennessee Anti-evolution Act, at Dayton, July 10 to 21, 1925, including Speeches and Arguments of Attorneys* (Cincinnati: National Book Company, 1925), p. 197.
[71] Caudill, et al, *The Scopes Trial*, p. 34.
[72] Clarence Darrow, "Darrow Asks W.J. Bryan to Answer These," *Chicago Tribune*, July 4, 1923, p. 1.

atheist or agnostic in the United States," a mantle Darrow adopted with pride.[73] Aside from religion, however, they also differed sharply on common descent's implications for humans. Whereas Bryan argued that the theory of common descent rendered humans merely "brute" and subject to no morals, Darrow cited the theory as the basis for a more biocentric ethics. "No one can feel this universal [evolutionary] relationship without being gentler, kindlier, and more humane toward all the infinite forms of beings that live with us, and must die with us," Darrow later wrote in his autobiography.[74]

Monkey Business

Historians have traditionally, and accurately, portrayed the trial as a battle between science and religion. To be sure, the trial's participants certainly considered it that way. The statute, after all, grounded its logic in Biblical literalism, and prosecutors submitted the Bible itself as state evidence. At one point, while appealing to the judge, Darrow reminded the court that Bryan had declared the trial "the final battle ground between science and religion." Bryan did not back away from the claim, and his fellow prosecutors agreed with their celebrated colleague. "I want to serve notice now," Attorney General Tom Stewart announced before the court, "they say it is a battle between religion and science, and in the name of God, I stand with religion." Remarkably, even the sitting judge, John T. Raulston, felt compelled to position himself relative to the purported conflict between science and Christianity. "If the Bible is involved," he announced from the bench, "I believe in it and am always on its side."[75]

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[73] *The World's Most Famous Court Trial*, p. 299.
[74] Clarence Darrow, *The Story of my Life* (New York: De Capo Press, 1932) p. 408-413. See also: Larson, *Summer for the Gods*, p. 72.
[75] *The World's Most Famous Court Trial,* p. 121, 146, 197, 282.

Indeed, I do not deny that religious sentiment influenced the trial. I intend to demonstrate, however, that the science-vs.-religion dichotomy fails to explain some of the more fascinating aspects of the trial. In addition to showcasing fundamentalist Christianity's formal objections to Darwinism, for example, I argue that the Scopes trial also revealed profound philosophical resistance to Darwin's theory of common descent. I maintain that the genealogical model advanced by Darwinists constituted a serious affront to fundamentalists' bedrock anthropocentric assumptions about the human place in nature.

Because anthropocentrists, by definition, conceptualized their universe from a human-centered perspective, they fixated on those species genealogically closest to them on the tree of life. Monkeys and apes thus emerged as powerful cultural symbols for the theory of common descent. Several important qualifications must be made from the outset, though. To begin, the monkey had existed as an anthropocentric symbol of common descent long before 1925. Within a year of the publication of Darwin's *On the Origin of Species*, for example, Bishop Wilberforce had famously, and somewhat snidely, asked Thomas H. Huxley whether he descended from a monkey on his mother's or his father's side of the family. "Wilberforce was concerned, above all else, to show conclusively that humans had not evolved from non-human animals," observed historian Frank James.[76]

Furthermore, although almost every historian who has ever revisited the *Scopes* trial has remarked that "Dayton was being turned into a carnival of monkey jokes," none

[76] Frank James, "An 'Open Clash between Science and the Church'?: Wilberforce, Huxley, and Hooker on Darwin at the British Association, Oxford, 1860," *Science and Beliefs: From Natural Philosophy to Natural Science, 1700-1900.* (Burlington: Ashgate, 2005)

has adequately assessed *why* monkeys assumed such importance.[77] Larson, who has written the most recent and most authoritative account of the Scopes trial, wrote that "the inevitable references to monkeys… appeared," though he never explained why those references should be considered inevitable.[78]

Monkey references were indeed rampant during the trial. Mencken is purported to have given the trial its popular moniker, the Scopes "Monkey Trial," while Dayton was alternately referred to as both "Monkeyville" and "Monkeytown." "People joked about monkeys *ad nauseam*," observed historian Lyon Sprague de Camp.[79] Dayton was inundated with "monkey songs, monkey souvenirs, [and] monkey jokes."[80] Prior to the trial, the young women of Dayton inspired "a short-lived fashion trend for shoulder wraps made of toy monkeys."[81] "Shopkeepers put cardboard monkeys in their windows, while children played with toy monkeys in the streets. Shops sold monkey dolls of stuffed cotton [and] lapel buttons reading: *Your Old Man's a Monkey!*" Two young girls from Chattanooga even sold cartoon drawings showing a monkey-like Bryan beneath the caption, "He denies his lineage!"[82]

Meanwhile, the constable's motorcycle bore a sign reading "Monkeyville Police," and a delivery van had "Monkeyville Express" emblazoned across its side.[83] A cache of "monkey umbrellas" was even imported from Germany. "The umbrellas had handles in the form of monkey heads," de Camp explained, and "when one pressed the monkey's

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[77] Settle, *The Scopes Trial*, p. 57.
[78] Larson, *Summer for the Gods*, p. 52.
[79] Christine Lesiak, *Monkey Trial*; De Camp, *The Great Monkey Trial*, p. 162. Italics in original
[80] Christine Lesiak, *Monkey Trial*.
[81] Moran, *The Scopes Trial*, p. 1.
[82] De Camp, *The Great Monkey Trial*, p. 162-163.
[83] Larson, *Summer for the Gods*, p. 105.

throat, the monkey rolled its eyes and stuck out its tongue."[84] "From the moment of the first shrill ballyhoo," recalled Scopes, "everyone in Dayton had referred to the coming trial as 'the monkey business."[85] Even F.E. Robinson, the local druggist and, incidentally, school superintendent, happily referred to his drug store as "Ape's Apothecary" and the "Simian Soda Fountain."[86]

Dayton's carnival atmosphere invited more than just simian *references*, though. "It seemed that everyone in the South who owned a monkey converged on the site of trial in Dayton, Tennessee," observes historian Jeffrey Moran.[87] The assortment of chimpanzees that vied for attention among Dayton's curiosity-mongers served a variety of purposes. Zack Miller, a Texas showman, brought a thirteen-year-old chimpanzee known as Big Joe to Dayton. Big Joe's owner hoped that if the good people of Dayton "could see a living chimpanzee," de Camp wrote, "they would recoil from the thought of kinship with the beast." Miller professed expertise in the field of primatology, and resolutely denounced the theory of common descent. "I have studied them [chimpanzees] for years," he announced, "and I have come to the conclusion, supported by scientific and demonstrable fact, that Darwin was wrong." Rather than sharing a common ancestor with humans, he asserted, "The anthropoid is the product of man who went down – he devolved."[88]

Another chimpanzee, however, garnered even more attention than Big Joe. Showman Harry Backenstahl brought a chimpanzee named Joe Mendi to Dayton, where the chimp proved a sensation. Furthermore, unlike Miller's plans for Big Joe,

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[84] De Camp, *The Great Monkey Trial*, p. 163.
[85] Scopes, *Center of the Storm*, p. 84.
[86] De Camp, *The Great Monkey Trial*, p. 108.
[87] Moran, *The Scopes Trial*, p. 1.
[88] De Camp, *The Great Monkey Trial*, p. 261, 268.

Backenstahl hoped to sell "the Scopes defense on the idea of hiring Joe Mendi as a living *proof* of evolution."[89] Though Backenstahl's offer was kindly rebuked, Joe Mendi achieved a level of celebrity on the streets of Dayton. His trainer, a young woman from Atlanta, took Joe Mendi for walks through the streets of Dayton. "Everyday," recalled Dayton citizen Eloise Reed, Joe Mendi's trainer "would bring him to courthouse in a different suit."[90] Dressed nattily to emphasize his link to humans, Joe Mendi commanded a huge crowd. Joe Mendi's managers highlighted the chimp's purported genealogical relationship to humans, advertising that "every man has a right to decide for himself whether his 'family tree' bore cocoanuts or not."[91]

This peculiar obsession with simian primates is only comprehensible in an anthropocentric context. Humans, struggling to accommodate the increasingly intrusive theory of common descent, caricatured those species to which they were presumably most kin. The monkey motif had served as a symbol of common descent long before the Scopes trial, and it would survive long after, but it found its most crystalline and widespread expression in the summer of 1925.

Common Descent on Trial

The first day of the trial was a Friday and began, like each day thereafter, with a prayer. Dayton's courthouse, the second largest in the state, was filled to the brim with Daytonians, out-of-towners, and a horde of reporters.[92] Proceedings were delayed to allow time for the press to photograph the trial's participants together in cordial poses.

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[89] De Camp, *The Great Monkey Trial*, p. 261. My italics
[90] Christine Lesiak, *Monkey Trial*, 34:00.
[91] Moran, *Scopes Monkey Trial*, p. 1.
[92] Larson, *Summer for the Gods*, p. 96.

Beyond that, the first day's business was generally consumed with interviewing potential jurors. Only nineteen potential jurors were brought before the court, and the state "had not bothered to question thirteen of them at all."[93] Even the defense was willing to accept most jurors, though, as might be expected, some potential jurors admitted that they just as soon not extend evolution to humans:

> Q (Darrow) – You have a prejudice against evolution, have you not?
> A (Juror) – Well, to some extent, I suppose I have
> Q – And against teaching it?
> A – Yes, I am against teaching evolution – evolution of man.[94]

Though the first day lacked any considerable drama, 200,000 words were transmitted over telegraph from Dayton that day, a record for a single event.[95] Even after court drew to a close that first Friday, legal counsel on both sides continued to exchange verbal barbs into the weekend. Bryan, especially, played to the crowd. Delivering an impromptu speech from the courthouse lawn, he promised that the trial would bring "this slimy thing, evolution, out of the darkness." Echoing the sentiments of so many across Tennessee, the nation, and the world, Bryan employed militaristic rhetoric when discussing the trial. "Now the facts of religion and evolution," he announced, "meet at last in a duel to the death."[96]

When court resumed on Monday, however, it was the defense that first drew attention to another "duel" fought between science and religion. Arthur Garfield Hays, counsel for the defense, proposed a bill criminalizing any theory that "denies the story that the earth is the center of the universe, as taught in the Bible, and to teach instead, that

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[93] Ginger, *Six Days or Forever?,* p. 99.
[94] *The World's Most Famous Court Trial*, p. 20.
[95] Larson, *Summer for the Gods*, p. 164.
[96] De Camp, *The Great Monkey Trial*, p. 228.

the earth and planets move around the sun."[97] He further suggested, tongue-in-cheek no doubt, that any teacher found guilty of the act be put to death. The suggested bill was facetious, of course, but it highlighted yet another historical episode in which Christians had once resisted being displaced from the center of their conceptual framework.

Anthropocentric attitudes were no less pervasive at the Scopes trial. Attorney General Tom Stewart resolutely told the courtroom that "I do not come from a monkey," to which defense attorney Dudley Field Malone responded, "We do not think you did either, General."[98] Indeed, many American citizens had long conflated Darwinism with the belief that humans descended from monkeys, when Darwinists themselves heartily rejected this claim. "At the time," Larson observed, "most Americans simply understood the theory of evolution to mean that people came from apes."[99] Upon interviewing the defendant's students, for example, one reporter for the *Nashville Banner* remarked that he liked Scopes, "but I don't believe I came from a monkey."[100]

Bryan, too, frequently utilized the monkey-as-ancestor motif when appealing to his audiences. "They [Darwinists] can't make a monkey out of me!" he'd often announce on his lecture circuit to uproarious applause.[101] Other times he would rhetorically ask his audience, "how can teachers tell students that they came from monkeys and not expect them to act like monkeys?" Still other times he would tell Darwinists that "while you may trace your ancestry back to the monkey if you find pleasure or pride in doing so, you shall not connect me with your family tree."[102]

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[97] *The World's Most Famous Court Trial*, p. 56.
[98] *The World's Most Famous Court Trial*, p. 65.
[99] Larson, *Summer for the Gods*, p. 116.
[100] "Dayton Snap Shots," *Nashville Banner*, July 12 1925, p. 8.
[101] William Jennings Bryan, "Bryan Flays Darwinism," *New York Times*, March 6, 1922, p. 10.
[102] Larson, *Summer for the Gods*, p. 116, 20.

For its part, the defense was at pains to dispel the misinterpretation. "The prosecution has twice since the beginning of the trial referred to man as descended from monkeys," an exasperated Malone complained to the court. "This may be the understanding of the theory of evolution of the prosecution. It is not the view, opinion or knowledge of evolution held by the defense. No scientist of any preeminent standing today holds such a view."[103] Winterton Curtis, a zoologist from the University of Missouri who had been brought to Dayton to serve as an expert witness for the defense, agreed. "It is not that men came from monkeys," he wrote in an affidavit to the court, "but that men, monkeys, and apes all came from a common mammalian ancestry millions of years in the past."[104] On the second to last day of the trial, moreover, Hays drew the court's attention to the state's newly endorsed Biology textbook, *Biology and Human Welfare*, from Peabody and Hunt. "Some of these animals," Hays read aloud from the textbook, "while resembling the human species in many characteristics, must, of course, be recognized as having evolved (developed) along special lines of their own, and none of them are to be thought of as the source or origin of the human species. It is futile, therefore, to look for the primitive stock of the human species in any existing animals."[105]

Frequently, opponents of common descent understood Darwinism's proper implications, but persisted in misrepresenting them. Indeed, despite his apparent demonstrations to the contrary, Bryan, who had once "deeply impressed [Osborn] with the fact that he ha[d] familiarized himself with many of the debatable points in Darwin's opinions," showed a better understanding of common descent than any other member of

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[103] *The World's Most Famous Court Trial*, p. 115.
[104] Allen, *Bryan and Darrow at Dayton*, p. 132.
[105] *The World's Most Famous Court Trial*, p. 215.

the prosecution.[106] The principles of common descent, he told the courtroom in Dayton, would not render monkeys the ancestors of humans, but rather it would mean that monkeys and humans shared "collateral relations." "It might mean," he added, "that instead of one being the ancestor of the other, they were all cousins."[107]

The conversation about humans' ancestry was explicitly taken up during the trial, though, curiously, the historical record offers differing accounts on the matter. According to the trial's official transcripts, the topic was broached when Hays questioned Howard Morgan, one of Scopes's students. "Is there anything in this book that says man is descended from a monkey?" he asked the student. "No, sir," replied young Morgan, "not that I know of."[108] De Camp's retelling of the cross-examination mirrors the trial's transcripts, while historian Ray Ginger tells it differently. In his telling, it was Darrow, not Hays, who questioned the student. The student, meanwhile, was not Morgan, but his classmate, Harry Shelton. "Did Mr. Scopes teach you that man came from a monkey?" Darrow is said to have asked the student:

> Spectators hunched forward. A hush spread over the room. A shriek from outside the building ripped through the silence. The piercing sound startled the uninformed; it may have seemed an assertion of ancestry to those who recognized its source: it originated with a monkey from the Hippodrome in New York, being exercised by its master on the courthouse lawn. In the turmoil, young Shelton's reply to Darrow was lost. Not that it mattered much.[109]

However the event transpired, critics of common descent were apt to resist any suggestion of sharing a "blood relation" with other species. Informed that they were misinterpreting the theory of common descent, the prosecution nevertheless reiterated its objections to common descent. For example, after being reminded that common descent

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[106] Henry Fairfield Osborn, "Evolution and Religion," *New York Times*, March 5, 1922, p. 91.
[107] *The World's Most Famous Court Trial*, p. 174.
[108] *The World's Most Famous Court Trial*, p. 128.
[109] *Ginger, Six Days or Forever?,* p. 124. Incidentally, Joe Mendi was the only chimpanzee in Dayton known to have ever performed at the Hippodrome.

did not imply that his ancestor was a monkey, Attorney General Stewart scarcely changed his tune. "I don't believe that I came from the same cell with the monkey and the ass," he defiantly told the courtroom.[110] Or, as Bryan put it, "'cousin' ape is as objectionable as 'grandpa' ape."[111] Meanwhile, Ben McKenzie, a local attorney and the prosecution's most jocular representative, even began to crack jokes about common descent's presumed implications. "They say they know that man is both of the animal and vegetable kingdoms, coming from the same source," he told the court. "If that is so, this great array has been eating up their relations – they are depopulating their relatives very rapidly!"[112]

As the prosecution readily admitted, therefore, it was not evolution as such to which they so vehemently objected, but common descent. Moreover, they only objected to its implications for humankind, for the theory necessarily implied that humans shared an ancestry with other species. As evidenced by the court transcripts, this was clearly a problem for many involved. Pacing the floor, Bryan read from Hunter's *Civic Biology*, the offending textbook from which Scopes taught. On page 194, he announced to the court, the book offers a chart which places humans among an estimated 3,500 other species of mammals:

> There is that book! There is the book they were teaching your children that man was a mammal and so indistinguishable among the mammals that they leave him there with thirty-four hundred and ninety-nine other mammals (Laughter and applause).[113]

Bryan's diatribe suggested a measure of confusion about the theory of common descent. His venom appeared aimed at humans' *classification* as mammals. This position had been advanced since Linnaeus, however, and found no serious resistance

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[110] *The World's Most Famous Court Trial*, p. 190.
[111] William Jennings Bryan, "Menace of Darwinism," *In His Image* (New York: Fleming Revell and Company, 1922), p. 102.
[112] *The World's Most Famous Court Trial*, p. 169.
[113] *The World's Most Famous Court Trial,* p. 175.

among Christians of any ilk. In the *Origin*, however, Darwin confidently suggested that Linnaeus's artificial system anticipated the reality of common descent. "I believe," Darwin wrote, "that community of descent – the one known cause of close similarity in organic beings – is the bond, which though observed by various degrees of modification, is partially revealed to us by our classifications."[114]

Thus, when Bryan impugned the chart in Hunter's *Civic Biology* purporting to show humans' relationship to living things, he did so because the relationship it showed was genealogical. The chart traced a shared genealogy among eighteen circles of varying size, each representing a host of morphologically distinct "kinds." Bryan recoiled at the chart's seamless continuity. Ever the orator, he ridiculed the chart before the court, complaining he the chart provided no distinction between humans and a host of other species. He peppered his speech with explicitly Biblical rhetoric. "Talk about putting Daniel in the lion's den!" he exclaimed before the court. "How dare those scientists put man in a little ring like that with lions and tigers and everything that is bad?" In response to Bryan's tirade, Malone expressed disbelief. "Whether Mr. Bryan knows it or not," Malone informed the court, "he is a mammal, he is an animal and he is a man."[115]

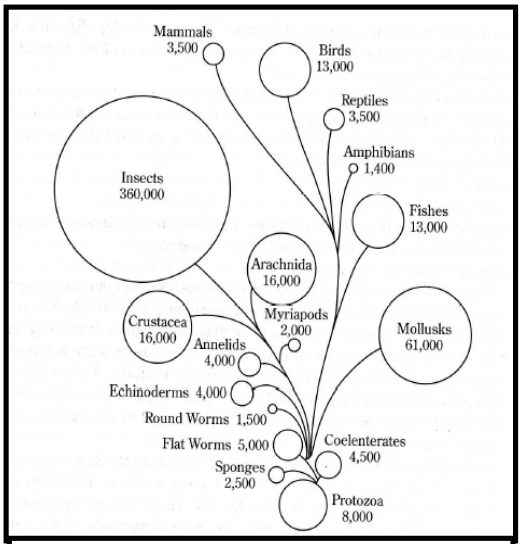

Illustration 1: The offending chart against which Bryan railed during the trial. Hunter labeled the graphic "the evolutionary tree."

George William Hunter, *Civic Biology* (New York, American Book Company, 1914), p. 194.

[114] Darwin, *The Origin of the Species*, 6th edition, p. 452.
[115] *The World's Most Famous Court Trial,* pp. 175, 183.

