

The “Age of Rock” versus the “Rock of Ages”:
Naturalism, Social Darwinism, and Fundamentalism
in the Scopes Monkey Trial

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Greek mythology once predominated the highest forms of culture known to man. Myths of how fire came to be in the hands of humans, or how the peacock got its spotted feathers were beloved cultural tales of origins.¹ With the decline of the ancient cultures, new ones blossomed in their place. However, the question of origin has remained a pertinent, central question of each culture, no matter how modern. The question of origin dictates who a person believes himself to be, where he believes himself to be going, and what he believes himself to be doing. The question of origin is perhaps the most important question of culture itself because it is the question of *τελος* itself.² It has been a natural inquiry of Man since the beginning of time. This inquiry, because it is all-encompassing, is ultimately an inquiry of truth. Truth can be found in several disciplines and practical applications—through theology, through science, through musical notation. However, in the Scopes trial, truth was sacrificed for the sake of political and scientific narrative. Naturalism attempted to answer this question and provided the foundation for social Darwinism.

Naturalism was not new to the scene in the American Progressive Era. Indeed, the study of nature itself is as old as nature itself. The origins of Naturalism begin in the different conceptions of human personhood. Naturalism is the essential belief that there is no transcendent quality to the natural world, including humanity. It suggests, therefore, that there is nothing outside the of natural existence worth living for—no purpose, no ultimate goal, no reason to live outside one’s own self. Thus, natural selection is the “invisible hand” of naturalism. If there is indeed no transcendent purpose, no reason for living outside of one’s self, then Nature can take it upon herself to select the best and the brightest to live, and the weak to die off.³

Naturalism, then, is not just a scientific ideology, but a worldview; and the idea of natural selection is its handmaiden. Naturalism is the established framework, and natural selection is its method. As historian Conway Zirkle rightly surmises, “Natural selection thus provided an alternate explanation for the facts generally cited as evidences of teleology.”⁴ As William Jennings Bryan put it, natural selection was indeed the “the law of hate—the merciless law by which the strong crowd out and kill off the weak...”⁵ The lack of purpose created by belief in a lack of transcendence contributes to the idea of personhood.

This dawn of Naturalism had no greater cultural outflow than the idea of social Darwinism. Taking the United States (and many parts of the world) by storm in the late 19th and early 20th centuries, social Darwinism represented the idea that the human race could become better in the here and now. The promise of Sir Francis Galton, the man who coined the term “eugenics,” rang true to many in the early 1900s, that “if the twentieth part of the cost and pains were spent in measures for the improvement of the human race that is spent on the improvement of the breed of horses and cattle, what a *galaxy of genius* might we not create!”⁶ The genius of galaxy was a promise many could not pass up.

¹ Thomas R. Martin, *Ancient Greece: From Prehistoric to Hellenistic Times*, Second Edition (New Haven, CT: Yale University Press, 2013), 7, 28, 119.

² *Τελος*, or “telos” transliterated in English, refers to the idea of purpose or end. It most often implies an overarching purpose or reason for living, doing, or being.

³ Adam Smith, *Wealth of Nations* (Amherst, NY: Prometheus Books, 1991), 351-2.

⁴ Conway Zirkle, “Natural Selection before the ‘Origin of Species,’” *Proceedings of the American Philosophical Society*, 84, no. 1. (April 25, 1945): 74.

⁵ Edward B. Davis, “Science and Religious Fundamentalism in the 1920s,” *American Scientist Research Triangle Park* 93, no. 3, (May/June 2005): 254.

⁶ Italics added. G.K. Chesterton, *Eugenics and Other Evils* (London: Cassell, 1922), 18.

It was into this world that the catalyst for the *Scopes* trial, the Butler Bill, was born. In 1922, Tennessee passed a law asserting that evolution should be taught in schools.⁷ The Butler Bill was a reaction to this. In March 1925, the Butler Bill was passed, and it aimed at “prohibiting the teaching of the Evolution Theory in all the Universities, Normals and all other public schools of Tennessee, which are supported in whole or in part by the public school funds of the State, and to provide penalties for the violations thereof.”⁸ This bill was but one of several examples of the Fundamentalist pushback against not only Naturalism, but social and scientific Darwinism.⁹

Fundamentalism, a third and equally important movement as Naturalism and social Darwinism, has become quite the amorphous term even in the modern understanding. Though it was a movement seen around the world, because of the regional, ethnic, and denominational diversity in America, it was a distinct movement in the states.¹⁰ As George Marsden surmised when writing of the American experience, “fundamentalism” refers to a “militantly antimodernist Protestant evangelicalism,” which was generally more popular in rural, Southern areas.¹¹ However, Marsden goes on to say that Fundamentalism had four unifying tenants: the theology of premillennial dispensationalism, the Holiness revival, the perception that traditional beliefs had been lost in the culture, and the blending of various views of how Christianity should be interacting with the culture around it.¹² Though united in its militarism, Fundamentalism was often varied in its manifestations. As Marsden further notes, “Fundamentalism was a mosaic of divergent and sometimes contradictory traditions and tendencies that could never be totally integrated.”¹³ While several disagreements about dispensationalism, millennialism, and premillennialism ran rampant, Fundamentalism was anchored by faith-inspired beliefs about cultural phenomena.¹⁴