Mencken was less patient with Bryan. He called Bryan's speech "a grotesque performance and downright touching in its imbecility." He took Bryan at his word when the latter purportedly disclaimed his mammalian status. Mencken wrote about Bryan's speech for the *Baltimore Evening Sun*:

> Its climax came when he launched into a furious denunciation of the doctrine that man is a mammal. It seemed a sheer impossibility that any literate man should stand up in public and discharge any such nonsense. Yet the poor old fellow did it. Darrow stared incredulous. Malone sat with mouth wide open. Hays indulged himself one of his sardonic chuckles… To call a man a mammal, it appeared, was to flout the revelation of God.[116]

Mencken returned to the speech time and again. A week after the trial, Mencken still marveled that Bryan had committed "a folly almost incredible. I allude to his astounding argument against the notion that man is a mammal." Mencken continued, "I am glad I heard it, for otherwise I'd never believe it."[117] He bludgeoned the dead horse one last time in a retrospective written two months after the trial: "When he [Bryan] began denouncing the notion that man is a mammal even some of the hinds at Dayton were agape."[118]

To be fair, observed one historian, "Bryan did not, as simplified stories of the trial say, 'deny he was a mammal' in so many words. But he clearly implied it."[119] To be *truly* fair, however, Bryan's objections must be considered in conjunction with other statements he made about evolution. Though his comments in Dayton about mammals were rather bumbling, the record sufficiently demonstrates that Bryan most strenuously objected to the purported genealogical, rather than classificatory, connection between humans and other species. For example, a year before he drafted his Florida resolution,

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[116] Mencken, "Malone the Victor, Even Though Court Sides with Opponents, Says Mencken," *Baltimore Evening Sun*, July 17, 1925.
[117] Mencken, "Bryan," *Baltimore Evening Sun*, July 27, 1925.
[118] Mencken, "Aftermath," *Baltimore Evening Sun*, September 14, 1925.
[119] De Camp, *The Great Monkey Trial*, p. 321.

he employed very similar rhetoric in a speech he titled "The Menace of Darwinism." He objected not to humans' classification as mammals, but rather to any "hypothesis that links man in blood relationship with the brutes." Though "we might allow evolutionists to worship brutes as ancestors," he wrote, "they insist on connecting all mankind with the jungle. We have a right to protect our family tree."[120]

Indeed, protecting their species's family tree from slander remained many fundamentalists' foremost concern. In an era when Darwinism was still suffering from its partial "eclipse," Bryan would let no scientist escape being branded a Darwinist just because he or she did not endorse natural selection. It mattered not to him whether biologists squabbled over Darwin's mechanism of change. Irrespective of the mechanisms guiding it, he argued, the tree of life was insulting enough on its own. "My friends," he appealed to the audience in the Dayton courtroom, "when they discard his [Darwin's] explanations, they still teach his doctrines. Not one of these evolutionists have discarded Darwin's doctrine that makes life begin with one cell in the sea and continue in one unbroken line to man. Not one of them has discarded that."[121]

For their part, the defense employed common descent's implications to their own advantage. The nature of common descent, they argued, rendered moot the very law under which Scopes was being tried. The law specified that no instructor shall teach "that man descended from a *lower* order of animals."[122] As Hays pointed out, however, the law's use of the word "lower" assumed a scale of value that Darwin explicitly denied. Darwin, perhaps recognizing that his evolutionary model rendered all extant organisms

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[120] William Jennings Bryan, "Menace of Darwinism," *In His Image* (New York: Fleming Revell and Company, 1922), p. 91.
[121] *The World's Most Famous Court Trial,* p. 175.
[122] *The World's Most Famous Court Trial,* p. 5. My italics

equally successful companions in the struggle for life, once wrote that he did "not think that any one has a definite idea what is meant by higher."[123] Though Darwin frequently broke his own vow, he was at least aware that his evolutionary model provided no legitimate grounds for claims of "higher" or "lower" organisms.

Hays remarked that the prosecution's "theory seemed to be at the beginning that… evolution teaches that man has descended from a monkey." But, Hays continued, doing so would not have violated the Butler Act. Ever since Linnaeus, he explained, the word *order*, in scientific parlance, had meant to unify organisms under an artificial system. "To prove that man was descended from a monkey would not prove that man was descended from a lower order of animals," he explained, "because they are all in the same order of animals." He concluded that "they might say that man came from a *different* genus but not a *lower* order of animals."[124]

In the modern scientific lexicon, "different" had replaced "lower." In this context, "lower" only made sense inasmuch as it made reference to the long-defunct but frequently endorsed Great Chain of Being. Darwin's egalitarian view of life was a revolutionary one, and Hays knew it. "Perhaps that is new to you, gentlemen," he told the courtroom, "and I confess it was new to me."[125]

The trial's first full week concluded with Judge Raulston's decision that scientific testimony had no bearing on the proceedings and, as such, would not be allowed. "The evidence of experts would shed no light on the issues," he declared. He concluded, in an especially revealing parenthetic moment, that "I desire to suggest that I believe

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[123] "Charles Darwin's letter to Joseph Hooker, December 30, 1858," *More Letters of Charles Darwin*, edited by Francis Darwin (London: J. Murray. 1903) p. 114.
[124] *The World's Most Famous Court Trial,* p. 155. My italics
[125] *The World's Most Famous Court Trial,* p. 155.

evolutionists should at least show man the consideration to substitute the word 'ascend' for the word 'descend.'"[126] Spectators, and the media, realized that the decision destroyed any chance the defense may have had at arguing its case. "All that remains of the great cause of the State of Tennessee against the infidel Scopes is the formal business of bumping off the defendant," Mencken wrote on his way out of town.[127]

The trial was not over, however, and neither was the battle between the defense and the prosecution. In a statement over that second weekend, Bryan adopted the same imagery that had elicited such guffaws when used by McKenzie in court:

> This [Darwinian] hypothesis makes every living thing known in animal life a blood relative of every other living thing in animal life, and makes man a blood relative of them all – either an ancestor or a cousin. If this hypothesis were true, we would all be murderers if we swatted a fly or killed a bedbug, for we would be killing our kin, and we would be cannibals whenever we ate any of the mammals that, according to Mr. Scopes's teaching, are included with man in the little circle of the diagram of the biology taught by Scopes.[128]

Darrow, in a written reply, conceded that Darwinism's methods and implications might offend our delicate human sensitivities. His response, however, addressed implications from natural selection rather than common descent:

> No doubt the law of life, through all the past, has been cruel. As the great naturalist, Fabre, says: "Each man is in turn a guest and a dish. Life lives upon the vegetable world and upon the animal world. Different forms of life kill and devour each other. This is the law of nature, and nothing can change it.[129]

These competing statements were calculated efforts, especially as it became increasingly clear that Scopes's conviction was imminent. "A trial is not won or lost in court; a trial is won or lost in the community," Darrow once observed. "Judges and juries

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[126] *The World's Most Famous Court Trial*, p. 203.
[127] H.L. Mencken, "Battle Now Over, Mencken Sees; Genesis Triumphant and Ready for New Jousts, *Baltimore Evening Sun*, July, 18, 1925.
[128] Allen, *Bryan and Darrow at Dayton*, p. 104.
[129] Allen, *Bryan and Darrow at Dayton*, p. 107.

are moved by winds of opinion that seep into courtrooms from the newspapers and the streets and the market place."[130]

Indeed, it was precisely the newspapers, the streets, and the marketplace to which the defense most appealed when court resumed on Monday. They made two critically important maneuvers. Their first maneuver concerned scientific testimony. Though Judge Raulston had ruled scientific testimony inadmissible, he nevertheless allowed an affidavit from each scientist to be read into the record, with the jury absent, for potential use in the appellate courts. Most of the morning session was therefore taken up as Malone read affidavits from the defense's scientific experts. Accordingly, while the scientists' affidavits did not reach the twelve men on the jury, print and radio media carried them to the rest of America. "With the evolution of all other living things, both animal and plant, overwhelmingly attested by the facts," Malone intoned from Winterton Curtis's affidavit, "it is not only impossible, but puerile to separate man from the general course of events."[131] Reading the affidavits into the record therefore served the defense's broader purpose, as the press carried the scientists' testimony to an eager public.

The defense's second intriguing maneuver occurred in a different, and appropriately more dramatic, setting. "Although it would become the most famous scene in American legal history," Larson observed, "it did not occur in a courtroom."[132] As the day's lunch break drew nearer, and the heat in the cavernous courthouse grew more sweltering, Judge Raulston decided to convene the court's afternoon session on a pre-built stage in the courthouse lawn beneath pin-oak and maple trees.[133] Raulston told the

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[130] Ginger, *Six Days or Forever?*, p. 60.
[131] *The World's Most Famous Court Trial*, p. 261.
[132] Larson, *Summer for the Gods*, p. 4.
[133] Scopes, *Center of the Storm*, pp. 164-165.

spectators that he was worried about the courthouse's structural integrity. "The floor may give way," he announced. "The plaster is cracking downstairs. This floor was never intended to hold so many people; I told you that yesterday. When we begin to argue, we will go out on the lawn. You better get your seats now."[134]

"The judge's station was on a slightly raised platform," Scopes later recalled. "Defense and prosecution tables were on the ground. There were a few rows of benches." The audience, he remembered, found room wherever they could. "Many persons were seated on the courthouse lawn and others on hoods of nearby cars or standing on the running boards."[135] De camp describes an extraordinary scene in which:

> Reporters and the spectators disposed themselves as best they could on the lawn, some on rough benches made of planks laid across saw horses, some on packing cases, some on the grass, sitting, squatting, and lying. Some Daytonians fetched chairs from their homes. Some sat in the automobiles parked along the street beyond the fence; some climbed to the roofs of the cars. Small boys climbed into the branches of the big tree that overhung the platform. The windows of the courthouse were crowded with people leaning out, propped on their elbows.[136]

Where before the courthouse audience had been limited to around five hundred spectators, moving the trial outdoors enabled over two thousand people to observe the proceedings. Suddenly confronted with an audience several times larger than he was accustomed to, the court's bailiff, Officer Kelso Rice, chastised the swelling and talkative audience with (what else?) a simian reference. "People, this is no circus," he warned. "There are no monkeys up here. This is a lawsuit; let us have order."[137]

A brief exchange followed in which Judge Raulston, having affirmed his belief in the Bible, agreed to remove a sign from the side of the courthouse that advised

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[134] De Camp, *The Great Monkey Trial*, p. 376.
[135] Scopes, *Center of the Storm*, pp. 164-165.
[136] De Camp, *The Great Monkey Trial*, p. 378.
[137] De Camp, *The Great Monkey Trial*, p. 378; *The World's Most Famous Court Trial,* p. 282.

Daytonians to "Read Your Bible."[138] As the sign was being removed, Malone turned toward Scopes. "Hell is going to pop now!" he told the otherwise clueless defendant.[139]

"The defense desires to call Mr. Bryan as a witness," Hays told the court.[140]

Scopes recalled that the platform on which both counsel were positioned erupted in commotion. "All of the lawyers leaped to their feet at once," he recalled. "The judge blanched and was at a loss for words. Everyone seemed to be talking at once, so that the court reporter couldn't possibly have got it all down." So unorthodox was the move that Raulston might have easily dismissed the call "had Bryan himself not been on his feet, *demanding* his right to testify."[141]

Though Darrow never questioned Bryan on common descent per se, the interrogation is nevertheless vital to any understanding of the fate of common descent in America. Darrow quizzed the Great Commoner all afternoon about the latter's conviction that the Bible should be read and understood literally. In so doing, Darrow did not attack Bryan's anti-evolution views, but rather the *logic* in which he grounded those views. Bryan was resolute in his conviction that the Bible should be read as literally true… save for a single point. He conceded that the days of creation, as described in Genesis, might not have been days of twenty-four hours. In so doing, he revealed a crack in the fundamentalist dike. Though his fundamentalist followers were dismayed at his concession, Bryan's interpretive, rather than literal, reading of the Bible

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[138] *The World's Most Famous Court Trial*, pp. 282-283.
[139] Scopes, *Center of the Storm*, p. 165.
[140] *The World's Most Famous Court Trial*, p. 284.
[141] Scopes, *Center of the Storm*, p. 166.

echoed the apologist's position. "It was the great shock that Darrow had been laboring for all afternoon."[142]

The episode not only remains the most famous exchange from an already famous trial, it was also one of the most heated. The Butler Act, and the trial it spawned, might have been largely symbolic, but it nevertheless stirred very real passions among its principal participants. Both men were "standing and glaring at each other"[143] when Darrow impugned Bryan's "fool ideas that no intelligent Christian on earth believes."[144] With that, Judge Raulston at last retook the reins and hurriedly adjourned court for the day.

Conviction

Interestingly, despite the trial's celebrated status, the verdict was something of an afterthought. Arguing that Scopes was being charged under an unjust law, the defense had allowed that Scopes was guilty of the crime as charged. "Your Honor," Darrow at one point acknowledged in the absence of the jury, "every single word that was said against this defendant, everything was true."[145] Ceding their client's guilt, the defense had sought to challenge the law. John Neal, the lone Tennessean representing the defense, implored Judge Raulston to consider the law's constitutionality. "May it please Your Honor," he told the judge, "it is the very essence of judicial functions to determine what the law is, and to determine what the law is necessarily requires the determination

[142] Scopes, *Center of the Storm*, p. 178.
[143] Scopes, *Center of the Storm*, p. 182.
[144] *The World's Most Famous Court Trial*, p. 304.
[145] *The World's Most Famous Court Trial,* p. 133.

of its constitutionality."[146] The court, however, was unwilling to engage in judicial review. In a statement that has since consistently proved otherwise in court cases concerning evolution, Judge Raulston informed the defense that "the courts are not concerned in questions of public policy or the *motive* that prompts the passage or enactment of any particular legislation."[147] Indeed, as the trial's end drew nearer, Darrow formally requested that the jury find his client guilty so that the defense might have the opportunity to argue the case before an appellate court.[148] As expected, the jury acquiesced and found Scopes guilty on July 21, 1925.

Though Scopes was convicted, history generally remembers that Bryan and the prosecution endured a crushing public relations defeat. "Let there be little doubt about that," one reporter observed, "Bryan was broken, if ever a man was broken. Darrow never spared him… to see him [Bryan] humbled and humiliated before the vast crowd which had come to adore him, was sheer tragedy, nothing less.'"[149]

Bryan showed no indication that he was a "broken man," however, and announced two days after the trial that he would continue to "protect my family from the family tree by which evolutionists connect themselves with the jungle."[150] In a statement he had prepared for court, but not been allowed to deliver, he further reiterated his anthropocentric objections to common descent. "It must be remembered," he wrote, "that the law under consideration in this case does not prohibit the teaching of evolution up to the line that separates man from the lower form of animal life."[151] Then, as if

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[146] *The World's Most Famous Court Trial,* p. 50.
[147] *The World's Most Famous Court Trial,* p. 101. My italics
[148] *The World's Most Famous Court Trial,* p. 306.
[149] Paul Y. Anderson, *St. Louis Labor*, July 21 1925. See also: De Camp, *The Great Monkey Trial*, p. 413.
[150] Allen, *Bryan and Darrow at Dayton*, p. 171.
[151] *The World's Greatest Court Trial*, p. 324.

anticipating future legal arguments against evolution, he presciently concluded that "the real attack of evolution, it will be seen, is not upon orthodox Christianity, or even upon Christianity, but upon religion – the most basic fact in man's existence and the most practical thing in life."[152] Less than a week after the trial ended, Bryan died, providing the trial its inevitable "coda."[153]

Postscript

Scopes's case made it to the Tennessee Supreme Court, where it encountered typical resistance. "To cheers from the gallery," one reporter wrote, prosecutors for the state urged the justices to resist efforts to allow "this animal dogma" in the public schools of the state.[154] The defense's goal to appeal the case to the United State Supreme Court was rendered impossible, however, when the Tennessee Supreme Court threw the case out on a technicality involving sentencing guidelines. In the court's brief decision, however, Chief Justice Green affirmed the law's constitutionality. He observed, moreover, that among the general public, evolution was generally conflated with common descent. "Evolution, like Prohibition, is a broad term," he observed, before adding, "In recent bickering, evolution has been understood to mean the theory which holds that man has developed from some pre-existing lower type. This is the *popular* significance of evolution."[155]

Like Judge Raulston before them, the Tennessee Supreme Court argued against the use of judicial review. "If the Legislature thinks that, by reason of popular prejudice,

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[152] *The World's Greatest Court Trial*, p. 329.
[153] Scopes, *Center of the Storm*, p. 197.
[154] "Darrow Declares Science as Real as Religion," *Chattanooga Times*, June 2 1926, p. 1.
[155] *Scopes v. State,* 152 Tenn. 424, 278 S.W. 57 (Tenn. 1925) My italics

the cause of education and the study of Science generally will be promoted by forbidding the teaching of evolution in the schools of the State, we can conceive of no ground to justify the court's interference," wrote Chief Justice Green.[156] Per the high court's request, the state elected not to retry Scopes. The world-famous monkey law remained on the books.

After the Scopes trial, several other states considered banning common descent. By the end of the 1920s, however, only two other states, Arkansas and Mississippi, passed anti-evolution laws. The Arkansas statute's language was almost identical to the language used in Tennessee's Butler Act, with a few telling exceptions. First, the Arkansas statute removed all mention of the Bible. Doing so, bill supporters hoped, would clarify the statute's meaning and undermine the types of questions about Biblical interpretation that the defense had seized upon at Dayton. The second telling change that Arkansas made to its statute paid heed to Judge Raulston's suggestion that Darwinists do humans the favor of substituting "the word *ascend* for *descend*."[157] The text of the legislation thus made it illegal to teach "the doctrine or theory that mankind *ascended* or descended from a lower order of animals."[158] In 1927, Arkansans were allowed to vote on the measure, the only time in American history that a ban on evolution was put to popular vote. The citizens of Arkansas voted in favor of the measure by over sixty-three per cent, thereby criminalizing any instruction about the theory of common descent.[159]

When Mississippi outlawed evolution in 1928, fundamentalists swelled with pride at their accomplishment. The Reverend John Roach Stanton, one of the nation's leading

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[156] *Scopes v. State,* 152 Tenn. 424, 278 S.W. 57 (Tenn. 1925).
[157] *The World's Most Famous Court Trial,* p. 203. My italics
[158] "Initiated Act No. 1," Arkansas Statutes 80-1267, 1268 (Arkansas 1928). My italics
[159] Randy Moore, *Evolution in the Courtroom: Reference Guide* (Santa Barbara: ABC-CLIO, 2002), p. 45.

critics of evolution, predicted that anti-evolution sentiment would consume the country. "This movement to expose the fakes and fancies of evolution is spreading all over the country," he assured his supporters. "We will be through in New York quicker than you realize."[160] Despite Stanton's optimism, however, Tennessee, Arkansas, and Mississippi were the only states to criminalize the teaching of evolution in the 1920s. In fact, decades would pass before any state again considered legislative action against evolution.

Despite legislative inactivity, the debate over common descent was far from settled. In subsequent decades, Darwinists continued to buttress their support for evolution with new evidence from an array of disciplines. The judiciary, meanwhile, established a precedent when it was again asked to comment on evolution, thereby forcing anti-evolutionists to rearticulate their objections to evolution in new ways.

[160] "Sees National Victory Against Evolution," *New York Times*, February 10, 1926, p. 13.

Chapter Two

The Tree of Life and its Roots

Creationism and the Origin-of-Life Debate

Introduction

Following the Scopes trial, decades passed before evolution was again debated in an American courtroom. When at last the issue reappeared, however, several important developments in science, education, and constitutional interpretation ensured that the theory of common descent would be received more favorably than it had been. In *Epperson vs. Arkansas* in 1968, for example, the United States Supreme Court invalidated Arkansas's prohibition on common descent on the grounds that it violated the Establishment Clause. In *Epperson*'s wake, anti-evolutionists reorganized under a new guise, one that reflected their position of disadvantage. Shedding their predecessors' reliance on the Bible, anti-evolutionists in the 1970s and 1980s began to advocate a more secular paradigm they called creation-science, or simply creationism. Creationists, moreover, did not ask that common descent be prohibited. They merely asked that when the theory *was* taught, creation-science also be taught.

The new historical conditions meant that the conversation about the Darwinian "tree of life" had also changed dramatically. Though genealogy-based anthropocentrism remained, its expression was more tempered than it had been in Dayton. During *McLean vs. Arkansas* in 1981, critics of evolution demonstrated that while they were still concerned with humans' genealogical connection to apes, they were also increasingly apt to look beyond the most proximate genealogical branches and instead debate the entire tree of life. The new conversation reflected new contested boundaries, and highlighted a new locus of concern: the origin of life. Doing so unwittingly signaled the first hesitant steps away from anthropocentrism and toward biocentrism. For whereas the previous

generations' area concern implicated only humans and other primates, their new concerns implicated the entire tree of life.

Rise of Darwinism

During the decades bracketing the dawn of the twentieth century, American evolutionists squabbled over the proper mechanism by which evolution unfolded. Julian Huxley famously labeled the era the "eclipse of Darwinism."[161] In the decades following Scopes's conviction, however, the Darwinian explanation for the evolution of life had emerged triumphant from the last faint penumbra. Biologists from disparate disciplines demonstrated that genetics, population dynamics, and systematics all supported Darwinian theory, yielding "the modern synthesis" (another well-worn phrase for which we may thank Julian Huxley).

As early as 1942, Theodosius Dobzhansky could reflect retrospectively on the powerful evolutionary synthesis. "A new and significant trend has become discernible in biology during the last decade," he wrote in the introduction to Ernst Mayr's *Systematics and the Origin of Species*. "During the last decade," Dobzhansky continued, "conclusions reached by many of the specialists have begun to converge toward a set of general principles applicable to the entire realm of living matter."[162] Mayr's work, together with Dobzhansky's own *Genetics and the Origin of Species*, George Gaylord Simpson's *Tempo and Mode in Evolution*, and G. Lebyard Stebbins's *Variation and Evolution in*

[161] For an authoritative account, see Peter Bowler, *The Eclipse of Darwinism: Anti-Darwinian Evolution Theories in the Decades around 1900* (Baltimore: Johns Hopkins University Press, 1983)
[162] Theodosius Dobzhansky, "Introduction," in Ernst Mayr, *Systematics and the Origin of Species: from the Viewpoint of a Zoologist* (New York: Dover Publication Inc., 1942), p. vii.

Plants, provided the foundation on which the modern evolutionary synthesis has since been constructed.[163]

"The evolutionary synthesis is unquestionably an event of first-rank importance in the history of biology," historian of science William Provine has observed.[164] The synthesis proved a major triumph not only for Darwinism but also its modus operandi, natural selection. It merits mention, however, that in addition to endorsing natural selection, the synthesis also rested upon its acceptance of common descent. What is more, while the modern synthesis contributed to Darwinism's increased acceptance within the scientific community, science itself was also assuming a new and important role in American society. Because science played a pivotal role in deciding the outcome of World War II, and because the United States found itself in the midst of the Cold War, the federal government began to place an increased emphasis on its diffusion. Post-war tensions with the Soviet Union were exacerbated in 1957, when the former ally and fellow superpower launched Sputnik, the first world's first artificial satellite, into orbit. In response to Sputnik, and in anticipation of the centennial anniversary of Darwin's *Origin of Species*, the National Science Foundation began funding a program called the Biological Sciences Curriculum Study (BSCS), meant to produce quality biology textbooks for public schools. Importantly, the BSCS proceeded on grounds that Darwinian evolution was the central organizing principle without which biology made no sense. "At the earliest meetings of the BSCS Steering Committee," BSCS-historian

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[163] Theodosious Dobzhansky, *Genetics and the Origin of Species* (New York: Columbia University Press, 1937); George Gaylord Simpson, *Tempo and Mode in Evolution* (New York: Columbia University Press, 1944); G. Ledyard Stebbins, *Variation and Evolution in Plants* (New York: Columbia University Press, 1950); Julian Huxley, *Evolution: the Modern Synthesis* (New York: Hafner Press, 1974).
[164] William B. Provine, "Epilogue," in Ernst Mayr and W.B. Provine (eds.), *The Evolutionary Synthesis: Perspectives on the Unification of Biology* (Cambridge: Harvard, 1980), p. 399

Arnold Grobman wrote, "it obviously was assumed by everyone present that evolution would be a major constituent of the BSCS course of study."[165]

Evidence suggests that America's cultural landscape was growing more hospitable toward Darwinism as well. A new generation was introduced to the Scopes trial, for example, when Jerome Lawrence and Robert Edwin Lee opened *Inherit the Wind* on Broadway in 1955. The play, based on the Scopes trial, ran for three years, making it, at the time, the longest-running drama on Broadway.[166] It was later made into a popular film starring Spencer Tracy, Frederic March, and Gene Kelly. Though the playwrights acknowledged that the Scopes trial was "clearly the genesis for this play" and that "some of the characters of the play are related to the colorful figures in that battle of giants," Lawrence and Lee took such liberties with the facts that they did not use the participants' real names.[167] Darrow thus became "Drummond," and Bryan became "Brady." The slight changes did little to distance *Inherit the Wind* from the American public's memory of the Scopes trial, however. In Larson's opinion, the film "all but replaced the actual trial in the nation's memory."[168]

Inherit the Wind unapologetically favored the Darrow character and the defense. Following the famous questioning on the stand, the Bryan character is reduced to a whimpering buffoon, while the Darrow character stands humbly triumphant, a champion for the freedom of thought. *Inherit the Wind*'s attitude toward the Scopes trial was important for several reasons. The play, and the film, afforded the idea of evolution a far more sympathetic reception than the theory had actually enjoyed in 1925. The change in

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[165] Arnold Grobman, "Science Curriculum Study in America," *The Changing Classroom: the Role of the Biological Sciences Curriculum Study* (Garden City: Doubleday, 1969), p. 204.
[166] Larson, *Summer for the Gods*, p. 243.
[167] Jerome Lawrence and Robert Edwin Lee, *Inherit the Wind* (New York: Bantam Books, 1955)
[168] Larson, *Summer for the Gods*, p. 241.

attitude was an important one, especially because *Inherit the Wind* became the de facto cultural history of the Scopes trial. Joseph Wood Krutch, who served as *The Nation*'s correspondent in Dayton that "most people who have any notions about the trial get them from the play, *Inherit the Wind*, or from the movie."[169]

Back in Tennessee, meanwhile, the Butler Act, under which John Thomas Scopes had been convicted, remained on the books. Even so, in forty years, Scopes had been the only person ever formally accused of violating the crime. That changed in 1967, however, when Jacksonboro High School's administrators dismissed twenty-four-year-old Gary Lindle Scott from his job in Campbell County, Tennessee. They accused Scott of, among other things, violating the Butler Act. The teacher protested his innocence. "I taught evolution within the limits of the state law," he insisted. "I avoided talking about the descent of man, talking only about other organisms."[170] Following a public outcry, however, the school rehired Scott. The Tennessee legislature repealed the Butler Act on May 17, 1967, a gesture indicating a seismic shift in opinion.

America's reception to Darwinian evolution and its constitutive component, common descent, had therefore warmed considerably in a relatively short amount of time. By 1973, Dobzhansky defiantly informed critics of Darwinism that "nothing in biology makes sense except in the light of evolution."[171]

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[169] Joseph Wood Krutch, 'The Monkey Trial,' *Commentary* (May 1967) p. 83. See also: Larson, *Summer for the Gods*, p. 244.
[170] "'Monkey Law' Ousts Tennessee Teacher," *New York Times*, April 15, 1967, p. 1.
[171] Theodosious Dobzhansky, "Nothing in Biology Makes Sense Except in the Light of Evolution," *American Biology Teacher* 35 (1973), pp. 125-129.

Epperson vs. Arkansas

The state of Arkansas, however, begged to differ. Like Tennessee, Arkansas had also passed a law in the 1920s, prohibiting public instructors from teaching "that mankind ascended or descended from a lower order of animals." Unlike Tennessee, however, which repealed its anti-evolution statute when it appeared the state might again be forced to defend the Butler Act in court, Arkansas fought to defend the constitutionality of its statute. The case's origins began in 1965, when one young teacher, Susan Epperson, acknowledged an inconsistency in the state's educational standards and challenged her employer, the state of Arkansas, to reconcile its prohibition of common descent with the state-sponsored textbooks' endorsement of the theory. The Arkansas Education Association (AEA), a 17,000-member affiliate of the National Education Association (NEA), provided legal assistance.[172]

The challenge sent evolution back to court. Although America's scientific, legal, and cultural environments had all undergone radical change since the 1920s, Epperson nevertheless endured much of the same derision that confronted Scopes. A letter addressed to Epperson, but which referred to her as "The Monkey Teacher," informed her that "there is a striking resemblance between you and a monkey. I would advise you to go ahead and teach it. You are living proof of it." Another letter, from one Charlotte Blair, told Epperson that "even the Jew would object to being descended from a monkey, as it sure would not fit into their religious views. Not knowing you," Blair continued, "it could be true, in your case, but why brag about it, you are proving it."[173]

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[172] Moore, *Evolution in the Courtroom*, p. 46.
[173] "Arkansas 'Monkey Battle," *Oakland Tribune*, March 31, 1966, p. A21. See also: Moore, *Evolution in the Courtroom*, p. 49.

Bruce Bennett, the attorney general of Arkansas, likewise demonstrated a peculiar, yet familiar, interpretation of common descent. Bennett complained to Murray O. Reed, the forthcoming trial's judge, that Epperson "was the only person since the law was approved to 'clamor' in favor of teaching that man evolved from monkeys, apes, sharks, porpoises, seaweed, or any other form of animal or vegetable."[174]

Reed heard the case on April 1, 1966. Although the press anticipated a Scopes-like sensation, Epperson's case differed from the Scopes trial in a number of ways. Determined to avoid the circus atmosphere that pervaded the proceedings at Dayton, Reed tripled the usual number of bailiffs present and banned all media coverage from the courtroom. Furthermore, whereas the Scopes trial had spanned two weeks, the Epperson case lasted only two hours. However truncated, the case nevertheless showcased Attorney General Bennett's concern for humans' ancestry. "Do you know the theory that man evolved from algae?" Bennett asked Ms. Epperson. She answered that she did not. "From seaweed?" he pressed her again. "Seaweed? No," a confused Epperson responded.[175]

Less than two months later, on May 26, 1966, Reed ruled in favor of Epperson. In so doing, he argued that Arkansas's anti-evolution statute was unconstitutional because it "violates the constitutional provisions of freedom of speech, thought, and expression." In his brief decision, Reed also noted that the origin of humans was beyond the purview of the court. "The engrossing questions relating to the origins of man," he wrote, "cannot be answered by the enactment of laws or by the decisions of courts."[176]

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[174] C. Kazan, "Trial of '66 Has its Opening in Little Rock Today," *Washington Post*, April 1, 1966. See also: Moore, *Evolution in the Courtroom,* p. 50.
[175] Moore, *Evolution in the Courtroom*, p. 52-54.
[176] "Ban on Teaching of Evolution Overturned by Arkansas Judge," *New York Times*, May 28, 1966, p. 22.

For its part, the national media, perhaps anticipating a replay of the Scopes trial, could hardly suppress its disappointment that the proceedings had yielded no drama. *The Oakland Tribune* complained in its headlines that the "evolution trial fails to impress." *The Washington Post* dismissed the *Epperson* case as "only a shadow" of the Scopes trial, while the *Los Angeles Times* complained that the "'Monkey Trial' rerun [was] stripped of drama."[177]

Undeterred, Bennett immediately announced his intention to appeal the decision to the State Supreme Court. The Arkansas Supreme Court, in turn, reversed the lower court's decision. In its two-sentence opinion, the higher court ruled that the anti-evolution statute "is a valid exercise of the state's power to specify the curriculum in its public schools."[178] When Epperson appealed the decision, she found support from the only organization with experience defending evolution in the courtroom. The ACLU, which had no formal base in Arkansas, argued on behalf of Epperson when her appeal reached the United States Supreme Court.

The case was argued before the high court on October 16, 1967. "It is possible that the statute is presently more of a curiosity than a vital fact of life in these States," Justice Abe Fortas observed in the Court's opinion. "Nevertheless," he continued, "the present case was brought, the appeal as of right is properly here, and it is our duty to decide the issues presented."[179]

The Supreme Court ruled unanimously that Arkansas's prohibition of evolution violated the constitution. Unlike Judge Reed, however, who held that the law violated the right to freedom of speech, the United States Supreme Court held that the law

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[177] Moore, *Evolution in the Courtroom*, p. 54.
[178] 242 Ark. 922, 416 S. W. 2d 322.
[179] *Epperson v. Arkansas, 393 U.S. 97 (1968).*

violated the Establishment Clause of the First Amendment, which promised that "Congress shall make no law respecting an establishment of religion." Arkansas's law, the Supreme Court ruled, promoted a specific religious doctrine. "The law must be stricken because of its conflict with the constitutional prohibition of state laws respecting an establishment of religion or prohibiting the free exercise thereof," Justice Fortas wrote for the majority. "The overriding fact," he continued, "is that Arkansas's law selects from the body of knowledge a particular segment which it proscribes for the sole reason that it is deemed to conflict with a particular religious doctrine."[180]

Two years later, on December 21, 1970, the nation's last remaining anti-evolution law was likewise ruled unconstitutional. Citing the *Epperson* decision, the Mississippi Supreme Court invalidated its state law that forbade instructors from teaching "that mankind ascended or descended from a lower order of animals." "It is clear to us," Justice William Inzer observed in the court's opinion, "that the Supreme Court of the United States has for all practical purposes already held that our anti-evolution statutes are unconstitutional."[181]

Less than sixty years after the famed Scopes trial, the theory of common descent enjoyed a relatively new position. Though American biologists largely accepted the theory in 1925, the judiciary failed to protect common descent from religiously motivated legislation. By the 1980s, however, common descent not only enjoyed widespread support from the nation's biologists, but the judiciary's interpretation of the Establishment Clause cleared the path for common descent to be taught in public schools. Together, the scientific and legal endorsements of common descent proved a powerful

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[180] *Epperson v. Arkansas, 393 U.S. 97 (1968).*
[181] "Mississippi Voids Evolution Curb," *New York Times*, December 22, 1970, p. 13.

combination. As would soon become clear, however, portions of society nevertheless continued to ardently protest common descent.

Act 590

In 1981, thirteen years after their defeat in the Epperson case, critics of evolution galvanized and reorganized under a decidedly different guise. Arkansas, which had been one of only three states in the nation's history to criminalize the teaching of evolution, passed yet another law, Act 590, which again challenged the theory of common descent. In some ways, the resistance to common descent echoed previous episodes. In other ways, however, the resistance had changed dramatically.

Before addressing the claims made in Act 590, let us first consider the manner in which those claims were made. After all, in order to reinsert the doctrine that each species belongs to a separate genealogy back into public schools, proponents of that view realized that they would have to circumvent the precedent established in the *Epperson* case. In order to do so, they seized upon an observation made by Justice Fortas in that case's majority opinion:

> Arkansas' law cannot be defended as an act of religious neutrality. Arkansas did not seek to excise from the curricula of its schools and universities all discussion of the origin of man. The law's effort was confined to an attempt to blot out a particular theory because of its supposed conflict with the *Biblical account, literally read*. Plainly, the law is contrary to the mandate of the First, and in violation of the Fourteenth, Amendment to the Constitution.[182]

The American judiciary would therefore no longer recognize Biblical authority as such. The grounds on which common descent had once been successfully banned were

[182] *Epperson v. Arkansas, 393 U.S. 97 (1968).* [My italics]

herewith ruled invalid. In order to again protest common descent, therefore, anthropocentrists changed their tactics.

The court's decision yielded three major changes among critics of Darwinian evolution. First, because they could no longer successfully argue their position in court on Biblical grounds, critics of common descent dropped their use of Biblical rhetoric and imagery. Explicit reference to Genesis, they realized, would immediately render unconstitutional any effort to reinstate the doctrine of distinct genealogies. This legal atmosphere was thus decidedly different than the one in which the Scopes trial had been argued back in 1925, when critics of common descent found a much more sympathetic judiciary in Dayton. As it turned out, however, critics in the 1980s were perfectly willing to combat common descent without recourse to the Bible. In a dramatic departure from Tennessee's Butler Act, Act 590 even stipulated that teachers' lesson plans "must not include any religious instruction or references to religious writings."[183] Thus, while critics of common descent may have been motivated by fundamentalist Christian beliefs, they would not, for legal purposes, have readily described themselves as fundamentalist Christians.

The second major transformation critics of common descent therefore underwent concerned the adoption of a new public façade meant to replace the banished Biblical one. In order to gain access to public science classrooms, common descent's critics now presented themselves not as theologians, but as scientists. Indeed, they called themselves "creationists," practitioners of "creation-science." Their doctrines publicly eschewed religious references, and their literature employed increasingly scientistic rhetoric. Then, professing earnest scientific acumen, they asserted their belief that supernatural

[183] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.

explanations should be considered in the practice of science. Just as there was empirical evidence for common descent, they argued, so too was there empirical evidence that each species maintained its own distinct genealogy. Dr. Henry Morris, a former dean of the Civil Engineering Department at Virginia Tech and nationally recognized leader of the creationist movement, even wrote a creationist "science textbook." The purpose of the book, he informed readers, was "to treat all of the more pertinent aspects of the subject of origins and to do this solely on a scientific basis, with no references to the Bible or to religious doctrine."[184] The adoption of a scientific façade not only bespoke the profound power and legitimacy that science had achieved in American society, it also provided common descent's critics with the tactics it would employ to confront the theory anew.

The third major change that critics underwent concerned the content of their demands. After all, in 1925, the depth of their support allowed critics to simply prohibit the teaching of common descent. By 1981, critics realized the judiciary would not simply expel the theory from the classroom again. The tides having already turned decidedly against their favor, critics of common descent offered supporters of the theory a compromise. Tailoring their claims to the precedent set forth in the Epperson case, creationists no longer sought to expel the theory of common descent from the classroom. They now sought merely to have the theory of distinct genealogies afforded equal time. "Creation-science," they argued, was a legitimate *scientific* research paradigm and, as such, was due the same privileges afforded its competing research paradigm, "evolution-science." The statute held that both theories provided explanations from empirical observation and that both theories were therefore equally valid explanations for

[184] Henry Morris, *Scientific Creationism, Public School Edition* (San Diego: Creation-Life Publishers, 1974), p. iv.

biological phenomena. Thus, unlike the Butler Act, Act 590 did not prohibit common descent from public classrooms. Instead, it mandated that whenever "evolution-science" was taught in public schools, so too must reference be made to another theory it called "creation-science."

Defining the Tree of Life

Act 590 owed its origins to Wendell Bird, a Yale law student who had drafted a model bill intended to provide evolution and creationism equal time in public schools. Using Bird's bill as his model, Paul Ellwanger, a respiratory therapist and founder of the South Carolina-based Citizens for Fairness in Education, drafted what would eventually become Act 590. The proposed bill was circulated among politically active church congregations across the southern states, and eventually found its way to James Holsted, a state senator and self-described "born-again fundamentalist." Holsted introduced the bill in the Arkansas legislature despite no knowledge of who wrote it.[185]

The bill provided explicit definitions of both "creation-science" and "evolution-science." It detailed six essential points on which "creation-science" and "evolution-science" conflicted:

> (a) "Creation-science" means the scientific evidences for creation and inferences from those scientific evidences. Creation-science includes the scientific evidences and related inferences that indicate: (1) sudden creation of the universe, energy, and life from nothing; (2) the insufficiency of mutation and natural selection in bringing about development of all living kinds from a single organism; (3) changes only within fixed limits of originally created kinds of plants and animals; (4) separate ancestry for man and apes; (5) explanation of the earth's geology by catastrophism, including the occurrence of a worldwide flood; and (6) a relatively recent inception of the earth and living kinds.
>
> (b) "Evolution-science" means the scientific evidences for evolution and inferences from those scientific evidences. Evolution-science includes the scientific evidences and related inferences that indicate: (1) emergence by

[185] Moore, *Evolution in the Courtroom*, p. 79.

> naturalistic processes of the universe from disordered matter and emergence of life from nonlife; (2) the sufficiency of mutation and natural selection in bringing about development of present living kinds from simple earlier kinds; (3) emergence by mutation and natural selection of present living kinds from simple earlier kinds; (4) emergence of man from a common ancestor with apes; (5) explanation of the earth's geology and the evolutionary sequence by uniformitarianism; and (6) an inception several billion years ago of the earth and somewhat later of life.[186]

Arkansas Governor Frank White signed Act 590 into law in March, 1981. The new governor, who owed his recent surprise victory over the incumbent Bill Clinton in part to fervent evangelical support, signed the bill into law despite his confession that he knew little about evolution and creationism. He supported the bill, he announced, because "I'm a Christian and I believe in the Bible."[187] The ACLU soon brought suit against the state of Arkansas on behalf of twenty-three individuals and organizations, including Reverend Bill McLean, who leant his name to the proceedings. Many newspapers proclaimed *McLean vs. Arkansas* "a new 'Scopes' trial," though it was clear the latter case would lack the sensationalistic qualities of the former.[188]

Act 590's respective definitions of "evolution-science" and "creation-science" invite a number of serious questions, but let us begin with the most obviously relevant issue to this thesis, addressed in the fourth part of each definition. According to the law, creationists insisted on a "separate ancestry for man and apes," while evolutionists believed in "the emergence of man from a common ancestor with apes."[189]

In many ways, this resistance to common descent both resembled and differed from the resistance at the Scopes trial. The objections to common descent remained startlingly anthropocentric. Simian primates, for example, retained their symbolic

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[186] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.
[187] Rone Tempest, "'Creation Science' Law Under Legal Fire," *Los Angeles Times*, December 7, 1981, p. B5.
[188] Lee Strobel, "Evolution Law Creates a New Scopes Trial," *Chicago Tribune*, December 6, 1981, p. B25.
[189] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.

notoriety. Among evolution's seemingly infinite variety of genealogical implications, the authors of Act 590 identified humans' position relative to other primates as an essential tenet. Never mind that common descent may have likewise rendered grizzly bears and bumble bees distant cousins; it only proved offensive when extended to humans.

One thing that had changed, however, was the way that the simian-human relationship was being interpreted. As evidenced by transcripts of the Scopes trial, common descent had long elicited a curious response from critics. In 1925, critics had consistently interpreted the theory to mean that monkeys and apes were somehow the ancestors of humans, while Darwinists insisted that the theory actually implied that monkeys and humans *shared* an ancestor. Over fifty years later, in Act 590, critics abided by the definition set forth by Darwinists and *still* contested common descent. It was, to paraphrase William Jennings Bryan, just as unsettling to have monkeys for cousins as it was to have them for grandparents.