To further murk the Fundamentalist waters, two views of curing social ills on the societal level were present. These included Revivalism—evoking the idea of spiritual awakening as was seen in the early years of America—pitted against the Social Gospel—a pragmatic approach to fix society with the tenants, and without the Spirit, of Christianity.¹⁵ Before World War I, the Social Gospel was simply an economic idea, but as the United States moved toward intervention, the Social Gospel, under the leadership of Walter Rauschenbusch, transitioned into “demands and social righteousness and fraternity on the largest scale.”¹⁶ The Social Gospel’s influence on good works over Christian repentance haunted Fundamentalists as a half-truth, and it continued to gain a prominent place in the Progressive Era culture.¹⁷ Fundamentalism, then, was a reaction to a sense of an impending loss of Christian influence in the culture.

⁷ House Bill No. 185, *State Of Tennessee, Sixty - Fourth General Assembly*, March 13, 1925, <http://law2.umkc.edu/faculty/projects/ftrials/scopes/tennstat.htm>.

⁸ House Bill No. 185.

⁹ Adam Laats, *Fundamentalism and Education in the Scopes Era: God, Darwin, and the Roots of America’s Culture Wars* (New York: Palgrave MacMillan, 2010), 64-5.

¹⁰ Marsden, *Fundamentalism and American Culture*, 222-3.

¹¹ *Ibid.*, 4. See also Laats, *Fundamentalism and Education in the Scopes*, 12, 186.

¹² Daniel T. Rodgers, *Contested Truths: Keywords in American Politics Since Independence* (New York: Basic Books, 1987), 11.

¹³ Marsden, *Fundamentalism and American Culture*, 43.

¹⁴ *Ibid.*, 49, 56, 141.

¹⁵ *Ibid.*, 11, 90-1.

¹⁶ Samuel Goldman, *God’s Country: Christian Zionism in America* (Philadelphia, Pennsylvania: University of Pennsylvania Press, 2018), 100.

¹⁷ Marsden, *Fundamentalism and American Culture*, 91.

Bryan harnessed both a biblical worldview and a populist mindset to argue against evolution throughout the early 1900s. Coming out of semiretirement, Bryan traveled the country beginning in 1904 with his speech, “The Prince of Peace” and continued in 1921 delivering one of two speeches: one called “The Menace of Darwinism,” and the other “The Bible and Its Enemies.”¹⁸ He warned of the teaching of Darwinism in the former, saying that it undermined faith first in the inspiration of Scripture, second in the miracles described in Scripture, third in the virgin birth of Christ, fourth in Christ as Son of God and Savior of the world, and fifth in the existence of a personal God.¹⁹ In essence, then, Bryan challenged his listeners to ask the question: how much of the Bible can one not believe and still claim to be a Christian?

Defenses of fundamentalism came not only from proponents like Bryan, but also from bills that were passed in several states. The Butler Bill was hardly the only one of its kind. Indeed, Kentucky was the first to consider fundamentalist-inspired legislation in 1922, followed by a similar bill in South Carolina in the same year.²⁰ In 1923, several states followed suit including Georgia and Texas.²¹ While one resolution in Georgia was successful, two bills in Texas were stalled on the Senate calendar.²² In that same year, West Virginia, Alabama, Iowa, and Tennessee all took steps toward Fundamentalist principles in education. Oklahoma, California, and North Carolina soon followed up with committees, bills and warnings of their own against teaching that defied the Scripture.²³ In 1924 the U.S. Congress passed legislation which prohibited Washington, D.C. teachers from teaching something that caused “disrespect of the Holy Bible.”²⁴ Indeed, between 1920 and 1925, Fundamentalism “took shape and “flourished” in both major battles between denominations who denied Fundamentalist teaching, and legislation.²⁵ This victory would continue with the Butler Bill.

Tennessee passed the Butler Bill on March 23, 1925.²⁶ The bill stipulated that evolution had to be banned from schools, and that further, no theory that presented a challenge to the creation story of Genesis could be taught.²⁷ This idea was in keeping with New Testament scholar and personal friend of Bryan, J. Gresham Machen, who believed that if Christianity was indeed subordinated to culture, then the solution must be the “consecration of culture” itself.²⁸ Machen was an unlikely friend of Bryan for many reasons, not the least of which included his superior education to Bryan (and several other prominent Fundamentalists) as well as his allegiance to liberal politics.²⁹ However, even Machen identified that there was an issue with the Progressive mindset. He said in a statement to the Testimony before the House & Senate Committees on the Proposed Department of Education in 1926, “A great many educators, I think, have this notion that it is important to be doing something, to be going somewhere. They are interested in progress, and they do not seem to care very much in what direction the progress

¹⁸ Kristy Maddux, “Fundamentalist Fool or Populist Paragon?: William Jennings Bryan and the Campaign Against Evolutionary Theory,” *Rhetoric & Public Affairs*, 16, no. 3 (Fall 2013): 491.