Prior to the trial, creationists had offered what they considered empirical evidence against common descent. "The fact that the DNA molecule is basic in the reproductive mechanisms for all kinds of organisms is assumed to suggest common ancestry," Morris wrote. "The infinitely more significant fact, that each specific kind of organism has its *own* DNA molecular structure, different from that of every other kind, is ignored."[190] During the trial, however, creationists offered very little evidence against shared ancestries. Despite Act 590 having set forth a bold contradiction between the two paradigms, there was comparatively little discussion at the trial about the genealogical relationship among extant species. To be sure, it was still there. One witness for the

[190] Morris, *Scientific Creationism, Public School Edition*, p. 73. [italics in original]

defense, astronomer Chandra Wickramasinghe, simply could not accept that humans had emerged from a simian ancestor:

> Although apes and man admittedly have much in common, biochemically, anatomically, and physiologically, they are at the same time a world apart. We cannot accept that the genes for producing great works of art or literature or music, or developing skills in higher mathematics emerged from chance mutations of monkey genes long ahead of their having any conceivable relevance for survival in a Darwinian sense.[191]

Wickramasinghe, however, was one of only a few critics to explicitly reject the concept that humans shared a genealogy with other species. Anthropocentric resistance was simply not as virulent in 1981 as it was in 1925. Moreover, despite the fact that Act 590 publicly advocated a theory that allowed "changes only within fixed limits of originally created kinds of plants and animals," critics were now more willing to concede certain things to supporters of common descent.[192]

For example, critics were now willing to allow that a process which they called "microevolution" *did* operate in nature. Microevolution allowed the physical constitution of a species to change, they argued, but only within predetermined boundaries. To be fair, Bryan had allowed as much as early as the 1920s. He dismissed claims that Luther Burbank, an experimental evolutionist and proposed witness for Scopes's defense, had produced new species via artificial selection. Bryan insisted that Burbank had "merely produced varieties within a species."[193] But whereas Bryan easily brushed such questions aside, creationists made the claim central to their paradigm. Morris, for example, had allowed that morphological similarity sometimes "may actually indicate common

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[191] "A Prepared Statement by Defense Witness Dr. Chandra Wickramasinghe," *McLean v. Arkansas Documentation Project*. All references to the *McLean v. Arkansas Documentation Project* were last accessed on May 6, 2008 and refer to http://www.antievolution.org/projects/mclean/new_site/index.htm.
[192] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.
[193] Larson, *Summer for the Gods*, p. 135.

ancestry. This is certainly true at the level of varieties," he wrote, "and possibly also at the species level and occasionally at the level of higher categories."[194]

Morris thus allowed that perhaps not all extant species were created as such in the remote past. This tempered resistance to shared genealogies indicates, perhaps, that the theory's acceptance was diffusing, slowly, through society. Another of common descent's implications, however, was debated at much greater length.

The Origin of Life

One might initially, and reasonably, object that debate over life's origin is a distinctly different debate than the one about shared ancestries among species. In order to understand how the debate over origins implicates common descent, however, one must first recognize that when biologists endorsed common descent, they endorsed a new conception of nature. According to Loren Eiseley, the steady adoption of common descent initiated "the transformation of a static conception of nature into a dynamic one."[195] According to Darwin, species emerged by process rather than decree.

This fact allowed both critics and proponents of common descent to consider a new perspective in biological thought, one that did not even exist in the creationist paradigm. Inevitably, anyone who traced species' converging genealogies back across "the lost history of life" confronted several profound questions.[196] Just how many species participated in each genealogy? Did a multitude of genealogies exist in nature, or was it possible that all living things belonged to one global genealogy? One universal

[194] Henry Morris, *Scientific Creationism, Public School Edition*, p. 71.
[195] Eiseley, *Darwin's Century*, p. 6.
[196] Eiseley, *Darwin's Century*, p. 6.

genealogy? The answers to each question depend on how life initially emerged, thereby allowing genealogies to unfold in the first place.

Perhaps not surprisingly, the historical record reveals significant disagreement. To begin, Act 590 codified a definition of evolution quite different from one that evolutionists themselves might have drafted. In the statute, the first part of section 4(b) defined evolution as, in part, the study of "life from nonlife."[197] The statute presumed, therefore, that "evolution-science" not only connected extant and extinct organisms by genealogical bonds, but that it also offered a mechanism explaining the initial appearance of life on this planet. More than one scientist testified during the trial, however, that this claim was inaccurate.

Darwin himself had generally avoided any question about the origin of life in *On the Origin of Species*. However, he did twice make tangential reference to the unknown cause of life when discussing the cause of variation. The first instance occurred during his examination of the eye, that exemplar organ of extreme perfection. "How a nerve comes to be sensitive to light," he mused, "hardly concerns us more than how life itself originated." He made a similar statement when considering how variation gave rise to intelligence. "I may here premise," he wrote, "that I have nothing to do with the origin of the mental powers, any more than I have with that of life itself." In the book's conclusion, however, he made a much more explicit reference to his theory's inability to explain the origin of life. "It is no valid objection that science as yet throws no light on the far higher problem of the essence or origin of life," he wrote. "Who can explain what is the essence of the attraction of gravity?"[198]

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[197] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.
[198] Darwin, *The Origin of Species*, sixth edition, p. 191, 262, 519.

In the absence of a consensus, those who believed in common descent offered a number of explanations for the origin of life. One explanation insisted that God was the necessary force that first distinguished life from nonlife. Another insisted that natural processes allowed life to first distinguish itself from nonlife. Interestingly, Darwin advocated both positions, one publicly and the other privately. Consider, for example, that the first edition of the *Origin* concluded with the following sentence:

> There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved.[199]

By the time the last edition of the *Origin* was published in 1872, Darwin had made one rather conspicuous addition to his book's concluding sentence:

> There is grandeur in this view of life, with its several powers, having been originally breathed *by the Creator* into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved.[200]

Thus, far from being the nihilistic or atheistic theory its detractors would sometimes label it, Darwin's theory, as he articulated it, was entirely consistent with a deistic God.

In his private correspondence, however, Darwin wrote differently about the origin of life. In a now famous 1871 letter to Joseph Hooker, Darwin mused that life might have arisen naturally by chemical means in the riparian shallows of primordial Earth:

> It is often said that all the conditions for the first production of a living organism are now present, which could ever have been present. But if (and oh! what a big if!) we could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity, &c., present, that a proteine [sic] compound was chemically formed ready to undergo still more complex changes, at the present day such matter would be instantly devoured or absorbed, which would not have been the case before living creatures were formed.

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[199] Darwin, *On the Origin of Species: A Facsimile of the First Edition*, p. 490.
[200] Darwin, *The Origin of Species*, sixth edition, p. 528-529. [My italics]

In the very same letter, however, he cautioned that "it is mere rubbish thinking at present of the origin of life; one might as well think of the origin of matter."[201]

Across the Atlantic and several decades later, the Scopes trial likewise exhibited competing explanations about the origin of life that mirrored the contradictory impulses Darwin had felt. For example, lead prosecutor William Jennings Bryan seized upon scientists' inconclusive opinions on biological origins:

> Did he tell you where life began? Did he tell that back of all these that there was a God? Not a word about it. Did he tell you how life began? Not a word and not one of them can tell you how life began.[202]

Bryan insisted that the disconnect between the biotic and abiotic worlds was best explained by a God, specifically a Christian God, who created each species distinct, and "who stands back of everything and whose promise we have that we shall live with Him forever bye and bye."[203]

Harvard zoologist Maynard Metcalf, meanwhile, proffered a different hypothesis for the origin of life. Though his testimony had already been ruled inadmissible, he was allowed to be questioned in court, with the jury absent, on the grounds that his testimony might be ruled admissible in an appellate court. While on the stand, Metcalf mused (as Darwin had done in private) that all life's necessary ingredients were probably present in the riparian shallows:

> I think probably that animal life and plant life both began at the border line between the water and land where conditions were more complex – a little more likely to be productive of such a remarkable substance as a living substance but for long periods or over long periods in the earth's history there probably was no such thing as land life, either plant or animal, but all living things were marine.[204]

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[201] "Charles Darwin's letter to Joseph Hooker, 1871," *The Life and Letters of Charles Darwin, Including an Autobiographical Chapter*, p. 18.
[202] *The World's Most Famous Court Trial,* p. 177
[203] *The World's Most Famous Court Trial,* p. 178
[204] *The World's Most Famous Court Trial,* p. 141

Despite the antipodal positions assumed by Bryan and Metcalf, it would be wrong to assume that their positions were the only ones available. In actuality, there existed a myriad of opinions on life's origin that graded into one another seamlessly across a spectrum. Tennessee Supreme Court Justice Alexander Chambliss, for example, had found a compromise between the two positions. He reasoned that accepting the theory of common descent also entailed adopting one of two possible explanations for the initial origin of life. The first explanation, which he labeled *theistic*, presumed that God had long ago created the initial life from which all other forms then evolved. The second explanation, which he called *materialistic*, "denies that God created man, that He was the First Cause, and seeks in shadowy uncertainties for the origins of life."[205] In Chambliss's interpretation, the Butler Act only criminalized the latter theory. He asserted, moreover, that a belief in evolution did not as a rule preclude a belief in God. A liberal interpretation of creation could accord perfectly well with the theory of common descent. Such an interpretation, he wrote, "maintains, consistently with the Bible story, that 'the Lord God formed man from the dust of the earth." The judge invoked the names of a dozen intellectuals who "do not deny the story of the Divine creation of man as taught in the Bible, evolutionists though they be."[206]

The issue had hardly been resolved by 1981, though it had changed in important ways. Critics, responding to constitutional interpretation, had recanted their insistence that the Christian God best explained the initial appearance of life. They now argued more broadly that life owed its initial appearance to a supernatural creator, one who need bear no resemblance to the Christian God. This change constituted a major

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[205] *Scopes v. State,* 152 Tenn. 424, 278 S.W. 57 (Tenn. 1925).
[206] *Scopes v. State,* 152 Tenn. 424, 278 S.W. 57 (Tenn. 1925).

transformation in the legal conversation about the origin of life. No longer advanced as an explanation for the source of life, the Christian God was replaced by the more generic concept of supernatural intervention.

This may explain why creationists presumed certain things about Darwinian evolution. Act 590 claimed that common descent assumed "the emergence of life from non life… by naturalistic processes."[207] Chandra Wickramasinghe certainly conflated Darwinism with a natural explanation for life's origin:

> I can hardly remember my first encounter with Darwin's Theory of Evolution, but it was surely taught in a classroom context at a very early age, long before I was in any position to assess the facts. It was presented, at least by implication, to be a proven unshakable fact. I was asked to believe that lifeless inorganic matter sprang into life by a process of random shuffling of molecules at some distant time in the past on our planet.[208]

The assumption was further advanced at trial by Norman Geisler, theologian and witness for the defense, when he conflated common descent with the emergence of life by chemical means:

> Well, as I understand macroevolution, it is the belief that all living forms are the result of a process of development from previous animal life, and that this (was) ultimately derivable from nonliving things. So that you move from a process from nonliving things to living things through the whole phylogenetic tree up to all the existing families, and genera and species that we have today.[209]

Indeed, several scientists revealed their personal beliefs that the initial appearance of life could best be explained by natural causes. Harold Morowitz, the Yale University biophysicist tapped to testify in the *McLean* case when Carl Sagan proved unavailable, acknowledged his personal belief that life had emerged according to natural processes. "I believe that the origin of life can be explained in terms of the laws of atomic

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[207] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.
[208] "A Prepared Statement by Defense Witness Dr. Chandra Wickramasinghe," *McLean v. Arkansas Documentation Project.*
[209] "Transcript of deposition of Norman Geisler," taken on November 14, 1981 by Anthony Siano, Plaintiff attorney, *McLean v. Arkansas Documentation Project,* p. 77.

interactions," he testified.[210] Biologist Francisco Ayala likewise revealed his personal belief "that life arose from nonlife through naturalistic processes."[211]

These witnesses constituted a minority among scientists at the trial, though. In general, scientists argued that evolution did not attempt to explain the origin of life. For example, despite Ayala's personal belief that life emerged by "naturalistic processes," he conceded that "evolutionary theory… presupposes the existence of life" and that it posits nothing about life's initial appearance.[212] Similarly, in his deposition before the trial, the renowned Harvard biologist, Stephen Jay Gould, was consistently asked to provide comment on life's origin. Even when merely discussing his curriculum vitae with state Attorney General Steve Clark, he hastened to point out that common descent provided no explanation for the initial origin of life.

> Q (Clark): In undergraduate school at Antioch, what courses on theories of origins would you have taken?
> A (Gould): Theories of origins is a bad term, because we don't really deal with origins in the study of evolution.[213]

Later in the deposition, when again pressed about the issue of origins, Gould reiterated his position that evolution is a theory that presumes the existence of life.

> First of all, let me say that I have no professional opinion on the question; the origin of life is not what evolution deals with. So I am not going to be able to go very deeply into technical questions.[214]

During the trial, other witnesses were also asked to comment on evolution's implications for the origin of life. William Mayer, professor of biology at the University

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[210] "Dr. Harold Morowitz testimony," *McLean v. Arkansas Documentation Project,* p. 590.
[211] Norman L. Geisler, "Record of Plaintiff's Science and Education Testimony," *The Creator in the Courtroom: Scopes II* (Grand Rapids: Baker Books, 1982). Available via *McLean v. Arkansas Documentation Project.*
[212] Norman L. Geisler, "Record of Plaintiff's Science and Education Testimony," *McLean v. Arkansas Documentation Project*.
[213] "Transcript of deposition of Stephen Jay Gould," taken on November 27, 1981 by David L. Williams. *McLean v. Arkansas Documentation Project,* p. 24.
[214] "Transcript of deposition of Stephen Jay Gould," taken on November 27, 1981 by David L. Williams. *McLean v. Arkansas Documentation Project, p.* 56.

of Colorado and Director of the BSCS in Boulder, Colorado, testified that "evolution does not properly include the actual study of the origin of life."[215] Philosopher Michael Ruse likewise denied that the theory of evolution explained life's initial appearance:

> In fact, evolutionary theory takes, as it were, like Mrs. Beeton's Cookbook; it takes the organism or the initial organisms as given and then starts from there. For example, *The Origin of Species* is very careful, it never mentions about where life comes from. And I think this has been a tradition of evolutionists. I mean, obviously, evolutionists are going to be interested in the topic, and today certainly textbooks will probably mention it. But it's not part of the evolutionary theory proper.[216]

Thus, though scientists accepted common descent almost unanimously, they disagreed on what had provided the initial impulse from which an infinite variety of living things had since sprouted.

It merits tangential reference, perhaps, that many scientists accepted both common descent *and* a supernatural creator. Geisler testified, for example, that many scientists were, like Judge Chambliss in 1925, "theistic evolutionists," and that those scientists acknowledged common descent as fact but still believed in a God who had originally initiated the process. According to Geisler, theistic evolutionists believed that "there is (supernatural) intervention at the very beginning… of the process," but that evolution thereafter unfolds according to natural laws "in the whole middle of the process."[217] Judge Overton also recognized the position in his decision. "The idea that belief in a creator and acceptance of scientific theory of evolution are mutually exclusive is a false premise and offensive to the religious views of many," he wrote.[218]

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[215] Norman L. Geisler, "Record of Plaintiff's Science and Education Testimony," *McLean v. Arkansas Documentation Project.*
[216] "Dr. Stephen Ruse testimony," *McLean v. Arkansas Documentation Project,* p. 275.
[217] "Transcript of deposition of Norman Geisler," *McLean v. Arkansas Documentation Project*, p. 79.
[218] "*McLean v. Arkansas Board of Education* Decision," U.S. District Court Judge William R. Overton, January 5, 1982. *McLean v. Arkansas Bd. of Ed.*, 529 F.Supp. 1255, 1258-1264 (ED Ark. 1982).

Panspermia Hypothesis

The last major challenge advanced against common descent at the trial was also among the most curious. The defense summoned the astronomer Chandra Wickramasinghe because he was a scientist of some renown who publicly disagreed with the Darwinian explanation for life. Though called to assist the defense, his testimony ultimately undermined their arguments.

"The Court is at a loss to understand why Dr. Wickramasinghe was called in behalf of the defendants," Judge Overton wrote.[219] According to the judge, the legitimacy of Act 590 rested upon the supposition that there existed only two explanations for how life initially distinguished itself from nonlife: the respective explanations advanced by "creation-science" and "evolution-science." Because one's choices were therefore bifurcated, any argument against evolution-science would inevitably result in a positive argument for all the tenets of creation-science. Thus, Overton argued, when Wickramasinghe advanced a *third* interpretation of the planet's biota, distinct from the arguments of both creation-science and evolution-science, he actually undermined creationists' arguments. Wickramasinghe revealed in his testimony that he subscribed to neither the theory that life emerged naturally on Earth nor the theory that it had been sparked here by God. "Unfortunately for the defense," Judge Overton remarked, "he demonstrated that the simplistic approach of the two model analysis of the origins of life is false."[220]

Wickramasinghe instead promoted an alternate theory, developed in conjunction with his colleague Sir Fred Hoyle, which he called the *panspermia* theory. According to

[219] "*McLean v. Arkansas Board of Education* Decision," U.S. District Court Judge William R. Overton.
[220] "*McLean v. Arkansas Board of Education* Decision," U.S. District Court Judge William R. Overton.

their theory, life first appeared on this planet neither by divine decree nor by natural emergence, but rather in a cometary shower of biotic flakes from outer space. "Terrestrial life had its origins in the gas and dust clouds of space, which later became incorporated in and amplified within comets," he argued. Only when passing comets delivered to Earth these complex chemical riches, including "genetic material and perhaps organisms," did life develop. "Life was derived from and continues to be driven by sources outside the Earth," Wickramasinghe asserted, "in direct contradiction to the Darwinian theory that everybody is supposed to believe."[221]

Indeed, the panspermia theory would have been alien to Darwin (yeah, pun intended), but is it true that it was a "direct contradiction" to his theory, as Dr. Wickramasinghe suggested? Let us consider the claims. In the late 1970s, Wickramasinghe revealed, he and Hoyle "reached the conclusion that a whole body of astronomical data pointed to micro-organisms being present in our galaxy." He argued that "bacteria seemed therefore to be present on a galaxy-wide scale," and testified that "the failure on the part of most scientists today to recognise such obvious facts owes in large measure to the early indoctrination in Darwinism."[222] If, as most scientists testified, the theory of evolution had nothing to say about the origin of life, however, evidence of microorganisms diffused through space need not contradict Darwinian evolution.

Indeed, though Wickramasinghe believed "a space origin of life would seem to be securely established," he never posited any mechanism whereby life, extraterrestrial though it may have been, first appeared in the universe. He revealed that he personally believed in both a creator *and* the natural emergence of life. "My own philosophical

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[221] "*McLean v. Arkansas Board of Education* Decision," U.S. District Court Judge William R. Overton.
[222] "A Prepared Statement by Defense Witness Dr. Chandra Wickramasinghe," *McLean v. Arkansas Documentation Project.*

preference is for an essentially eternal, boundless Universe, wherein a creator of life somehow emerges in a natural way," he wrote.[223] Wickramasinghe did not describe in what ways the biotic flakes from space were genealogically connected to the life already here on Earth, however. As a result, it is difficult to determine whether his theory advocated biological exchange among distinct genealogies, or rather the recombination of life forms that had first emerged from the same source and developed thereafter.

How Many Genealogies?

Indeed, the entire debate over life's origins was also one about the *number* of genealogies operating in nature. Because debate over the mechanism of initial animation yielded ambiguous conclusions and left the conditions of early life an unexplained mystery, scientists remained unable to say definitively just how many genealogies even existed in nature. In the *Origin*, Darwin had once confidently asserted that there existed less than ten genealogies in all of nature. "I believe that animals are descended from at most only four or five progenitors," he wrote, "and plants from an equal or lesser number."[224] He accepted the possibility, however, that his theory of common descent might likewise entail but one genealogy in which *all* living things participated:

> It does not seem incredible that, from some such low and intermediate form, both animals and plants may have been developed; and, if we admit this, we must likewise admit that all the organic beings which have ever lived on this earth may be descended from some one primordial form. But this inference is chiefly grounded on analogy, and it is immaterial whether or not it be accepted."[225]

A century after Darwin died, Morris, whom Eugenie Scott once labeled "the most influential creationist of the late twentieth century," offered a different challenge to the

[223] "A Prepared Statement by Defense Witness Dr. Chandra Wickramasinghe," *McLean v. Arkansas Documentation Project.*
[224] Darwin, *The Origin of Species*, 6th edition, p. 523.
[225] Darwin, *The Origin of Species*, 6th edition, p. 524.

number of genealogies posited by the theory of common descent.[226] The theory of common descent, as he interpreted it, implied that life had emerged from nonlife according to natural laws. If conditions were right, he wrote, then "it should be expected as a basic prediction from the evolution model that the processes themselves still operate today and therefore that the evolution of life from non-life also is taking place today."[227] When conditions were right, Morris argued, Darwinism would therefore imply the constant emergence of new genealogies.

Interestingly, Morris's understanding of Darwinism and Wickramasinghe's panspermia theory would have a similar conceptual effect on the tree of life. Wickramasinghe's theory posited that essential biotic materials had in the history of the solar system rained down on this planet, and that they continued to do so in modern times. "In our view," Wickramasinghe hypothesized, "every crucial new inheritable property that appears in the course of the evolution of species must have an external cosmic origin."[228] Moreover, Wickramasinghe argued, the theory "hypothesizes that the earth remains under the continuing influence of genetic material from space which continues to affect life."[229] Therefore, conceptualized on a planetary scale, his theory rendered a tree of life that was assisted in its development by the seemingly random appearance of biotic materials from outer space. On a universal scale, however, because Wickramasinghe's theory explained neither how nor from whence this extraterrestrial biota emerged, it encountered the same tired questions. It remained equally plausible that

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[226] Eugenie Scott, "Antievolution and Creationism in the United States," *Annual Review of Anthropology,* 26 (1997), p. 268.
[227] Morris, *Scientific Creationism*, p. 46.
[228] "A Prepared Statement by Defense Witness Dr. Chandra Wickramasinghe," *McLean v. Arkansas Documentation Project.*
[229] "*McLean v. Arkansas Board of Education* Decision," U.S. District Court Judge William R. Overton.

his theory entailed either a) a single universal genealogy in which biological material from around the universe shuffled within the same genealogy, or b) genetic exchange among distinct genealogies, each of which had emerged of its own accord at different points across the universe. Regardless of the theory's precise genealogical implications, panspermia's very existence was a testament to the historicity of the tree of life and its contested boundaries.

Judge Overton's Decision

Just after New Years, 1982, Judge Overton rendered his decision in the case of *McLean vs. Arkansas*. Because it violated the Establishment Clause of the First Amendment, he ruled, creation-science was sternly prohibited from public classrooms. The ruling resolutely reaffirmed common descent's place in American education. Whereas explicitly religious rhetoric had doomed their laws in 1968, critics of common descent now learned that laws merely crafted with religious *intent* were likewise violations of the First Amendment.

This development constitutes an intriguing wrinkle in the legal reception to common descent. Because the *Epperson* case was decided three years before *Lemon vs. Kurtzman* (1971), common descent's critics had never been subjected to the celebrated Lemon test. Established as a judiciary tool, the Lemon test insisted that in addition to its prohibition on religious language, the Constitution likewise prohibited federal endorsement of ideas drafted with religious intent. The Lemon test allowed Judge Overton to acknowledge the critics' rhetoric and social performance, while also examining the impulses which informed that performance:

> It is true, as defendants argue, that courts should look to legislative statements of a statute's purpose in Establishment Clause cases and accord such pronouncements great deference… Courts are not bound, however, by legislative statements of purpose or disclaimers. In determining the legislative purpose of a statute, courts many consider evidence of the historical context of the Act.[230]

Indeed, in an effort to corroborate their claims that creationism constituted a legitimate scientific paradigm, creationists produced several dubious witnesses. Norman Geisler, for example, served as a witness for the defense because he was a professional theologian who considered creationism scientific. His expert status may have been undermined, however, when he revealed peculiar beliefs about UFOs in his deposition.

> Q: Do you have any professional opinion as to the existence of UFO's?
> A (Geisler): Yes, I believe that UFO's exist.
> Q: And how are they connected with Satan?
> A: I believe that they are a part of a mass deception attempt, that they are means by which Satan deceives because he is a deceiver and he is trying to deceive people. He did it from the beginning in the Garden of Eden, and he has been doing it now through the years. And this is one of the ways that he is deceiving people.[231]

The state likewise called Hilton Fay Hinderliter to serve as an expert witness in the philosophy of science, despite the fact that Hinderliter admitted that he had never taken a course in the philosophy of science, could only name two other philosophers of science (Kuhn and Popper), and could not accurately recall the title of even one of their books.[232]

Of further interest to us, however, is that Judge Overton also provided the court's official opinion on both the concept of shared genealogies and the origin-of-life debate. Despite the law's bold insistence that "separate ancestry for man and apes" was a legitimate scientific claim, he wrote, virtually no scientific evidence had been advanced during the trial to support the claim. As a result, Judge Overton engaged with claims for separate ancestries in just two sentences of his 11,000-word decision. "The statement in

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[230] "*McLean v. Arkansas Board of Education* Decision," U.S. District Court Judge William R. Overton. [Emphasis in original]
[231] "Transcript of deposition of Norman Geisler," *McLean v. Arkansas Documentation Project,* p. 73.
[232] "Transcript of deposition of Hilton Fay Hinderliter," *McLean v. Arkansas Documentation Project*, p. 86.

4(a)4 of 'separate ancestry of man and apes' is a bald assertion," he wrote. "It explains nothing and refers to no scientific theory or fact."[233] This statement marks a significant shift in the history of American judicial opinion. Claims that had carried the day at the "trial of the century" in 1925 were summarily dismissed as groundless in 1981. For the first time, the American judiciary explicitly rejected the scientific validity of the theory that each species maintains its own genealogy.

The court also found it curious that Act 590 articulated an understanding of common descent that creationists' behavior did not reflect. Common descent, according to the statute, implied that humans emerged "from a common ancestor with apes," but creationists' behavior suggested that they interpreted the theory otherwise.[234] Critics continued to reject the suggestion that extant species were ancestral to humans, this despite the fact that virtually no working scientist had insisted as much. "The evolutionary notion that man and some modern apes have a common ancestor somewhere in the distant past has consistently been distorted by anti-evolutionists to say that man descended from modern monkeys," Judge Overton observed in a footnote. He also pointed to educational charts employed by critics of common descent which purported to describe a "very important part of the evolutionary model." The first chart "conveys the idea that such diverse mammals as a whale, bear, bat, and monkey all evolved from a shrew," Judge Overton wrote, adding that "such a suggestion is, of course, a totally erroneous and misleading application of the theory." He then cited another educational chart that provided an "even more objectionable" interpretation of common descent:

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[233] "*McLean v. Arkansas Board of Education* Decision," U.S. District Court Judge William R. Overton.
[234] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.

> The chart purports to illustrate the evolutionists' belief that man evolved from bacteria to fish to reptile to mammals and, thereafter into man. The illustration indicates, however that the mammal which evolved was a *rat*.[235]

Therefore, despite scientific protestations to the contrary, critics assumed common descent implied that humans descended from rats, an animal assigned such low status in George Orwell's *1984* that the fear it inspired was used to symbolize "the worst thing in the world."[236]

Judge Overton also wrote at length about the debate over life's origins that he witnessed in his courtroom. He puzzled over the definition assigned to evolution in Act 590, including the passage which read that "evolution-science includes the scientific evidences and related inferences that indicate: (1) emergence by naturalistic processes of… life from nonlife."[237] He wrote that:

> the emphasis on origins as an aspect of the theory of evolution is peculiar to the creationist literature. Although the subject of origins of life is within the province of biology, the scientific community does not consider origins of life a part of evolutionary theory. The theory of evolution assumes the existence of life and is directed to an explanation of *how* life evolved. Evolution does not presuppose the absence of a creator or God and the plain inference conveyed by section 4 is erroneous.[238]

In the court's understanding, therefore, the theory of common descent could trace one's genealogy back to an original progenitor, but that it feigned no hypothesis as to the *vera causae* that first gave rise to that original progenitor. Nor, as the court understood it, did evolutionary theory seek to explain whether there was one original progenitor among the world's species or many. The judiciary did, however, help elucidate a disconnect between the biotic and abiotic worlds where there as yet existed no scientific consensus.

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[235] "McLean v. Arkansas Board of Education Decision," U.S. District Court Judge William R. Overton. [Emphasis in original]
[236] George Orwell, *1984* (Harcourt Brace and Company, 1949), p. 101.
[237] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.
[238] *McLean v. Arkansas Bd. of Ed*., 529 F.Supp. 1255, 1258-1264 (ED Ark. 1982).

Postscript

In light of the court's emphatic opinion, the Attorney General of Arkansas elected not to appeal the *McLean* decision.[239] Lawmakers in Louisiana, however, followed a different course of action. In July, 1981, Louisiana had likewise passed a measure requiring equal time for "creation-science" and "evolution-science." Republican Governor Dave Treen expressed some trepidation when signing the bill. "To be honest, I am not free of doubt about my decision," he told reporters. "There could be some complications down the road," he presciently remarked.[240] Indeed, in early December, just before the McLean trial began, the ACLU brought suit against the state of Louisiana.[241]

Louisiana doggedly defended its statute for six years, at which point the case was finally heard before the United States Supreme Court. In 1987, the Supreme Court echoed the logic Judge Overton employed in 1981. "The Louisiana Creationism Act advances a religious doctrine by requiring either the banishment of the theory of evolution from public school classrooms or the presentation of a religious viewpoint that rejects evolution in its entirety," Justice Brennan wrote. "The Act violates the Establishment Clause of the First Amendment because it seeks to employ the symbolic and financial support of government to achieve a religious purpose."[242]

Thus, in the 1980s, common descent enjoyed widespread support. Not only did an overwhelming number of biologists endorse the theory, public schools also taught common descent as the lone explanation for biological diversity. What is more, the

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[239] *New York Times*, February 5, 1982.
[240] "Louisiana Orders Schools to Teach Creationism," *Los Angeles Times*, July 22, 1981, p. B12.
[241] "Suit to Challenge Louisiana Law on Teaching Creation," *Los Angeles Times*, December 2, 1981, p. A2.
[242] "Edwards, Governor of Louisiana, et al. v. Aguillard et al." 482 U.S. 578; 107 S. Ct. 2573; 1987 U.S. LEXIS 2729; 96 L. Ed. 2d 510; 55 U.S.L.W. 4860.

American judiciary's reigning interpretation of the Establishment Clause protected the theory's place in public education. The *McLean* case had provided the forum in which anti-evolutionists promoted a competing interpretation of the planet's biota. Shifting constitutional interpretation provided a new set of conditions to which one would either adhere or never again find audience with the judiciary. These new conditions prompted critics of common descent to reinvent their social performance. Thus, fundamentalism gave way to creation-science. The new façade gave rise to new conversations about the tree of life, which in turn helped to better elucidate the theory's implications and its boundaries.

Darwinism was a profound concept, however, and resistance to it remained acute. Not surprisingly, therefore, the next generation brought with it new complaints against evolution. As will be shown, however, this newer brand of anti-evolutionism, known as intelligent design, offered a radically new understanding of common descent with special implications for anthropocentrism.

Chapter Three

"All Animals are Equal, but some are More Equal than Others"

Intelligent Design and the Fate of Anthropocentrism

Introduction

As the twentieth century drew to a close, Darwin's theory of common descent enjoyed unprecedented success. Biologists continued to refine how they conceptualized the tree of life, while critics who objected to other Darwinian tenets found it increasingly expedient to ignore, and sometimes concede, common descent. The United States Supreme Court, meanwhile, had reinforced its secular interpretation of the Establishment Clause during *Edwards vs. Aguillard*, ensuring that the theory of common descent was afforded a position of preeminence in public biology classrooms across the nation. Thus, when anti-evolutionism emerged anew as intelligent design (ID) in the 1990s, anti-evolutionists assumed their most conciliatory position yet. They again disavowed the Bible as a source of scientific authority, and, unlike creationists, they no longer insisted upon a young Earth or a suspiciously Noachian flood. What is more, anti-evolutionists no longer sought to have their theory afforded equal time; they merely sought to have it mentioned in science classrooms.

Meanwhile, the idea that humans constituted but one branch on a bewilderingly diverse tree of life continued to find widespread support from biologists. As such, one might reasonably assume that anthropocentric attitudes had waned accordingly. The ID movement revealed, however, that while anthropocentrism had retreated, it was otherwise alive and well. The ID movement, which culminated with the *Kitzmiller vs. Dover* trial in 2005, revealed how anthropocentrism coexisted with common descent. Even if humans had not been created distinct and superior, many argued, their incomparable mental faculties nevertheless rendered them superior. Although intelligence-based

anthropocentrism existed long before the ID movement and found favor among Darwinists as well, it assumed new importance as the tree of life gain acceptance.

The Intelligent Design Movement

Following the creationist court cases of the 1980s, Darwinian evolution, and its constituent theory of common descent, continued to enjoy widespread support. America's leading scientific institutions affirmed their staunch belief that Darwinian evolution offered the best explanation for biological phenomena. "Biological evolution is the central organizing principle of modern biology," the National Academy of Sciences recently reported. "The theory of evolution is supported by so many observations and experiments," the NAS continued, "that the overwhelming majority of scientists no longer question whether evolution has occurred and continues to occur."[243]

As biologists overwhelmingly accepted common descent, the American judiciary reaffirmed its implicit support for the theory. To be sure, while no American court ever mandated that common descent be taught, the Supreme Court had twice invalidated efforts that would have challenged the theory's preeminent position in public classrooms. Although the high court allowed that alternate biological paradigms might be taught in science classrooms, it again ruled that the Establishment Clause prohibited any such paradigm advanced with religious intent. Thus, the theory of common descent not only informed the research of nearly every biologist in America, it was also mandated to be taught to almost every student in public schools across the country.

And yet, as if on cue, a new generation brought with it new complaints about Darwinian evolution. The intelligent design (ID) movement emerged in the 1990s when

[243] "Science, Evolution, and Creationism," National Academy of Sciences, 2008, p. 4, 3.

a dynamic and motivated corps of well-credentialed anti-evolutionists challenged the Darwinian synthesis. They brought new empirical arguments to an admittedly old idea. Like William Paley, who two centuries earlier had suggested that one might infer from a watch's complexity that it had been designed, ID proponents extended the design argument to the biological world. They argued that apparent design, biological or otherwise, implied a designer. According to *Of Pandas and People*, the seminal ID textbook published in 1993, "a central core idea that modern adherents" hold is "the concept that life is like a well-crafted object, the result of intelligent shaping of matter."[244] Proponents of ID promoted the theory of irreducible complexity, first proffered by Michael Behe in *Darwin's Black Box*. Behe argued that many biological structures, like the bacterial flagella and the blood clotting cascade, had not only been designed but that they had been designed as such. The ID movement's ascension was accelerated when *Darwin's Black Box* found publishing success. Behe's book had already sold over 200,000 copies when the movement reached its zenith during the *Kitzmiller* case in late 2005.[245]

Although the nation's leading ID advocates held credible positions in academia, they frequently published under the auspices of a Seattle-based think-tank called the Discovery Institute. The institute emerged as the leading advocate for ID, heralding its early accomplishments in an internal memo known as the Wedge document. The leaked memo, the production of which the Discovery Institute has since acknowledged, detailed the method by which ID proponents hoped to make their movement more viable. The

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[244] Dean Kenyon and Percival Davis, *Of Pandas and People: the Central Question of Biological Origins*, second edition (Foundation for Thought and Ethics, 1993), p. 78.
[245] "Michael Behe," *Kitzmiller vs. Dover Area School District*, TalkOrigins.com. All references to *Kitzmiller vs. Dover* transcripts were last accessed May 6, 2008 and are available at http://www.talkorigins.org/faqs/dover/kitzmiller_v_dover.html.

Wedge document boasted that the success of *Darwin's Black Box* and Phillip Johnson's *Darwin on Trial*, a lawyer's attack on Darwinism's logic, endowed the ID movement with increased legitimacy. "We are building on this momentum," the memo assured Discovery Institute members.[246]

In addition to setting benchmarks for "scientific research, writing, and publication," the Wedge document also recognized the judiciary's extraordinary potential for influence, suggesting "potential legal action" as part of a plan it called "Cultural Confrontation."[247] As it happened, ID proponents did not have to wait very long for their day in court. Events would soon transpire that would not rock a sleepy Pennsylvania town but also pit Darwinism against ID in the courtroom.

School Board Showdowns

Dover, a rural community in south-central Pennsylvania, might have struck some as an unlikely setting for anti-evolution furor. But, while America's anti-evolution efforts had generally been confined to the South, they had never been exclusively so. Dover, only thirty miles north of the Mason-Dixon Line, shared with its southern brethren a rural way of life and a large Christian presence. Indeed, several fundamentalist Christians sat on the school board for the Dover Area School District.

Beginning in 2004, the Dover school board's meetings grew increasingly hostile and bizarre. "Typically, a school board meeting is a very dry thing," English teacher Christy Rehm recalled. "A couple people show up because they have a certain issue they

[246] "The Wedge," Center for the Renewal of Science and Culture at the Discovery Institute (Seattle: 1999).
[247] "The Wedge," Center for the Renewal of Science and Culture at the Discovery Institute.

want to discuss."[248] That changed, however, when a few board members, led by Bill Buckingham, began to take special umbrage with Darwinian evolution. At Buckingham's behest, the board postponed the allocation of funds to buy a particular biology textbook because he said the textbook was "laced with Darwinism."[249] The board's action set off a fury, and subsequent board meetings became the forum for intense debate. "These meetings would be hundreds of people," Rehm remembered, "and it would be hot, and people would be upset, and it was a zoo. It was just an absolute madhouse."[250] Beth Eveland, who publicly protested the board's behavior, remarked that the meetings permeated by a "a circus-like atmosphere" and sometimes dissolved into "shouting matches."[251]

At one school-board meeting, a young man named Max Pell listened with astonishment as Buckingham and fellow board member Allan Bonsell impugned Darwinism. Pell, a freshman at Penn State and recent graduate from Dover Area High School, stood before the board and explained that evolution was the cornerstone of biology. Buckingham would have nothing of it. "Well, you're a perfect example of what happens to students when they go to college," Buckingham told Pell in a fit of frustration. "They get brainwashed."[252]

Buckingham proudly rejected evolution on Biblical grounds. During one heated meeting, he complained that endorsing evolution denigrated Christ. "Two thousand years ago, somebody died on a cross," he told Dover citizens, "can't somebody stand up and

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[248] "Judgment Day: Intelligent Design on Trial," *NOVA*, (NP: NOVA & Vulcan Productions, 2007).
[249] "Bill Buckingham," *Kitzmiller vs. Dover Area School District*. October 27, 2005.
[250] "Christy Rehm," *Kitzmiller vs. Dover Area School District.* September 28, 2005.
[251] "Beth Eveland," *Kitzmiller vs. Dover Area School District*. September 28, 2005.
[252] "Barrie Callahan," *Kitzmiller vs. Dover Area School District.* September 27, 2005.

take a stand for him?"[253] Later, Buckingham told those in attendance that "this country wasn't founded on Muslim beliefs or evolution. It was founded on Christianity."[254] At still another meeting, Buckingham's wife delivered a homily during the meeting's public-comments section that lasted three times longer than was typically allowed.[255] Her speech, which a witness later described as "tantamount to a religious sermon," lasted twenty minutes.[256]

In several ways, therefore, the board failed to demonstrate shared principles with ID, the movement it would soon endorse. Bill Buckingham's invocation of fundamentalist Christianity to combat evolution did not reflect the opinions of the nation's leading anti-evolutionists, for example. Evolution's most visible critics had long since abandoned the Bible as a source of scientific authority, instead adapting their message to better correspond with contemporary constitutional interpretation.

The board's comprehension of Darwinian evolution was likewise suspect. The nation's leading anti-evolutionists had long since abandoned the monkey-as-ancestor motif, and ID proponents were no different. "It is unfair criticism," Kenyon and Davis wrote in *Of Pandas and People*, "to say that Darwinists believe a monkey evolved into a man. Whatever past followers of intelligent design and Darwinism might have held," he continued, "it is clear that modern proponents do not hold such views."[257]

"The concerns that were expressed from Alan Bonsell were dealing primarily with the idea of… monkeys to man," Bryan Rehm, Bonsell's former colleague on the

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[253] "Bryan Rehm," *Kitzmiller vs. Dover Area School District*. September 27, 2005.
[254] "Beth Eveland," *Kitzmiller vs. Dover Area School District*. September 28, 2005.
[255] "Christy Rehm," *Kitzmiller vs. Dover Area School District*. September 28, 2005.
[256] "Frederick Callahan," *Kitzmiller vs. Dover Area School District.* September 29, 2005.
[257] Kenyon and Davis, *Of Pandas and People*, p. 77.

board, observed.[258] "You can't expect me to believe that I was ever descended from apes and monkeys," Bonsell told young Max Pell during their public exchange.[259] Buckingham shared Bonsell's misinterpretation. "Yeah, you're not going to tell me that I came from apes," he announced, "and if you insist on it, which side of your family came from apes?" Buckingham had not only unwittingly channeled the spirit of Bishop Wilberforce, he had, in good anthropocentric fashion, also stigmatized humans' closest cousins in the tree of life.