¹⁹ William Jennings Bryan, *The Menace of Darwin* (London: Fleming H. Revell Company, 1922), 4.

²⁰ Laats, *Fundamentalism and Education in the Scopes Era*, 64.

²¹ *Ibid.*

²² *Ibid.*

²³ *Ibid.*, 64-5.

²⁴ *Ibid.*, 65.

²⁵ Marsden, *Fundamentalism and American Culture*, 164.

²⁶ Laats, *Fundamentalism and Education in the Scopes Era*, 65.

²⁷ *Ibid.*

²⁸ Marsden, *Fundamentalism and American Culture*, 137-8.

²⁹ D.G. Hart, “When Is a Fundamentalist a Modernist? J. Gresham Machen, Cultural Modernism, and Conservative Protestantism,” *Journal of the American Academy of Religion*, vol. 65, no. 3 (Autumn, 1997), 606.

is being made.”³⁰ The Butler Bill was drafted partially due fears like these. In addition to the Butler Bill, Tennessee passed an expanded Bible law that put control of Bible class curricula into the hands of a board of Judeo-Christian educators.³¹

The Butler Bill stood alone among the rest because it was the first to explicitly ban the teaching of evolution in public schools.³² Tennessean Governor Austin Peay had believed that the bill would be a good way to support “the church bill,” and was overall a “symbolic” gesture, not an “active statute.”³³ While some support was offered of the bill from native Tennesseans, the Butler Bill was nationally seen as an embarrassment. The *Chicago Tribune* published an editorial which derided the law similar to other laws, such as mandates to teach flat earth theory and that pi was a value of three, which were creating an “illiteracy belt.”³⁴

Scopes did not happen by chance in any respect. The American Civil Liberties Union placed advertisements in newspapers across Tennessee which offered to pay the expenses of any teacher willing to challenge the law.³⁵ One George Rappleya (alternate spelling: Rappalyea), who managed the Cumberland Coal and Iron Company located in Dayton, saw this as an opportunity to get financially suffering Dayton back on the map. It was Rappleya who garnered a local group of men, which included school superintendent William White, to meet in Robinson’s Drugstore (owned by Rhea County School Board president Frank Earl Robinson) in Dayton, Tennessee.³⁶ Soon after, the group recruited Rhea County High School football coach and math and science teacher, John Thomas Scopes, to deliberately defy the Butler Bill.³⁷ On May 5, 1925, Scopes was placed under arrest for teaching evolution to his class.³⁸

The Scopes trial centered upon a textbook, *A Civic Biology*, that was truly a reflection of the times. This textbook was being used by approximately 4,000 students in the ninth and tenth grade who were taking high school biology in Tennessee.³⁹ By 1924–25, over 90% of them used *A Civic Biology*.⁴⁰ The textbook was the first of its kind to be restructured to fit not only biology, but also botany, zoology and human physiology into one narrative.⁴¹ Not only did the book represent a pushback against the growing populism that those like William Jennings Bryan touted, but also supported even darker science: eugenics.

Identifying the biological conundrum of “parasitism,” author George William Hunter argued that eugenic measures, which he defined as “the science of being well born,” could keep this problem defined thus in check.⁴² He explained that “Humanity will not allow this [kill

³⁰ Gresham J. Machen, “Testimony before the House & Senate Committees on the Proposed Department of Education,” Washington, D.C. February 25, 1926.

<https://web.archive.org/web/20030502161945/http://homepage.mac.com/shanerosenthal/reformationink/jgmcongress.htm>

³¹ Laats. *Fundamentalism and Education in the Scopes Era*, 139.

³² *Ibid.*, 75.

³³ Moran, *The Scopes Trial*, 22-3.

³⁴ *Ibid.*, 24.

³⁵ James C. Foster, “Scopes Monkey Trial,” *The First Amendment Encyclopedia*. <https://mtsu.edu/first-amendment/article/1100/scopes-monkey-trial>.

³⁶ Moran, *The Scopes Trial*, 25; and Foster, “Scopes Monkey Trial.”

³⁷ Foster, “Scopes Monkey Trial.”

³⁸ Moran, *The Scopes Trial*, 216.

³⁹ Adam R. Shapiro, “Civic Biology and the Origin of the School Antievolution Movement,” *Journal of the History of Biology* 41 no. 3, (Fall, 2008): 413.

⁴⁰ *Ibid.*, 413.

⁴¹ *Ibid.*, 416.