Thus, while the nation's leading evolutionists increasingly looked beyond the purported genealogical relationship between humans and apes, the suggestion remained incendiary in communities like Dover. Someone even destroyed a giant mural depicting human evolution that had been displayed in Dover Area High School. "The mural was a senior art project by one of our former students," former board member Carol Brown explained. "It was a wall-sized mural, and it depicted the ascent of man," she later testified. "It was his perception the way human beings have evolved based on his studies."[260] Brown's husband, Jeffrey, also testified about the mural. "It depicted an ape at one end and a very recognizable modern day man at the other and a series of evolutionary stages in between."[261] The school district's supervisor of buildings and grounds "was deeply offended by the mural and took it upon himself to burn it."[262] According to biology teacher Jennifer Miller, Buckingham played some part in the arson, claiming to have "gleefully watched it burn."[263]

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[258] "Bryan Rehm," *Kitzmiller vs. Dover Area School District.* September 27, 2005.
[259] "Barrie Callahan," *Kitzmiller vs. Dover Area School District.* September 27, 2005.
[260] "Carol Brown," *Kitzmiller vs. Dover Area School District*. September 29, 2005.
[261] "Jeffrey Brown," *Kitzmiller vs. Dover Area School District.* September 29, 2005.
[262] "Carol Brown," *Kitzmiller vs. Dover Area School District.* September 29, 2005.
[263] "Jennifer Miller," *Kitzmiller vs. Dover Area School District.* October 6, 2005.

Buoyed by other board members' belief that evolution and Christianity were incompatible, Buckingham successfully stonewalled the purchase of new biology textbooks until certain concessions were made. He had contacted the Discovery Institute about the possibility of reintroducing God into the classroom, but was advised against pursuing that approach. Sensing a potential test case for ID, the Discovery Institute suggested that teachers continue teaching evolution, but that students also be made aware of unanswered gaps in the theory.

Dover's biology teachers, who had long protested the board's intrusion, gave in to Buckingham's demands in order to finally receive the new textbooks that he had held hostage. In return, the Dover Area High School accepted fifty copies of the ID textbook, *Of Pandas and People*, donated by privately raised funds. In October, 2004, the board approved a significant change in the biology curriculum by a vote of 6-3. The new curriculum mandated that "students will be made aware of the gaps/problems in Darwin's theory and of other theories of evolution including, but not limited to, intelligent design." A postscript added, "Note: Origins of life is not taught."[264]

A month later, the board announced that, commencing with the new semester, the district's biology teachers would henceforth read a statement about evolution to their students. The four-paragraph statement is reproduced below in its entirety:

> The Pennsylvania Academic Standards require students to learn about Darwin's theory of evolution and eventually to take a standardized test of which evolution is a part.
>
> Because Darwin's Theory is a theory, it is still being tested as new evidence is discovered. The Theory is not a fact. Gaps in the Theory exist for which there is no evidence. A theory is defined as a well-tested explanation that unifies a broad range of observations.
>
> Intelligent design is an explanation of the origin of life that differs from Darwin's view. The reference book, Of Pandas and People is available for students to see if they would like to explore this view in an effort to gain an understanding of what intelligent design actually involves.

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[264] Judge John Jones, "Memorandum Opinion," *Tammy Kitzmiller, et al vs. Dover Area School District, et al.* Middle District Court of Pennsylvania (December 20, 2005), p. 1.

> As is true with any theory, students are encouraged to keep an open mind. The school leaves the discussion of the origins of life to individual students and their families. As a standards-driven district, class instruction focuses upon preparing students to achieve proficiency on standards-based assessments.

The statement was telling in several important ways. Most obviously, it designated a shift in venue. Previous anti-evolution efforts had mustered sufficient support in state legislatures, thereby instituting statewide measures against Darwinism. Unable to rally enough statewide support, however, ID relied instead on local school boards. They recognized that like the state legislature, but on a much smaller scale, the local school board was a nonscientific entity that held authority over a scientific domain: the public classroom. However, each school board exercised jurisdiction over far fewer individuals than their counterparts in the state legislature.

If the change in venue suggested diminished power among anti-evolutionists, the nature of the demands made by the Dover school board likewise indicated their retreat. Consider that the Butler Act, passed by Tennessee in 1925, had explicitly prohibited the theory of common descent. Act 590, passed by Arkansas in 1981, reflected the anti-evolutionist's new position of disadvantage. Conceding that evolution would not likely again be prohibited from public schools, anti-evolutionists sought merely to have "creation-science" afforded equal status as "evolution-science" in public science classrooms. Then, in light of the creationists' defeat, ID proponents offered their most conciliatory compromise yet. Students need not be taught any theory other than Darwinism, the Dover school board agreed. Instead, students will simply be made aware that there existed another "explanation of the origin of life" known as "Intelligent Design."[265]

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[265] Judge Jones, "Memorandum Opinion," p. 2.

Three board members had opposed their colleague's opposition to evolution, and promptly resigned in protest when the board passed the anti-evolution gestures. Less than a month after the board issued its curriculum changes, eleven parents of Dover school students filed a lawsuit in federal court in Pennsylvania, alleging the Dover school board was violating their constitutional rights by introducing religion into the science classroom. Furthermore, as it had in every meaningful evolution trial since 1925, the ACLU served as counsel to the Darwinists' side, assisted by Americans United for Separation of Church and State and the Philadelphia law firm, Pepper Hamilton."[266] One of the plaintiffs, a parent named Tammy Kitzmiller, leant her name to the proceedings, and *Tammy Kitzmiller vs. Dover Area School District* was born.

Intelligent Design as Science?

Amidst the furor over its religious nature, ID proponents eagerly disavowed the intellectual heritage of previous anti-evolutionists. At last granted the visible public forum in which they might better advance the aims of the ID movement, proponents of ID articulated their theory's essential claims. *McLean vs. Arkansas* necessarily informed the way that later anti-evolutionists defined themselves. The court had ruled that the creation-science movement, though it never publicly referenced the Bible, was clearly inspired by the book of Genesis. Alternatives to evolution were not forbidden, Judge Overton had ruled, though they must be demonstrably scientific rather than religious in nature. In its *Edwards* decision, the Supreme Court agreed: "Teaching a variety of scientific theories about the origins of humankind to schoolchildren might be validly

[266] Judgment Day: Intelligent Design on Trial," *NOVA* (NP: Public Broadcasting Station, 2007).

done with clear secular intent," the high court ruled."[267] But, because creation-science had been drafted with religious intent, efforts to inject that particular theory into biology curricula violated the Establishment Clause of the First Amendment.

ID proponents heartily acknowledged the Christian nature of its anti-evolution predecessors, but averred that ID was different. "ID is neither historically connected to *Scopes* nor is its literature replete, as is creationist literature, with recommended curricula that are transparently derived from *Genesis*," Beckwith wrote.[268] Phillip E. Johnson, former Berkeley professor of law and senior fellow at the Discovery Institute, likewise dismissed creationism as inherently religious in *Darwin on Trial*. "Creation-science," he wrote, "is commonly understood to refer to a movement of Christian fundamentalists based upon an extremely literal interpretation of the Bible."[269] Johnson rejected both the means and the aims of his anti-evolution predecessors. "The Arkansas statute," he wrote in reference to Act 590, "was the work of unsophisticated activists who had no idea how to attract support from outside their own narrowly fundamentalist camp."[270] In order to avoid similar pitfalls, Johnson explicitly rejected the Bible as scientific authority. "I am not interested in any claims that are based upon a literal reading of the Bible," he declared.[271] Kenyon and Davis likewise rejected any connection between ID and religion. "A final misconception you may encounter," they advised teachers, "is that intelligent design… is merely fundamentalism with a new twist."[272]

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[267] "Edwards, Governor of Louisiana, et al. v. Aguillard et al." 482 U.S. 578; 107 S. Ct. 2573; 1987 U.S. LEXIS 2729; 96 L. Ed. 2d 510; 55 U.S.L.W. 4860.
[268] Francis J. Beckwith, "Science and Religion Twenty Years after McLean vs. Arkansas: Evolution, Public Education, and the New Challenge of Intelligent Design," *Harvard Journal of Law & Public Policy*, Vol. 26, (2003), p. 487.
[269] Phillip Johnson, *Darwin on Trial* (Washington: Regnery, 1991), p. 4.
[270] Johnson, *Darwin on Trial*, p. 111.
[271] Johnson, *Darwin on Trial*, p. 113.
[272] Kenyon and Davis, *Of Pandas and People*, p. 161.

The intelligent design movement's disinterest in religion inspired mixed reaction from contemporaneous fundamentalists and creationists. Henry Morris, for example, who acknowledged that his personal religious beliefs inspired his commitment to creationism, dismissed ID because he found it incompatible with Christian revelation. He complained that "many Christians now seem to think that [the intelligent design movement] has freed them from having to confront the Genesis record of a young earth and global flood."[273] Others were more forgiving. Dover board members Buckingham and Bonsell were unabashed fundamentalists, for example, but advocated ID as a surrogate. Even televangelist Pat Robertson equated ID with a Christian God.[274]

Despite this mixed support from other anti-evolutionists, ID proponents consistently reiterated during the trial that its research was scientific and not religious. "Intelligent design theory is science," the defense announced in its opening statement. "It is not religion," the defense's lead expert testified in court. "It is based entirely on observable, empirical, physical evidence from nature plus logical inferences."[275]

Cultivating the Tree of Life

In previous generations, fundamentalists and creationists vehemently rejected the Darwinian tree of life. In order to appreciate ID's position on common descent, therefore, it is important to understand precisely how the tree of life was being interpreted and understood by scientists and nonscientists alike.

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[273] Quoted in: William Dembski, "Intelligent Design's Contribution to the Debate over Evolution: a Reply to Henry Morris," *DesignInference.com* (Accessed May 6, 2008).
[274] Alan Elsner, "Robertson Says Town Rejects God," *Washington Post*, November 11, 2005.
[275] "Michael Behe," *Kitzmiller vs. Dover Area School District.* October 17, 2005.

For example, the means by which the tree of life first appeared remained a matter of some dispute. Like creationists before them, most ID proponents continued to assume that Darwinism included natural emergence of life from non-life. "Evolution," Beckwith wrote, "is more than a theory applicable to biology and biochemistry. It also asserts that the bacterial cell from which all life arose sprung from inorganic matter."[276] Kenyon and Davis added that, "the 'chemical evolution' theory assumes that matter and energy somehow self-organized into complex forms."[277] Chemical evolution, they argued, "has become the standard evolutionary approach to the origin of life."[278]

Although Darwinists readily confessed their theory's inability to explain the origin of life, an increasing number confessed their bias that it was probably naturalistic. Kenneth Miller, a staunch evolutionist, entertained the suggestion that life had initially appeared via supernatural fiat. He seized upon the fact that evolution "does not require that life must have originated from naturalistic causes – only that its biological history is driven by the same natural forces we observe every day in the in the world around us." As such, he wrote, we could "hold up the origin of life itself as an unexplained mystery, and find in that our proof of God at work." He ultimately advised against this strategy, however. "Such an assertion would be free from challenge," he wrote, "but only for the moment." After all, he observed, the historical trajectory suggested that any such God-of-the-gaps theory would eventually fall prey to naturalism. "We are now far enough

[276] Francis J. Beckwith, "Science and Religion Twenty Years after McLean vs. Arkansas," p. 464.
[277] Kenyon and Davis, *Of Pandas and People*, p. 41.
[278] Kenyon and Davis, *Of Pandas and People*, p. 2.

along in the development of science to appreciate that its track record suggests that ultimately it will find natural causes for natural phenomena," Miller remarked.[279]

Understandably, perhaps, the concept that living things had somehow emerged gradually from inanimate matter continued to confound anti-evolutionists. For example, Jonathan Wells, a leading critic of evolution, took umbrage with microbiologist Carl Woese, who developed a new phylogenetic taxonomy when he defined archaea as a new kingdom. Woese had attempted to ground the tree of life's roots in the inanimate world. "The universal ancestor is not an entity, not a thing," Woese wrote in 1998, "it is a process." Woese, reflecting increasingly conventional scientific opinion, had argued that life emerged from "an interchange of genetic material in a complex primordial soup." He concluded, therefore, that "the universal phylogenetic tree… is not an organismal tree at its base."[280]

Wells recoiled from the materialistic suggestion that life arose naturally in the rich primordial froth. "Woese recommends abandoning the idea that the universal common ancestor is a living organism," Wells wrote in disbelief. "If the universal common ancestor was not an organism," he complained, "then does it make sense to call it an 'ancestor?'" If true, Wells observed with both horror and accuracy, chemical evolution would dissolve the conceptual wall that had forever separated the biotic and abiotic worlds. "If the primordial soup is our ancestor," he wrote, "so is the periodic table of the

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[279] Kenneth Miller, *Finding Darwin's God: a Scientist's Search for Common Ground between Evolution and God* (New York: Cliff Street Books / Harper Collins, 1999), p. 276, 240.
[280] Quoted in: Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What we Teach About Evolution is Wrong* (Washington: Regnery Publishing, 2000), p. 52.

elements, or the planet Earth. Once the notion of organism is discarded, the word 'ancestor' loses its biological meaning."[281]

Though scientists lacked consensus on how life began, many agreed that it had emerged only once. Their belief supported the extraordinary claim that *all* living things are related. After all, a single origin entails a single genealogy. Indeed, though their endorsement contained caveats, Darwinists increasingly accepted that all living things (plant, animal, or otherwise) belonged to a *single* genealogy. "Most of Darwin's modern followers believe that the origin of life was sufficiently improbable that the tree of life is rooted in a single universal common ancestor," wrote Wells.[282] Mayr observed that "there is probably no biologist left today who would question that all organisms now found on the earth have descended from a single origin of life."[283] Philosopher of biology Philip Kitcher agreed: "Darwin's successors have interpreted him as hypothesizing a single tree of life," he wrote. "Contemporary versions of Darwinism conceive of life as having a single origin," he continued, "from which living things split into distinct forms."[284]

Miller argued that humans share a bond with every other living thing by virtue of their joint genealogy. "Our lives and the lives of every animal, plant, and microorganism of this planet have a physical basis in the chemistry of cells and tissues," he began. "We share a physical continuity with the lives of others, and are inextricably linked to *all* other

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[281] Wells, *Icons of Evolution*, p. 52.
[282] Wells, *Icons of Evolution*, p. 31.
[283] Ernst Mayr, "Darwin's Five Theories of Evolution," p.761.
[284] Philip Kitcher, *Living with Darwin*, pp. 16, 17.

life on earth." This continuity, he argued, was genealogical. "New individuals do not spring, like Athena, from the minds of gods, but rather are born of the flesh."[285]

While the singular tree of life was increasingly endorsed as fact, the tempo and shape of its expansion remained the subject of considerable debate. Stephen Jay Gould, the well-known late-twentieth-century paleontologist, insisted that popular iconographies misrepresented the shape of the tree. According to Gould, the fossil record indicated that the tree of life should actually more closely resemble a bush, where maximum biological disparity existed in the past and had since been winnowed by natural selection. "Life is a copiously branching bush," Gould explained, "continually pruned by the grim reaper of extinction."[286] His theory of punctuated equilibrium further refined the bush of life, advocating long periods of evolutionary stasis punctuated by periods of rapid variation.

But while the tree of life's tempo and structure were debated, the tree of life itself remained beyond question. The community of common descent became the bedrock fact upon which other hypotheses were crafted. Though he toyed with its structure and pace, Gould's bush-of-life models always exhibited the essential continuity which defines a genealogy. In any model, therefore, humans remained kin to a wide variety of other species.

Triumph of Common Descent?

The theory of common descent and the universal tree of life enjoyed such widespread support, in fact, that it began to affect arguments against evolution in profound ways. In 1925, the Butler Act had explicitly rejected the suggestion that "man

[285] Kenneth Miller, *Finding Darwin's God*, p. 250. My italics
[286] Gould, *Wonderful Life*, p. 35.

had descended from a lower order of animals."[287] In 1981, creationists had likewise confidently insisted on "separate ancestry for man and apes."[288]

In 2005, however, things had changed dramatically. Though board member Bill Buckingham testified that common descent offended his beliefs, national ID leaders were more receptive to the idea.[289] Johnson, often credited with galvanizing the ID movement, conceded that common descent might very well be true.[290] "I believe that a God exists," Johnson revealed, "who might have chosen to work through a natural evolutionary process."[291] Biochemist and prominent ID-proponent Michael Behe was more receptive still. Behe, whom Richard Dawkins once sneeringly labeled the "poster boy for creationists" and "star witness for the creation side," testified against evolution at the Kitzmiller case, but *not* against common descent.[292] "Intelligent design makes no claim," he testified, "either for or against… common descent."[293] In his best-selling *Darwin's Black Box*, Behe revealed that he had no qualms with the theory. "I find the idea of common descent (that all organisms share a common ancestor) convincing and have no particular reason to doubt it," he resolutely wrote.[294]

Thus, the individual considered by many to be the defense's "lead expert" against evolution, readily conceded the reality of shared ancestry among species.[295] Behe's language marked a significant shift in anti-evolution rhetoric. For decades, the nation's

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[287] 1925 Tennessee House Bill 185.
[288] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.
[289] "Bill Buckingham," *Kitzmiller vs. Dover Area School District*. October 27, 2005.
[290] Denis Lamoureux, "Evangelicals Inheriting the Wind: the Phillip E. Johnson Phenomenon," *Darwinism Defeated? the Johnson-Lamoureux Debate on Biological Origins* (Vancouver: Regent College Publishing), p. 9.
[291] Johnson, *Darwin on Trial*, p. 14.
[292] Richard Dawkins's review of Michael Behe's *Searching for the Edge of Evolution*. "Inferior Design," *New York Times,* July 1, 2007.
[293] "Michael Behe," *Kitzmiller vs. Dover Area School District*. October 17, 2005.
[294] Michael Behe, *Darwin's Black Box: the Biochemical Challenge to Evolution* (New York: Free Press, 1996), p. 5.
[295] Judge Jones, "Memorandum Opinion," p. 28.

leading anti-evolutionists had consistently rejected common descent. Now, they found it increasingly expedient to concede common descent. But how, one might reasonably ask, could one accept common descent and yet reject Darwinism? After all, the two had been virtually synonymous for decades. "Intelligent design theory focuses exclusively on the proposed mechanism of how complex biological structures arose," Pennock explained in his testimony. "In other words, intelligent design focuses on… natural selection."[296]

We will soon examine ID's complaints against natural selection, but attention must first be paid to the theory of common descent and the extraordinarily important question its increased acceptance begged: If Darwinists and their critics increasingly agreed that humans were genealogically related to other living species, would not the genealogical basis for anthropocentrism thereafter be logically invalid?

Not surprisingly, many humans struggled to accommodate the tree of life's implications for anthropocentrism. Philosopher Don Marietta, Jr. doubted, for example, whether acknowledging the community of descent could ever lead to a new environmental ethics. While acknowledging common descent's genealogical implications, Marietta pointed out with bewilderment that the "family connection is quite large." "Not only does it include some relations who are quite distant," he remarked, "but it includes some who are so unlike us in significant ways that the analogy seems quite strained." Because our most distant relatives are so alien, Marietta wrote, "the suggestive and striking image of kinship has to be used as an abstraction."[297]

And yet, difficult though it may have been to conceptualize, the purported genealogical relationship between humans and other living things was not abstract, but

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[296] "Robert Pennock," *Kitzmiller vs. Dover Area School District*. September 28, 2005.
[297] Don Marietta, Jr., *For People and the Planet: Holism and Humanism in Environmental Ethics* (Philadelphia: Temple University Press, 1994), p. 38.

actual. Gould explained common descent's very real implications in his 1989 book, *Wonderful Life*. He believed that creatures long ranked inferior to humans on the Great Chain of Being must be reconceptualized as "collateral branches" on the tree of life.[298] "We live surrounded by coeval twigs of life's tree," he observed. "In Darwin's world, all (as survivors in a tough game) have some claim to equal status."[299] He further understood that the tree of life held staggering consequences for humans. "If humanity arose just yesterday as a small twig on one branch of a flourishing tree," he opined, "then life may not, in any genuine sense, exist for us or because of us."[300]

Miller engaged many of the same issues in his book, *Finding Darwin's God*. "Every organism, every cell that lives today," he explained, "is the descendant of a long line of winners, of ancestors who found successful evolutionary strategies time and time again, and therefore lived to tell about it – or at least to reproduce." The process, therefore, meant all extant organisms had survived equally. "The bacterium perched on the lip of my coffee cup has been through just as much evolution as I have," Miller wrote.[301] Richard Dawkins, Oxford professor of evolutionary biology, agreed. He observed that human beings "are fundamentally not exceptional because we came from the same evolutionary source as every other species."[302] Even Phillip Johnson recognized that, in a Darwinian universe, "ants and bacteria are just as advantaged as we are, judged by the exclusive criterion of success in reproduction."[303]

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[298] Gould, *Wonderful Life*, p. 45.
[299] Gould, *Wonderful Life*, p. 42.
[300] Gould, *Wonderful Life*, p. 44.
[301] Miller, *Finding Darwin's God*, p. 271-272.
[302] Campbell, Reece, and Mitchell, *Biology*, 5th Edition (Menlo Park: The Benjamin/Cummings Publishing Company, 1999), p. 412-413. See also: Wells, *Icons of Evolution*, p. 207.
[303] Johnson, *Darwin on Trial*, p. 24.