⁴² George William Hunter, *A Civic Biology: Presented in Problems* (New York: American Book Company, 1914), 261, 263.

“unfit” people to prevent them from procreating], but we do have the remedy of separating the sexes in asylums or other places and in various ways preventing intermarriage and the possibilities of perpetuating such a degenerate race. Remedies of this sort have been tried successfully in Europe and are now meeting with success in this country.”⁴³ Hunter went on to cite Director of the Eugenics Record Office Charles Davenport’s recent study entitled, *Heredity in Relation to Eugenics*.⁴⁴ Additionally, Hunter explicitly referenced and endorsed “eugenics” seven times, “unfit” five times, and “feebleminded” twice.⁴⁵ Indeed, because of the nature of the theory of evolution, not all evolutionists were eugenicists, but almost by definition, all eugenicists were evolutionists.⁴⁶ The trial was not simply about backwoods fundamentalists and knowledgeable scientists. It was about the education of American youth, and the state of American culture itself.

The trial lasted eight days. It was the first American trial of its kind to be broadcast over national radio and took place in a tent that could accommodate 20,000 people.⁴⁷ William Jennings Bryan, the prosecutor, was pitted against Clarence Darrow, the lead defense attorney. Darrow was known for his desire to not only engage Bryan in a public debate, but also his success with defending two child-murders in *Leopold v. Levin*. In that case, he argued that the two murders in question were influenced by Friederich Nietzsche’s ideas of superman to the point that the accused were no longer culpable for their own crimes.⁴⁸ Needless to say, Darrow was a proponent of not only nature influencing a person, but also environmental nurture.

It is worth noting that, even with these tendencies, Darrow was one of the most severe critics of the American Eugenics Movement and wrote several articles in the *American Mercury* magazine during the months that *Buck v. Bell* was in the courts.⁴⁹ He attacked prominent eugenicists like Arthur Estabrook and wrote that he was “alarmed at the conceit and sureness of the advocates of this new dream. I shudder at their ruthlessness in meddling with life. I resent

⁴³ Hunter, *A Civic Biology*, 263.

⁴⁴ *Ibid.*

⁴⁵ *Ibid.* The term “Eugenics” can be found on pages: 249, 261, 263, 265, 409, 413, and 423. The term “Unfit” can be found on pages: 134, 148, 288, 380, and 382. The term “Feebleminded” can be found on pages: 262, and 263. Other terms of note include “Civilized White Inhabitants” on page 163, and “Degenerate” on pages 9, 263, and 346.

⁴⁶ Richard Weikart, *Hitler’s Ethic: The Nazi Pursuit of Evolutionary Process* (New York: Palgrave Macmillan, 2009), 3-6. This ethic was something that Adolf Hitler also held—because he fully believed in evolution as the “law of nature,” anything to do with “evolutionary advancement” was not “taboo.”

⁴⁷ Foster, “Scopes Monkey Trial.”

⁴⁸ “Clarence Darrow,” Public Broadcasting Station, <https://www.pbs.org/wgbh/americanexperience/features/monkeytrial-clarence-darrow/>; Illinois Supreme Court, “45 Ill. 2d 434, 259 N.E. 2d 250 (1970) NATHAN F. LEOPOLD, Jr., Appellant, v. MEYER LEVIN et al., Appellees. No. 41498.”; *Attorney Clarence Darrow’s Plea for Mercy and Prosecutor Robert E. Crowe’s Demand for the Death Penalty in the Loeb-Leopold Case: The Crime of a Century* (Chicago, IL: Wilson Publishing Company, 1923), 59. Darrow pleaded for mercy for the two murderers, saying, firstly that, “If there is responsibility anywhere, it is back of him [Nathan Leopold], somewhere in the infinite number of his ancestors, or in his surroundings, or in both. And I submit, your honor, that under every principle of natural justice, under every principle of conscience, of right, and of law, he should not be made responsible for the acts of somebody else, whether wise or unwise.” (55). Darrow further stated, “He believed in a superman. He [Nathan Leopold] and Dickie Loeb were the supermen. There might have been others, but they were two, and two chums. The ordinary commands of society were not for him. Many of us read it, but know that it has no actual application to life, but not he. It became a part of his being. It was his philosophy. He lived it and practiced it; he thought it applied to him, and he could not have believed it excepting [*sic*] that it either caused a diseased mind or was the result of a diseased mind.” (59).

⁴⁹ Clarence Darrow, “The Edwardses and the Jukeses,” *American Mercury* 8 (June 1926): 147-57; and Clarence Darrow, “The Eugenics Cult,” *American Mercury* 8 (June 1926): 129-37, quotations at 134, 135, 137.

their egotistic and stern righteousness.”⁵⁰ Further, he denounced eugenic plans to remake society as “the most senseless and impudent that has ever been put forward by irresponsible fanatics.”⁵¹

Even with this public declaration, Darrow had a host of helpers from the American Association for the Advancement of Science’s committee on evolution. The committee consisted of Edwin Grant Conklin, embryologist of Princeton University and committee chair, Henry Fairfield Osborn, director of the Museum of Natural History in New York City, and Charles Davenport, director of the Station for Experimental Evolution (which later housed the Eugenics Record Office), Long Island, New York.⁵² Founded in April 1922, the committee’s specific purpose was to counter the Fundamentalist inspired anti-evolution movement.⁵³

For example, in that same year, Charles Davenport used his powers on this very committee to endorse Harry Laughlin as a “special agent” of the Education Bureau to combat anti-evolution ideology.⁵⁴ In addition, Osborn along with Davenport helped aide and advise Madison Grant, one of America’s most esteemed eugenicists, with his blockbuster, *The Passing of the Great Race*, in 1921.⁵⁵ All of these men remained pertinent to the American Eugenics Movement, but Davenport and Laughlin were especially involved in the infamous *Buck v. Bell* case.⁵⁶ Historian Alexander Pavuk writes, “Davenport told the education department that Laughlin’s work on eugenic sterilization and immigration restriction particularly suited him to co-ordinate government efforts to quash challenges to evolution.”⁵⁷ This committee would continue on long after *Scopes*, and between 1925 and 1960, many of its presidents were active members of Christian churches, some of the most accomplished were also remarkably liberal theologically.⁵⁸

In 1925, Clarence Darrow, along with the American Civil Liberties Union both sought and received the committee’s help with the defense’s argument in *Scopes*.⁵⁹ Pavuk surmises, “The trial’s build-up was a window of opportunity whereby evolution could be explained and endorsed even as their other views on race and eugenics were advanced as both scientific and as having important social implications.”⁶⁰ During the trial, Darrow and his team used evidence such as the recent ruling in *Pierce v. Society of Sisters* (1925) which proclaimed that school choice was necessary so that children were not “mere creatures of the State.” Based on such

⁵⁰ Darrow, “The Eugenics Cult,” 134, 135, 137.

⁵¹ Ibid.

⁵² Alexander Pavuk, “The American Association for the Advancement of Science Committee on Evolution and the Scopes Trial: Race, Eugenics and Public Science in the U.S.A.,” *Historical Research* 91, no. 251 (February 2018):138; “Carnegie Institution of Washington,” Archives Cold Spring Harbor Laboratory, <http://library.cshl.edu/special-collections/carnegie-institution-of-washington>.

⁵³ Pavuk, “The American Association for the Advancement of Science Committee on Evolution and the Scopes Trial,” 140.

⁵⁴ Pavuk, “The American Association for the Advancement of Science Committee on Evolution and the Scopes Trial,” 147.

⁵⁵ Garland E. Allen, “Culling the Herd”: Eugenics and the Conservation Movement in the United States, 1900–1940,” *Journal of the History of Biology* 46 (2013) :43-44.

⁵⁶ For more on the *Buck v. Bell* trial, see Chapter 3.

⁵⁷ Pavuk, “The American Association for the Advancement of Science Committee on Evolution and the Scopes Trial,” 147.

⁵⁸ Edward B. Davis, “Altruism and the Administration of the Universe: Kirtley Fletcher Mather on Science and Values,” *Zygon* 46, no. 3 (September 2011): 532.

⁵⁹ Pavuk, “The American Association for the Advancement of Science Committee on Evolution and the Scopes Trial,” 140.

⁶⁰ Ibid.

arguments, the trial was about much more than the first amendment, or even about freedom in academia.⁶¹

Darrow not only used eugenic theory to support his position but also expert witnesses, even though he had openly denounced them. The only expert witness who testified in person was Dr. Maynard M. Metcalf, who was a research professor from The John Hopkins University, and was a valuable asset to the defense because he was both an evolutionist and a Christian.⁶² Metcalf had also spent some considerable time at Napoli Station, a veritable haven for similar naturalists such as Russian eugenicists Nikolai Kol'stov and Iurii Filipchenko.⁶³ Further, Metcalf was a well-published author and speaker who advocated for eugenics.

In his "Lectures upon Evolution and Animal Distribution," he described the notable problem of feeble-mindedness with an emphasis on feeble-minded parents raising their young. He concluded, "In connection with these and other sorts of undesirable characteristics, physical, mental, and moral, eugenics may well be practiced to a considerable degree, in part voluntarily, but in some cases under compulsion."⁶⁴ Metcalf served as the Chief of the Biology and Agriculture of the National Research Committee under President Woodrow Wilson as well as on the executive committee and the president of Section F, a zoological section of the American Association for the Advancement of Science (A.A.A.S.).⁶⁵ However, Metcalf's testimony was powerful in part because of his in-person delivery.