A Different Kind of Anthropocentrism

The first time Darwin told anyone outside his family about his theory of evolution, he wrote that "it is like confessing a murder."[304] In light of common descent's success, Darwin's comment invites new scrutiny. It is commonly suggested that Darwin's "murder" victim was God and/or Christianity. As the tree of life came increasingly into focus, however, so too did another potential casualty: anthropocentrism.

So, did Darwin actually slay anthropocentrism? The tree of life's egalitarian implications suggested that it should have. After all, how could one continue to preach a human-centered philosophy believing, as Gould did, that humans were but "one tiny, largely fortuitous, and late-arising twig on the enormously arborescent bush of life?"[305]

Quite easily, as it turned out. Even a cursory glance at the historical record reveals that Darwin failed to destroy anthropocentrism. Despite broad claims about the egalitarian nature of life, both supporters and critics of evolution continued to behave in remarkably anthropocentric ways. This phenomenon was made possible because the grounds for anthropocentrism had shifted. Even though fewer individuals were willing to defend their anthropocentrism on genealogical grounds, a large number continued to do so on other grounds. Anthropocentrism remained legitimated by humans' supposedly unique mental faculties, many argued. It must not be assumed, however, that proponents of ID were the first to base their anthropocentrism on human intelligence. Nor should it be assumed that anti-evolutionists were the only ones to promote intelligence-based anthropocentrism.

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[304] Francis Darwin, *The Life and Letters of Charles Darwin*, p. 23.
[305] Quoted in Wells, *Icons of Evolution*, p.228.

Since its inception, the theory of common descent has, by definition, challenged the presumption that each species belongs to its own unique genealogy. Common descent therefore also necessarily challenged anthropocentric philosophies based on genealogical grounds. Nothing in the theory of common descent as such, however, threatened *intelligence*-based anthropocentrism. Intelligence (or, indeed, any superlative virtue that humans have assigned themselves) remained a viable basis for anthropocentrism. To be sure, absolutely nothing in the theory of common descent suggested that a species with superior intelligence was innately superior to other species. But neither did it as a rule contradict the possibility. Perhaps, as Darwin and Darrow implied, intelligence constituted a cosmic imperative toward which humans had long been evolving. Or maybe, as Wallace and Pope John Paul II suspected, God had endowed humans with intellect following their long history of morphological evolution.

Intelligence-based anthropocentrism has enjoyed a long history of widespread adherence. In fact, despite firsthand familiarity with his theory's genealogical implications, even Darwin frequently ranked humans superior to the rest of life on Earth, by virtue of their intelligence. "Man in the rudest state in which he now exists is the most dominant animal that has ever appeared on this earth," Darwin asserted. "He manifestly owes this immense superiority to his intellectual faculties."[306] Even though Darwin adamantly insisted that animals shared many of the same mental faculties with humans, he also believed that humans exhibited more intelligence than any other creature in the tree of life. "There can be no doubt," he wrote, "that the difference between the mind of the lowest man and that of the highest animal is immense."[307]

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[306] Darwin, *Descent of Man*, p. 63-64.
[307] Darwin, *Descent of Man,* p. 141.

Importantly, rather than simply observing that variation existed, Darwin chose one variant, intelligence, and afforded it more value than any other in nature. Though his sprawling tree of life would appear to utterly undermine the Great Chain of Being, Darwin happily promoted the scale when he placed humans atop it. "Man may be excused for feeling some pride at having risen, though not through his own exertions, to the very summit of the organic scale," he wrote in *The Descent of Man*.[308] Indeed, it was because of their intelligence that Darwin comfortably labeled humans "the wonder and glory of the Universe."[309]

Natural selection's co-discoverer, Alfred Russel Wallace, also assigned humans special status based on their minds. Though he differed with Darwin on natural selection's role in producing the human mind, Wallace believed that its appearance was sufficiently unique that it constituted a new stage in biological evolution. As Eiseley put it, Wallace portrayed "the human brain as a totally new factor in the history of life." With the emergence of humans, Wallace declared, "there had come into existence… a being in whom mind was of vastly greater importance than bodily structure."[310]

Across the pond and decades later, participants in the Scopes trial revealed many of the same biases. Participants on both sides of the aisle assumed that humans constituted the pinnacle of evolution. "The evolution of life that began in the ocean," Bryan told the court, "kept on evolving more and more and then *finally man was the climax*."[311] Indeed, even Tennessee's new biology textbook, adopted in 1925, demonstrated that the value placed on intelligence pre-dated Darwin. In fact, it revealed,

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[308] Darwin, *Descent of Man*, p. 643-644.
[309] Darwin, *Descent of Man*, p. 181.
[310] Eiseley, *Darwin's Century*, p. 305-307.
[311] *The World's Most Famous Court Trial,* p. 173. My italics

Linnaeus had employed anthropocentric labels when constructing his systema natura. "Because these animals excel the rest of the animal kingdom in brain development and in intelligence," the textbook explained, "this order of mammals is known as primates (from the Latin, meaning first)."[312]

The defense demonstrated many of the same beliefs, however. According to Winterton Curtis, a University of Missouri zoologist who submitted an affidavit in support of evolution at the Scopes trail, humans' significance in the universe rested upon their intelligence. "Man's claim to importance in the universe, revealed by science, lies not in the pretense that this planet was created for his convenience," he wrote, "but in the claim that he transcends the material universe in so far as he comprehends it."[313] Howard Morgan, one of Scopes's young pupils, testified that the instructor had taught that evolution was a long process, "the culmination of which was man." On cross-examination, Darrow asked the boy whether Scopes had taught that man was merely an animal. "No sir," Morgan replied, "he said man had a reasoning power; that these animals did not." Darrow himself remarked that "man is separated mentally by a wide gap from all other animals," and that evolution "reached(ed) the apex in man."[314]

For others, it was not just intelligence but each human's unique soul that legitimated anthropocentrism. Bryan, for example, complained that the Darwinist could not explain how humans alone among Earth's many species possessed spirituality. "They did not tell us where in this long period of time, between the cell at the bottom of the sea and man, where man became endowed with the hope of immortality," he told the court. Like Bryan, Judge Raulston also wanted to know whether Darwinists thought the soul

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[312] *The World's Most Famous Court Trial*, p. 215.
[313] Quoted in Tompkins, *D-Days at Dayton*, p. 154.
[314] *The World's Most Famous Court Trial,* p. 126, 127, 132, 189.

distinguished humans from animals. He asked Darrow if evolutionists "also believe that other animals are endowed with immortality." Darrow deferred. "I couldn't say exactly how all evolutionists believe," he answered.[315] Meanwhile, Kirtley Mather, Harvard geologist and witness for the defense, implied in his affidavit that humans were separated by both intellect *and* soul:

> If man has evolved from other forms of animal life by the continuous process of evolution, it is asked how can there be any difference between him and them? How can we believe that he has an immortal soul? Again, the appeal to facts makes it clear that somehow out of the continuity of process real differences have emerged. When the cow pauses on the hillside to admire the view, when the dog ceases to bay at the moon in order to construct a system of astronomy, then and not till [sic] then will we believe that there are no differences between man and other animals.[316]

Thirty years later, as society struggled to absorb the tree of life's implications, *Inherit the Wind* reiterated the belief that humans' intellect rendered them superior to other species. "Is it possible that something is holy to the celebrated agnostic?" the Bryan character asks of the Darrow character. "Yes!" the Darrow character responds, "the individual human mind… Why do you deny the one faculty that lifts man above all other creatures on the earth: the power of his brain to reason?"[317]

Thirty years after *that*, meanwhile, the creation-science movement continued to assign humans supreme status. According to Morris, "man is the highest of all creatures, and thus all other created systems must in some way be oriented man-ward." Indeed, according to Morris, "even the evolutionist recognizes that man is the highest product of the cosmic process."[318]

In fact, despite his rejection of common descent, Morris more readily grounded his anthropocentrism in human intellect than human genealogy. "The capacity for

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[315] *The World's Most Famous Court Trial*, p. 178, 189.
[316] Allen, *Bryan and Darrow at Dayton*, p. 115.
[317] Lawrence and Lee, *Inherit the Wind*, p. 83.
[318] Morris, *Scientific Creationism*, p. 35.

abstract, personalized thought and the ability to articulate and communicate that thought in symbolic sounds to other individuals is, no doubt, the most obvious difference between man and the animals," he declared. The creation model, he explained, "states explicitly that man is absolutely distinct from animals, and this would be especially true with respect to the all-important sphere of thought and speech." He considered it "probably the most important evolutionary gap of all of them, marking the unbridgeable gulf between man and the animals."[319]

Similar sentiments emerged during the McLean case. When rejecting common descent, for example, Chandra Wickramasinghe pointed to the supposedly vast mental gap between humans and monkeys: "We cannot accept that the genes for producing great works of art or literature or music, or developing skills in higher mathematics emerged from chance mutations of monkey genes," he opined.[320]

Intelligence-based anthropocentrism was not unique to critics of common descent, however. Many supporters of common descent found ways to reconcile the theory with their anthropocentric assumptions. For example, many theistic evolutionists allowed that common descent was true, but insisted that humans were so unique that God must have infused them with a soul at some point during the process. They believed that evolution yielded morphological variety, Geisler maintained, but "that God may have intervened once the body of the ape had developed in a hominid form and created a soul in it."[321]

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[319] Morris, *Scientific Creationism*, p. 184.
[320] "A Prepared Statement by Defense Witness Dr. Chandra Wickramasinghe," *McLean v. Arkansas Documentation Project*.
[321] "Transcript of deposition of Norman Geisler," *McLean v. Arkansas Documentation Project,* p. 77-78.

The theistic evolutionist thus believed that "you don't need God to divinely intervene until perhaps maybe to create the soul of man at the very end."[322]

Five years later, in 1987, Pope John Paul II endorsed a position not so dissimilar from the one Geisler described. His Holiness did not endorse the theory of common descent, but he cited the modern synthesis as evidence that the theory appeared true. "It is indeed remarkable that this theory has been progressively accepted by researchers, following a series of discoveries in various fields of knowledge," he told the Pontifical Academy of Sciences. "The convergence, neither sought nor fabricated, of the results of work that was conducted independently is in itself a significant argument in favour of the theory." He insisted that common descent did not contradict the scriptures, just so long as God infused humans with their souls. Even "if the human body takes its origin from pre-existent living matter," he wrote, "the spiritual soul is immediately created by God." Thus, unlike all other creatures on Earth, the Holy Father declared, humans have value as such. "The human individual cannot be subordinated as a pure means or a pure instrument, either to the species or society," he declared, "He has value *per se*." That value, moreover, stemmed from humans' unique intellect. "Man's likeness to God resides especially in his speculative intellect."[323]

Dover and the Deification of Intelligence

Like its judicial predecessors, the *Kitzmiller* case showcased humans' pride in their own intelligence. Jonathan Wells, an ID adherent who rejected common descent, argued that humans' unique mental capacities sufficiently distinguished them from their

[322] "Transcript of deposition of Norman Geisler," *McLean v. Arkansas Documentation Project,* p. 84.
[323] John Paul II, "Message to the Pontifical Academy of Sciences," *Quarterly Review of Biology*, vol. 72, no. 4 (Dec, 1987), p. 382-383.

supposed ancestors. "Design adherents," he wrote, point "to the abrupt appearance of the culture and patterns of behavior which distinguish man from the apes."[324] Philosopher of Biology Michael Ruse, meanwhile, explained how intelligence was vital to many Christians' acceptance of evolution. Theistic evolutionists do not insist that "we actually be the *Homo sapiens* that we are today," he explained, "but we must be humanlike."[325] But what does it mean to be *humanlike*? "If humans or their alternatives were not intelligent," Ruse explained, "God's design would not be satisfied. Totally nonintelligent beings would lack the freedom so crucial within the Christian system."[326]

With the ID movement, however, intelligence assumed an even greater importance. As its moniker suggests, for example, the *intelligent* design movement placed unprecedented emphasis on the vital role of intelligence in the universe. To be sure, most of the arguments in Dover concentrated on "design" rather the adjective perpetually attached to it, but even these arguments revealed certain presumptions about intelligence and its role in the universe. The argument for biological design was an ancient one, best articulated by Paley's watch example. As was alluded to above, Paley had drawn an analogy between objects of obvious human design (e.g., a watch) and natural objects that likewise exhibited all the presumed hallmarks of design. Centuries later, ID proponents drew the same conclusion. But arguments for biological design inevitably begged questions about the nature of the designer, and the answers that ID provided were not always consistent.

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[324] Kenyon and Davis, *Of Pandas and People*, p. 113.
[325] Ruse, *Can a Darwinian Be a Christian?,* p. 83.
[326] Michael Ruse, *Can a Darwinian Be a Christian?: The Relationship between Science and Religion,* (Cambridge: Cambridge University Press, 2000), p. 83.

Paley had reasoned that the designer of biological systems must be God. Many of the Dover school board members agreed. Most of the nation's leading ID proponents, however, rejected that conclusion. As a rule, they argued, the designer need share no attribute with any god, Christian or otherwise. Though Paley and Behe both concluded "that there had to be an independent designer," Miller testified during the trial, "Behe is unwilling to name the identity of that designer."[327] Indeed, though he acknowledged his personal belief that the designer was God, Behe defended the possibility that it was not. When asked whether it would be "accurate for people to claim or to represent that intelligent design holds that the designer was God," Behe responded, "No, that is completely inaccurate."[328] The designer, as Miller understood it, "could be a divine force, but it could be super intelligent space aliens from Mars or perhaps time traveling cell biologists going into the past from the future."[329] Indeed, divine or otherwise, the only requisite attribute that the designer must exhibit was supreme intelligence. That was it; that was all.

Of Pandas and People, the preeminent ID textbook, replaced references to God with references to a "master intellect."[330] Kenyon and Davis argued that life need not emerge from divine decree, nor even supernatural intervention. Rather, it merely exhibited the vestigial thumbprints of an intelligent planner. "The theory suggests that life was formed according to an intelligent plan by an intelligent agent," they wrote.[331]

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[327] "Kenneth Miller," *Kitzmiller vs. Dover Area School District.* September 26, 2005.
[328] "Michael Behe," *Kitzmiller vs. Dover Area School District.* October 17, 2005.
[329] "Kenneth Miller," *Kitzmiller vs. Dover Area School District.* September 26, 2005.
[330] Kenyon and Davis, *Of Pandas and People*, p. 85.
[331] Kenyon and Davis, *Of Pandas and People*, p. 41.

"Intelligent design maintains that only a consummate engineer could anticipate so effectively the total engineering requirements of an organism," the textbook added.[332]

During the trial, Behe laughed off his claim that the designers might be "space aliens and time-traveling biologists."[333] He dismissed the examples as "a tongue-in-cheek effort to show people that, you know, intelligent design does not exclude natural explanations."[334] However, if the intelligent designer of all life need not be understood as God per se, questions remained about the designer's other attributes. "What kind of intelligent agent was it?" *Pandas* asked. "On its own, science cannot answer this question; it must be left to religion and philosophy."[335]

Of course, ID proponents had pragmatic reasons to deny that their theory invoked God. Decades of legal precedent had demonstrated that anti-evolution statutes drafted with religious intent violated the Establishment Clause. ID's insistence that life's designer need not necessarily be God was clearly intended to circumvent judicial precedent, but its insistence on intelligence was telling nonetheless.

In 1925, anti-evolutionists understood that the designer was God, specifically the God of the scriptures. The Butler Act, after all, criminalized any theory that "denies the Story of the Divine Creation of man as taught in the Bible."[336] By 1981, anti-evolutionists had shed all explicit references to God, but continued to make suspiciously Biblical claims, including the "relatively recent inception of the earth" and the past "occurrence of a worldwide flood."[337] By 2005, anti-evolutionists had whittled their God

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[332] Kenyon and Davis, *Of Pandas and People*, p. 71.
[333] "Michael Behe," *Kitzmiller vs. Dover Area School District*. October 17, 2005.
[334] "Michael Behe," *Kitzmiller vs. Dover Area School District*. October 17, 2005.
[335] Kenyon and Davis, *Of Pandas and People*, p. 7
[336] 1925 Tennessee House Bill 185.
[337] Act 590 of 1981. General Acts, 73rd General Assembly, State of Arkansas.

down to what they considered His single most important attribute: intelligence. "The concept of design implies absolutely nothing about beliefs normally associated with Christian fundamentalism, such as a young earth, a global flood, or even the existence of the Christian God," Kenyon and Davis wrote. "All it implies is that life had an intelligent source."[338] ID's assumptions rested upon a "religion of human intelligence that saw the earth as man's subject, available to minister to his needs and, when thoroughly rationalized and made over, to testify to his unique divinity."[339] The sanctity of intelligence was thus preserved. Indeed, it was deified.

In its post-trial findings of fact, the plaintiffs dismissed the defendants' suggestion that they meant the designer to be anyone but God. "The only apparent difference between the argument made by Paley, and the argument for intelligent design, as expressed by Behe and Minnich," the plaintiffs argued, "is that intelligent design's 'official position' does not acknowledge that the designer is God. However, this seems to be a tactical position only."[340] The plaintiffs continued, complaining that "anyone familiar with western religious thought would immediately make the association that the unnamed designer is God."[341] Indeed, they pointed out, the entire court case had been wrought by fundamentalist school board members who adopted an ID façade for constitutional reasons.

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[338] Kenyon and Davis, *Of Pandas and People*, p. 161.
[339] Worster, *Nature's Economy*, p. 176.
[340] "Findings of Fact," *Kitzmiller vs. Dover Area School District.*
[341] "Findings of Fact," *Kitzmiller vs. Dover Area School District*.

The Hammer Drops

When the anti-ID members of the board resigned in protest, they were replaced by candidates friendly to the board's position on ID. As a result, when the *Kitzmiller* case adjourned, every sitting member on the school board supported ID. Just days after testimony wrapped up, and weeks before Judge Jones revealed his decision, Dover held its scheduled school-board elections. Eight of the nine members, each of whom had supported ID, were up for re-election. (The ninth member, Bill Buckingham, had resigned because of health problems prior to the election.) In a tellingly sharp rebuke, every single board member was voted out of office, each replaced by a candidate "who argued that the [ID] discussion doesn't belong in science class."[342] The election results made national headlines, and famously irritated televangelist Pat Robertson. "I'd like to say to the good citizens of Dover," he announced on his daily television show, "if there is a disaster in your area, don't turn to God -- you just rejected Him from your city." Despite ID's protestations to the contrary, Robertson presumably conflated ID's mission with Christianity's. "Just remember," he warned the citizens of Dover, "you just voted God out of your city."[343]

Six weeks later, on December 20, 2005, Judge Jones issued his much anticipated opinion in the *Kitzmiller* case. He ruled that ID was not science but religion and that it had no place in science classrooms. "The ID policy," he announced, "constitutes an establishment of religion prohibited by the First Amendment to the United States

[342] Jill Lawrence, "'Intelligent Design' Backers Lose in Pennsylvania," *USA Today*, November 9, 2005.
[343] Alan Elsner, "Robertson Says Town Rejects God," *Washington Post*, November 11, 2005.