For example, in Metcalf's answered Darrow's query, "What would you say, practically all scientific men were or were not evolutionists?" by stating, "I am acquainted with practically all of the zoologists, botanists, and geologists of this country...I am absolutely convinced from personal knowledge that any one of these men feel and believe, as a matter of course, that evolution is a fact, but I doubt very much if any two of them agree as to the exact method by which evolution has been brought about..."⁶⁶ Attorney General Thomas Stewart viewed this question as unfair (perhaps because the answer concerning the fact of evolution was not definitive enough), and it was not included in the press report of the trial.⁶⁷ Metcalf's answer was

⁶¹ United States Supreme Court. "PIERCE, Governor of Oregon, et al. v. Society of The Sisters of The Holy Names of Jesus And Mary. Same v. Hill Military Academy." 268 U.S. 510, 45 S.Ct. 571, 69 L. Ed. 1070. Argued March 16 and 17, 1925. Decided June 1, 1925. *Legal Information Institute*. <https://www.law.cornell.edu/supremecourt/text/268/510>.

⁶² Douglas O. Linder, "Maynard Metcalf," *Famous Trials*, UMKC School of Law, <https://famous-trials.com/scopesmonkey/2095-metcalf>.

⁶³ Mark B. Adams, ed. *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia* (Oxford: Oxford University Press, 1990), 159-160; Loren Graham, *Lysenko's Ghost: Epigenetics and Russia* (Cambridge, MA: Harvard University Press, 2016), 52; "Our History," *Stazione Zoologica Anton Dohrn Napoli – Italy*, 2015, <http://www.szn.it/index.php/en/who-we-are/our-history>.

⁶⁴ Maynard Metcalf, "Lectures Upon Evolution and Animal Distribution," *University of Buffalo Studies II*, no. 4 (December 1922): 149. <https://babel.hathitrust.org/cgi/pt?id=hvd.tz1mah&view=1up&seq=47&q1=eugenics>.

⁶⁵ "Days Three & Four: Transcript of Scopes Trial, Tuesday July 14 & Wednesday July 15, 1925 Jul, 1925." *Scopes v. States*. <http://moses.law.umn.edu/darrow/documents/Scopes%203rd%20&%204th%20day.pdf>, 135-6. Dr. Metcalf was also the secretary-treasurer of the Zoological Society of the American Society of Naturalists as well as the executive committee of the division of biology and agriculture of the National Research Council.

⁶⁶ "Days Three & Four: Transcript of Scopes Trial," 137. Here is the answer in its entirety: "I am acquainted with practically all of the zoologists, botanists, and geologists of this country who have done any work; that is, any material contribution to knowledge in those fields, and I am absolutely convinced from personal knowledge that any one of these men feel and believe, as a matter of course, that evolution is a fact, but I doubt very much if any two of them agree as to the exact method by which evolution has been brought about, but I think there is—I know there is not a single among them who has the least doubt of the fact of evolution."

⁶⁷ Linder, "Maynard Metcalf."

good, but it was not good enough. It did not provide a staunchly unified front for the theory of evolution. However, he was not the only expert witness to provide his expertise.

Several *amicus curiae* briefs were written on behalf of Darrow's argument and submitted to the court. The briefs came from Dr. Winterton C. Curtis (Zoologist, University of Missouri), Wilbur A. Nelson (State Geologist of Tennessee), Kirtley F. Mather (Chair of the Department of Geology at Harvard University), Horatio Hackett Newman (Zoologist, University of Chicago), and Dr. Fay-Cooper Cole (Anthropologist, University of Chicago). These witnesses can be separated into two observable groups: the largely scientific and the mostly theoretical. Nelson and Cole fall into the former, while the rest, Curtis, Mather, and Newman, fall into the latter.

In his testimony, Cole focused on the anthropological aspect of evolution. A.A.A.S. fellow Cole believed that anthropology was a large proof for evolution. He wrote of evolution as "the most satisfactory explanation of the observed facts relating to the universe, to our world and all life in it."⁶⁸ By observing skeletons and body structures, he argued that one could determine the "average of a group or tribe or race," and that indeed, without evolution, teaching anthropology would be "impossible."⁶⁹ Nelson focused on the geological aspects of evolution in his brief. Also an A.A.A.S. fellow, Nelson heralded "the remarkable story of evolution" told through rocks.⁷⁰ Measuring time through sediments of rocks, Nelson believed that it would be "impossible to study or teach geology in Tennessee, or elsewhere, without using the theory of evolution."⁷¹

Dr. Winterton C. Curtis approached evolution theory from a zoological standpoint. Also a fellow of the A.A.A.S., Curtis divided evolution into three different types: cosmic, "theologic," and organic.⁷² He argued that in terms of astronomy and geology, "the Age of the Rock is of no particular consequence in so far as the Rock of Ages is concerned."⁷³ Not only did he tackle geology and astronomy in brief, but he also touched on genetics in light of evolution theory. Curtis surmised, "The modern science of genetics is beginning to solve the problem of how evolution takes place, although this is a question of extreme difficulty."⁷⁴ This theory, Curtis argued, was very important to the question of origin, too.

Curtis argued that ultimately, the story of creation was myth used to explain scientific facts of human origin. Citing eugenicists like William Bateson, and T.H. Huxley, and naturalists such as Georges-Louis Leclerc Comte de Buffon, Charles Darwin, and Herbert Spencer, Curtis believed that "all the multitudinous facts of biology hang together in a consistent fashion when viewed in terms of evolution, while they are meaningless when considered as the arbitrary acts of a Creator who brought them into existence all at once a few thousand years in the past."⁷⁵ Curtis went so far as to argue that the Bible itself followed an evolutionary pattern with a change in God's character from the Old to the New Testaments. While in the Old Testament God was vengeful and judgmental, Curtis argued, in the New Testament, God became loving and

⁶⁸ Fay-Cooper Cole, "Statement by Dr. Fay-Cooper Cole, Anthropologist, University of Chicago," *Scopes v. States*, July 21, 1925, 1.

⁶⁹ *Ibid.*, 2,5,8.

⁷⁰ Wilbur A. Nelson, "Statement by Wilbur A Nelson," *Scopes v. States*, July 21, 1925, 1.

⁷¹ *Ibid.*, 6,7.

⁷² Winterton C. Curtis, "Statement by Dr. Winterton C. Curtis," *Scopes v. States*, July 21, 1925, 2.

⁷³ *Ibid.*, 5.

⁷⁴ *Ibid.*, 8-9.

⁷⁵ *Ibid.*, 9-12, and 16-7.

merciful.⁷⁶ President Woodrow Wilson's of approval of both Curtis and the theory of evolution was also included in Curtis' testimony.⁷⁷

Kirtley F. Mather was a Sunday school teacher, as well as a descendant of both famous ministers Increase and Cotton. An acclaimed scientist, Mather focused on how evolution and faith could work together. After describing the several eras of evolutionary theory in his testimony, Mather conceded that the facts of natural science were "incomplete" in trying to tell the story of Man.⁷⁸ The theory of evolution, he further explained, did not explain the knowledge of moral law, the sense of rightness, the confidence in reasoning and a rational universe, or the hope in a spiritual aspiration or world outside of the natural world.⁷⁹ He argued, therefore, that "life as we know it is but one manifestation of the mysterious spiritual powers which permeate the universe."⁸⁰ Thus, science was the tool to unveil the mystery.

Mather continued by describing science as having "no beginning and no ending," with creation being an invalid theory within the scientific context.⁸¹ Thus, Mather urged the court along with his fellow Christians to separate moral law and spiritual realities from the study of natural science, physical laws, and material realities, saying that ultimately Biblical interpretations were matters that should be left to the individual.⁸² He argued that a correct knowledge of both evolution and Christianity was "essential to success—both individual and racial—in life," saying that while the "law of progress" had "apparently been opposed to the love of Christ," his "knowing the ages of rocks ha[d] led to better knowledge of the Rock of Ages."⁸³ Ultimately, he believed that because of the unifying nature of evolutionary theory, it was essential to not only one's faith, but also the elimination of chaos in the world.⁸⁴ While Mather never outright defended the idea of eugenics, he did synthesize Christian and Naturalist thought and argued both disciplines were essential to individual and racial success.

Horatio Hackett Newman was the final expert witness who provided a brief for *Scopes*. Also an A.A.A.S. fellow, Newman focused on evidence from different branches of science to contend that evolution was unifying, including comparative anatomy or morphology (the

⁷⁶ Curtis, "Statement," 19.

⁷⁷ Ibid. President Woodrow Wilson wrote Curtis from Washington, D.C. on August 29, 1922, and said: "My dear Professor Curtis: May it not suffice for me to say, in reply to your letter of August twenty-fifth, that of course like every other man of intelligence and education I do believe in Organic Evolution. It surprises me that at this late date such questions should be raised. Sincerely yours, Woodrow Wilson."

⁷⁸ Kirtley F. Mather, "Statement by Kirtley F. Mather," *Scopes v. States*, July 21, 1925, 15.

⁷⁹ Mather, "Statement", 1-14.

⁸⁰ Ibid., 15.

⁸¹ Ibid., 16.

⁸² Ibid., 16-7.