Constitution." He dismissed ID as repackaged creationism. "The evidence at trial demonstrates that ID is nothing less than the progeny of creationism," he wrote.[344]

Judge Jones cited two versions of *Pandas*. The first, drafted before *Edwards vs. Aguillard* in 1987, defined creation as "various forms of life that began abruptly through an intelligent agency with their distinctive features intact – fish with fins and scales, birds with feathers, beaks, and wings, etc." References to "creationism" were removed following the *Edwards* decision, replaced by the phrase "intelligent design." Tellingly, however, ID was likewise defined as "various forms of life that began abruptly through an intelligent agency with their distinctive features intact – fish with fins and scales, birds with feathers, beaks, and wings, etc."[345]

ID proponents had also failed to convince the judge that ID's implied designer was not an inherently religious concept. "Anyone familiar with Western religious thought would immediately make the association that the tactically unnamed designer is God," the judge wrote.[346] "Although proponents of the IDM [intelligent design movement] occasionally suggest that the designer could be a space alien or a time-traveling cell biologist," Judge Jones observed, "no serious alternative to God as the designer has been proposed by members of the IDM." Moreover, he asserted, "the writings of leading ID proponents reveal that designer postulated by their argument is the God of Christianity."[347]

Jones was especially critical of the board members who instigated the entire affair. "The Dover School Board members' testimony," he wrote, "was marked by

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[344] Judge Jones, "Memorandum Opinion," p. 2, 29.
[345] Judge Jones, "Memorandum Opinion," p. 32-33.
[346] Judge Jones, "Memorandum Opinion," p. 25.
[347] Judge Jones, "Memorandum Opinion," p. 25-26.

selective memories and outright lies under oath." He preemptively rejected any suggestion that his was an activist court, blaming the board instead. "This case came to us as the result of the activism of an ill-informed faction on a school board," Judge Jones wrote, "aided by a national public interest law firm eager to find a constitutional test case on ID, who in combination drove the Board to adopt an imprudent and ultimately unconstitutional policy." He scolded the board for its "breathtaking inanity" and blamed it for the "utter waste of monetary and personal resources" expended during the trial.[348]

Postscript

ID proponents dismissed Judge Jones's decision as biased and ill-informed. "Judge Jones decided to act as though it was the 'intelligence design movement,' not the Dover School Board, that was on trial," the Discovery Institute asserted in a hastily prepared response titled *Traipsing into Evolution*. Not surprisingly perhaps, ID proponents began to distance themselves from their defeat in Dover. "The nation's leading ID proponents neither sought nor supported the policy adopted by the Dover school board," the authors of *Traipsing* explained. The Discovery Institute, dismissing Dover's school board members as uninformed and blatantly religious, wrote that "the instigators of the policy were supporters of Biblical creationism, not intelligent design"[349]

While the immediate reaction from ID proponents indicated that they were not yet prepared to give up the fight, their setback must have been a deflating one. The movement's leaders had publicly withdrawn their complaints against the theory of common descent, yet they still suffered defeat in the courtroom. History suggests,

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[348] Judge Jones, "Memorandum Opinion," p. 46, 136-138.
[349] David Dewolf, John West, Casey Luskin and Jonathan Witt, *Traipsing into Evolution: Intelligent Design and the Kitzmiller vs. Dover Decision* (Seattle: Discovery Institute, 2006) p. 11, 8.

however, that the anti-evolution movement is far from dead. Indeed, anthropocentrism has likewise proven itself both stubborn and resilient. No longer able to legitimately assert their human-centered philosophies on genealogical grounds, many continued to do so on intellectual grounds.

Conclusion

These three court cases provide a window on, among other things, the American judiciary's shifting interpretation of the Establishment Clause in America from 1925 to 2005. During the Scopes trial, it was not yet clear that the First Amendment was made applicable to states by the Fourteenth Amendment. Accordingly, counsel did not invoke the Establishment Clause when defending Scopes. They nevertheless invoked a similar passage from the Tennessee Constitution. John Neal, the lone Tennessean assisting the defense, cited the state constitution's provision that "no preference shall ever be given by law, to any religious establishment or mode of worship." Himself a former judge, Neal told the court that he considered the freedom from religion "the most sacred provision of the constitution of Tennessee." He argued, moreover, that the Butler Act violated the state constitution because it "made mandatory the teaching of a particular doctrine that comes from a particular religious book."[350]

Perhaps not surprisingly, Judge Raulston disagreed. "The court believes that any religious society that is worthy of the name should believe in God and believe in divine guidance," he announced from the bench.[351] Despite the statute's explicit reference to the Bible, Judge Raulston dismissed the defense's assertion that the Butler Act privileged a particular religious outlook. "I fail to see how this act in any way interferes or in the least restrains any person from worshipping God in the manner that best pleaseth him," he told the courtroom. "It gives no preference to any particular religion or mode of worship."[352]

In 1968, however, the United States Supreme Court ruled Arkansas's very similar statute unconstitutional because it violated the Establishment Clause. "The law must be

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[350] *The World's Most Famous Court Trial*, p. 52.
[351] *The World's Most Famous Court Trial*, p., 96.
[352] *The World's Most Famous Court Trial*, p. 102.

stricken," Justice Fortas wrote for the unanimous majority in *Epperson vs. Arkansas*, "because of its conflict with the constitutional prohibition of state laws respecting an establishment of religion or prohibiting the free exercise thereof."[353] In the forty years since, courts have consistently struck down any anti-evolution measure that it deems religiously inspired. Thus, in order to challenge Darwinian evolution in public classrooms, anti-evolutionists reorganized their public façade several times in an effort to circumvent the Establishment Clause. In the 1980s, for example, the nation's leading anti-evolutionists shed explicit references to God. Even so, they were again rebuked by the judiciary, which deemed the creationists' insistence on a "young Earth" and a "worldwide flood" suspiciously Biblical. By the 2000s, leading anti-evolutionists merely insisted that biological systems exhibited the hallmarks of design. The designer need not be God, nor even supernatural, they assured the court.

Anti-evolutionists not only adhered to shifting interpretations of the Establishment Clause, but their own anthropocentric inclinations changed. In the 1920s, John Scopes stood accused of teaching evolution. His resultant trial drew unprecedented attention to evolution, attention that was frequently expressed in monkey motifs. Anti-evolutionists denounced the suggestion that humans were kin to the monkeys, even though evolution likewise implied a far more radical family tree. The effort to protect humanity's essentialist integrity stigmatized apes and monkeys precisely because they fell just beyond the human boundary. The Scopes trial became a smorgasbord of monkey-themed jokes and memorabilia.

In subsequent years, common descent found increasing favor with American biologists. The modern synthesis ensured common descent's essential place in modern

[353] *Epperson vs. Arkansas*, 393 U.S. 97 (1968).

biology, while BSCS textbooks exposed new generations to common descent. In 1968, meanwhile, the United States Supreme Court even ruled Arkansas's prohibition on common descent unconstitutional because it violated the Establishment Clause of the First Amendment.

These radically different conditions necessarily colored the way anthropocentrists responded to the theory of common descent. In 1981, Arkansas passed a law mandating that whenever evolution was taught, a Genesis-friendly theory known as "creation-science" must also be taught. A host of Arkansan parents and civic organizations filed suit against the state, thereby allowing the evolution debate back in the courtroom. Interestingly, however, the anti-evolutionists' rhetoric was less anthropocentric than it had been sixty years earlier. While many continued to obsess over monkeys, an increasing number were more concerned with Darwinian evolution's explanation for the origin of life. Because it potentially implicated all extant organisms, rather than just monkeys and humans, the debate over the origin of life implicitly recognized the tree of life's breadth. As such, the debate unwittingly signaled anthropocentrism's first hesitant concessions. Despite these changes, however, the court ruled Arkansas's statute unconstitutional because it too violated the Establishment Clause.

By the turn of the millennium, the theory of common descent enjoyed unprecedented success. It nevertheless endured a new round of criticism from advocates of intelligent design (ID). Like their creationist predecessors, ID proponents claimed to disavow any religious motivation. Other accommodations were unique to the ID movement, however. For example, many leading anti-evolutionists publicly recognized humanity's genealogical connection to other species in order to expedite arguments

against natural selection. As more people abandoned genealogical arguments for anthropocentrism, however, they placed increased emphasis on humans' supposedly superlative intelligence. In so doing, they preserved anthropocentrism, but on new grounds. Although intelligence-based anthropocentrism had existed long before 2005, the ID movement imbued it with more importance than ever. Furthermore, because common descent was silent on the relative value of intelligence, both critics *and* supporters of common descent were apt to promote intelligence-based anthropocentrism. The court, meanwhile, ruled ID unconstitutional because its emphasis on a "master intellect" too closely resembled previous emphases on God, a violation of the Establishment Clause.

It is important to remember, however, that while legal assaults against common descent took increasingly accomodationist positions, the public generally did not follow suit. Despite its integral place in biology, its access to American classrooms, and concessions from its former detractors, the theory of common descent failed to convert the masses. In Gallup polls take over the past twenty-five years, 45 percent of sampled Americans consistently confirmed their belief that "God created human beings pretty much in their present form at one time within the last 10,000 years." During that same period, meanwhile, no more than 13 percent of the population accepted an evolutionary process in which God had no part.[354] For many Americans, accepting other species as one's kin remained a troublesome adjustment.

Indeed, although the theory of common descent has found great success in science, it remains a point of serious contention for many people. Those of us struggling

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[354] Frank Newport, "American Beliefs: Evolution vs. Bible's Explanation of Human Origins," *Gallup News Service*, March 8, 2006.

to accommodate common descent may take comfort in knowing that the theory need not destroy human dignity. Darwin himself did not believe that his theory debased humans, but argued instead that it "ennobled" all living things.[355] Many environmental ethicists have seized upon the idea. According to historian Donald Worster, "the most important spokesman for the biocentric attitude in ecological thought was Darwin himself." In the Darwinian scheme of things, he wrote, "evolution of moral behavior… becomes a self-transcending sense of mercy, sympathy, and kinship with all of animate existence."[356] According to this interpretation, common descent need not annihilate our ethical assumptions; it merely insists that we extend our animate brethren the same courtesies so long reserved for human beings. I freely confess that true biocentrism would entail a revolution unprecedented in human thought. But that does not mean we should reject it out of hand. Instead, we may find it advantageous when recoiling from our new family tree to heed Darwin's simple epitaph: "Love for all living creatures [is] the most noble attribute of man."[357]

[355] Darwin, *The Origin of Species*, sixth edition, p. 452.
[356] Worster, *Nature's Economy*, p. 180, 182.
[357] Darwin, *The Descent of Man*, p. 141.

BIBLIOGRAPHY

Primary Sources

Abingdon School District v. Schempp [374 U.S. 203]. June 17, 1963.

Act 590 of 1981. General Acts, 73rd General Assembly of Arkansas. March 19, 1981.

Amendment to House Bill No. 197. Oklahoma, 1923.

"Ban on Teaching of Evolution Overturned by Arkansas Judge." *New York Times*. May 28, 1966.

Behe, Michael. *Darwin's Black Box: the Biochemical Challenge to Evolution*. New York: Free Press, 1996.

"Broadcast of Scopes Trial Unprecedented." *Chicago Tribune*. July 5 1925.

Bryan, William Jennings. "Bryan Flays Darwinism." *New York Times*, March 6, 1922.

----------. "Bryan Hails Radio as Aid to his Party." *New York Times*. September 3, 1922.

----------. "God and Evolution." *New York Times*. February 26, 1922.

----------. *In His Image*. New York: Fleming Revell and Company, 1922.

----------. *Speeches of William Jennings Bryan*. New York: Funk and Wagnalls, 1911.

Darwin, Charles. *The Autobiography of Charles Darwin*, edited by Francis Darwin. Amhert: Prometheus Books, 2000.

----------. *The Descent of Man*. New York: New York University Press, 1989.

----------. *The Origin of the Species*, sixth edition. New York: Collier and Son, 1909.

----------. *On the Origin of Species: A Facsimile of the First Edition*. Cambridge: Harvard University Press, 1964.

----------. *Charles Darwin's Notebooks*, edited by Paul Barrett, Peter Gautrey, Sandra Herbert, David Kohn, and Sydney Smith. Cambridge: Cambridge University Press, 1987.

Darrow, Clarence. "Darrow Asks W.J. Bryan to Answer These." Chicago Tribune, July 4, 1923.

----------. *The Story of my Life*. New York: De Capo Press, 1932.

Darwin, Francis (editor). *The Life and Letters of Charles Darwin, including an Autobiographical Chapter*. New York: Appleton and Company, 1896.

---------- (editor). *More Letters of Charles Darwin*. London: J. Murray. 1903.

Dewolf, David; West, John; Luskin, Casey; and Witt, Jonathan. *Traipsing into Evolution: Intelligent Design and the Kitzmiller vs. Dover Decision*l Seattle: Discovery Institute, 2006.

Dobzhansky, Theodosious. *Genetics and the Origin of Species*. New York: Columbia University Press, 1937.

----------. "Nothing in Biology Makes Sense Except in the Light of Evolution." *American Biology Teacher* vol. 35. 1973.

Edwards v. Aguillard [482 U.S. 578].

Elsner, Alan. "Robertson Says Town Rejects God." *Washington Post*. November 11, 2005.

Epperson v. Arkansas [393 U.S. 97].

House Bill 185. Tennessee, 1925.

House Concurrent Resolution Number 7. Florida, 1923.

Huxley, Julian. *Evolution: the Modern Synthesis*. New York: Hafner Press, 1974.

"Initiated Act No. 1." Arkansas Statutes 80-1267, 1268. Arkansas 1928.

John Paul II. "Message to the Pontifical Academy of Sciences." *Quarterly Review of Biology, vol. 72, no. 4. Dec, 1987.*

Johnson, Phillip. *Darwin on Trial*. Washington: Regnery, 1991.

Kenyon, Dean and Davis, Percival. *Of Pandas and People: the Central Question of Biological Origins*, second edition. Richardson, TX: Foundation for Thought and Ethics, 1993.

Kitzmiller, et al. v. Dover Area School District, et al. [400 F. Supp. 2d 707]. Transcripts available at: <http://www.talkorigins.org/faqs/dover/kitzmiller_v_dover.html>.

Lawrence, Jerome and Lee, Robert E. *Inherit the Wind*. New York: Bantam Books, 1955.

Lawrence, Jill. "'Intelligent Design' Backers Lose in Pennsylvania." *USA Today*. November 9, 2005.

"Louisiana Orders Schools to Teach Creationism." *Los Angeles Times*. July 22, 1981.

Lovejoy, Arthur. *The Great Chain of Being: A Study of the History of an Idea*. Cambridge: Harvard University Press, 1964.

Mayr, Ernst. *Systematics and the Origin of Species: from the Viewpoint of a Zoologist*. New York: Dover Publication Inc., 1942.

McLean v. Arkansas Board of Education [529 F. Supp. 1255, 1258-1264]. Transcripts available at: <http://www.antievolution.org/projects/mclean/new_site/index.htm>.

Mencken, H.L. *A Religious Orgy in Tennessee: A Reporter's Account of the Scopes Monkey Trial*. New York: Melville House, 2006.

"Mississippi Voids Evolution Curb." *New York Times*. December 22, 1970.

"'Monkey Law' Ousts Tennessee Teacher." *New York Times*. April 15, 1967.

Morris, Henry. *Scientific Creationism: Public School Edition*. San Diego: Creation-Life Publishers, 1974.

Newport, Frank. "American Beliefs: Evolution vs. Bible's Explanation of Human Origins." *Gallup News Service*. March 8, 2006.

Orwell, George. *1984*. New York: Signet Classic, 1977.

Osborn, Henry Fairfield. "Evolution and Religion." *New York Times*. March 5, 1922.

Scopes, John Thomas. *Center of the Storm: Memoris of John T. Scopes*. New York: Holt, Rinehart and Winston, 1967.

Scopes v. State of Tennesse. 154 Tenn. 105, 289 S. W. 363. January 17, 1927.

"Sees National Victory Against Evolution." *New York Times*. February 10, 1926.

Simpson, George Gaylord. *Tempo and Mode in Evolution*. New York: Columbia University Press, 1944.

Stebbins, George Ledyard. *Variation and Evolution in Plants*. New York: Columbia University Press, 1950.

Strobel, Lee. "Evolution Law Creates a New Scopes Trial." *Chicago Tribune*. December 6, 1981.

"Suit to Challenge Louisiana Law on Teaching Creation." *Los Angeles Times*. December 2, 1981.

Tempest, Rone. "'Creation Science' Law Under Legal Fire." *Los Angeles Times*. December 7, 1981.

Torrey, Reuben Archer. *The Fundamentals*. Grand Rapids: Baker Books, 2003.

"The Wedge." Center for the Renewal of Science and Culture. Seattle: Discovery Institute, 1999.

Wells, Jonathan. *Icons of Evolution: Science or Myth? Why Much of What we Teach about Evolution is Wrong*. Washington: Regnery Publishing, 2000.

The World's Most Famous Court Trial, Tennessee Evolution Case: a Complete Stenographic Report of the Famous Court Test of the Tennessee Anti-evolution Act, at Dayton, July 10 to 21, 1925, including Speeches and Arguments of Attorneys. Cincinnati: National Book Company, 1925.

Secondary Sources

Allen, Leslie. *Bryan and Darrow at Dayton.* New York: Arthur Lee and Company, 1925.

Beckwith, Francis. "Science and Religion Twenty Years after McLean vs. Arkansas: Evolution, Public Education, and the New Challenge of Intelligent Design." *Harvard Journal of Law & Public Policy*, 26. (2003): 456-498.

Bowler, Peter. *The Eclipse of Darwinism: Anti-Darwinian Evolution Theories in the Decades around* 1900. Baltimore: Johns Hopkins University Press, 1983.

Caudill, Edward. "The Roots of Bias: an Empiricist Press and Coverage of the Scopes Trial." *Journalism Monographs*. Columbia, SC: Association for Education in Journalism and Mass Communication, 1989.

Caudill, Edward; Larson, Edward; and Mayshark, Jesse Fox. *The Scopes Trial: a Photographic History*. Knoxville: University of Tennessee Press, 2000.

de Camp, Lyon Sprague. *The Great Monkey Trial*. New York: Doubleday, 1968.

Dawkins, Richard. "Inferior Design." Book review of Michael Behe's *Searching for the Edge of Evolution*. *New York Times*. July 1, 2007.

Dembski, William. "Intelligent Design's Contribution to the Debate over Evolution: a Reply to Henry Morris." *DesignInference.com*. February 1, 2005.

Eisley, Loren. *Darwin's Century*. New York: Doubleday and Company, 1958.

Ferguson, Robert. *The Trial in American Life*. Chicago: Chicago University Press, 2007.

Foucault, Michel. "The Subject and Power." *Critical Inquiry* 8 No. 4. (Summer 1982): 777-795.

Ginger, Ray. *Six Days or Forever? Tennessee vs. John Thomas Scopes*. Oxford: Oxford University Press, 1958.

Gould, Stephen Jay. *Wonderful Life: the Burgess Shale and the Nature of History*. New York: Norton and Company, 1989.

Grobman, Arnold. "Science Curriculum Study in America." *The Changing Classroom: the Role of the Biological Sciences Curriculum Study*. Garden City: Doubleday, 1969.

James, Frank. "An 'Open Clash between Science and the Church'?: Wilberforce, Huxley, and Hooker on Darwin at the British Association, Oxford, 1860." *Science and Beliefs: From Natural Philosophy to Natural Science, 1700-1900.* Burlington: Ashgate, 2005.

"Judgment Day: Intelligent Design on Trial." *NOVA*. Public Broadcasting Station. November 13, 2007.

Kitcher, Philip. *Living with Darwin: Evolution, Design, and the Future of Faith*. Oxford: Oxford University Press, 2007.

Kohn, David (editor). *The Darwinian Heritage*. Princeton, Princeton University Press, 1985.

Lamoureux, Denis. "Evangelicals Inheriting the Wind: the Phillip E. Johnson Phenomenon." *Darwinism Defeated? the Johnson-Lamoureux Debate on Biological Origins*. Vancouver: Regent College Publishing, 1999.

Larson, Edward. *Summer for the Gods: the Scopes Trial and American's Continuing Debate over Science and Religion*. New York: Basic Books, 1997.

Lesiak, Christine. *Monkey Trial*. Alexandria: PBS Video, 2002.

Lienesch, Michael. *In the Beginning: Fundamentalism, the Scopes Trial, and the Making of the Antievolution* Movement. Chapel Hill: University of North Carolina Press, 2007.

Marietta, Don. *For People and the Planet: Holism and Humanism in Environmental Ethics*. Philadelphia: Temple University Press, 1994.

Mayr, Ernst and Provine, W.B. (editors). *The Evolutionary Synthesis: Perspectives on the Unification of Biology*. Cambridge: Harvard, 1980.

Mayr, Ernst. *Evolution and the Diversity of Life: Selected Essays*. Cambridge: Belknap Press, 1976.

----------. *This is Biology: the Science of the Living World*. Cambridge: Belknap Press, 1998.

Miller, Kenneth. *Finding Darwin's God: a Scientist's Search for Common Ground between Evolution and God*. New York: Cliff Street Books / Harper Collins, 1999.

Moore, Randy Moore. *Evolution in the Courtroom: Reference Guide*. Santa Barbara: ABC-CLIO, 2002.

Moran, Jeffrey. *The Scopes Trial: a Brief History with Documents*. New York: Bedford, 2002.

Ruse, Michael. *Can a Darwinian be a Christian?: The Relationship between Science and Religion*. Cambridge: Cambridge University Press, 2000.

"Science, Evolution, and Creationism." National Academy of Sciences. 2008.

Scott, Eugenie. "Antievolution and Creationism in the United States." *Annual Review of Anthropology,* Vol. 26. 1997.

Settle, Mary Lee. *The Scopes Trial: The State of Tennessee vs. John Thomas Scopes*. New York: Watts, 1972.

Tompkins, Jerry (Editor). *D-Days at Dayton: Reflections on the Scopes Trial*. Baton Rouge: Louisiana State University Press, 1965.

Wolfe, Cary. *Animal Rites: American Culture, the Discourse of Species, and Posthumanist Theory*. Chicago: Chicago University Press, 2003.

Worster, Donald. *Nature's Economy: the Roots of Ecology*. San Francisco: Sierra Club, 1977.