⁸³ Ibid., 20. It is important to note Mather's conception of the image of God, and how this line of reasoning relates to the question of the beginning of life itself, a question that remains hotly contested by some and vehemently defended by others in the abortion debate. He wrote, "In the image of God cannot refer to hands or feet, heart, stomach, lungs. That may have been the conception of Moses, it certainly was not the conception of Christ who said that God is spirit, and proclaimed that man must worship Him in truth. It is man's soul, his spirit, which is patterned after God the Spirit. It is the business of the theologian not the scientist to state just when and how man gained a soul. The man of science is keenly interested in the matter, but he should not be blamed if he cannot answer questions here. The theologian must tell when the individual gets his soul, whether at the moment of conception, or when the unborn babe first stirs within the womb, or at the moment of birth, or at the first gleam of intelligent appraisal of his environment and how he knows this....Already many of them are marching shoulder to shoulder in their endeavor to combine a trained and reasoning mind with a faithful and loving heart in every human individual and thus to develop more perfectly in mankind and the image of God." See Mather, "Statement," 21-22.

⁸⁴ Ibid., 23.

science of structure), taxonomy (the science of classification), serology (the science of blood testing), embryology (the science of development), paleontology (the science of extinct life), geographic distribution (the study of horizontal distribution of species on earth's surface), and genetics ("the analytic and experimental study of evolutionary processes going on to-day").⁸⁵ He argued that the principles of evolution was much like the Law of Gravity, because just like gravity, evolution could also "acquire its validity through its ability to explain, unify, and rationalize many observed facts of physical nature."⁸⁶ Arguing that creationists were "biological isolationists" who wanted to promote human beings as a "creature without affinities to the animal world," Newman promoted the idea that different races betwixt mankind, as well as the study of embryology itself, were evidences of rapid evolution.⁸⁷

Further along in his testimony, Newman defined genetics as "the experimental and analytical study of Variation and Heredity," two concepts which he pinned as the "primary causal factors of organic evolution."⁸⁸ He advocated for eugenics as the present day, real-time version of evolution, saying that "when man takes a hand in controlling evolutionary processes and actually observes new hereditary types taking origin from old, he is observing at first hand the actual processes of evolution."⁸⁹ He went on to write, "the geneticist is an eye-witness of present-day evolution and is able to offer the most direct evidence that evolution is a fact."⁹⁰ Evolutionary theory was necessary for the eugenicist.

This mirrored Newman's work first published in 1921, *Evolution, Genetics and Eugenics*, in which he lays out how evolution can be seen and improved upon through the use and teaching of eugenics. Not only does Newman offer an extensive history of naturalism from ancient history onward, but also a positive recounting of the American Eugenics Movement up until that point.⁹¹ He defines eugenics as "the application of genetics to man with the hope that man might control his own evolution and save himself from racial degeneration."⁹² Detailing and quoting large portions of various eugenics congresses, Newman contends that the pedigree, statistical, and twin methods were most useful to eugenic research.⁹³ After outlining his own research, he concluded that, "A rightly directed environment, not by brute death-selection but by the happier method of birth selection, will improve man's heredity...[and] the social heritage....Education," he argued, "will be doubly effective when it learns this great lesson."⁹⁴ Thus, Newman was not only a researcher of eugenics, but a teacher of it. His was a perfect witness for Scopes.

The jury found John Thomas Scopes guilty of violating the Butler Bill in nine minutes.⁹⁵ Yet, the trial itself took eight days. Scopes was fined \$100, but because of a procedural error the Tennessee Supreme Court overturned his conviction.⁹⁶ A three-to-one vote upheld the

⁸⁵ Horatio Hackett Newman, "Statement by Professor Horatio Hackett Newman," *Scopes v. States*, July 21, 1925, 6, 44.

⁸⁶ *Ibid.*, 3.

⁸⁷ *Ibid.*, 19, 21, 29.

⁸⁸ *Ibid.*, 43.

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*, 43.

⁹¹ Horatio Hackett Newman, *Evolution, Genetics and Eugenics* (Chicago: The University of Chicago Press, 1932), 3-46, 441.

⁹² *Ibid.*, 441.

⁹³ *Ibid.*, 442-5.

⁹⁴ *Ibid.*, 506.

⁹⁵ Foster, "Scopes Monkey Trial."

⁹⁶ *Ibid.*

antievolution law, the Butler Bill.⁹⁷ In its decision, Tennessee's Supreme Court made the determination that there was "nothing to be gained by prolonging the life of this bizarre case."⁹⁸ *Scopes* had been a bizarre case indeed. It was bizarre because unlike most court cases, the implication was not in the legal ramifications that it held, or even the conviction of the Scopes. Indeed, the case lacked a significant legal implication. While the concrete legal implication was lacking, the cultural one was not.

Scopes was barely a trial in the traditional sense. It was more of a rigged debate with a large national audience listening.⁹⁹ In the years leading up to *Scopes*, the debate of evolution had been a favorite pastime of American public intellectuals who took to newspapers to publicize their ideas and often create diagrams that explained evolution in an accessible manner.¹⁰⁰ While many scientists did agree that Darwinist evolutionary theory was correct, few agreed upon how that theory became tangible in science. Indeed, as seen in the public debates between Osborn and Reverend John Roach Straton, many scientists were not only Christians themselves, but also held to a worldview which demanded a purpose for living which Darwinism did not provide.¹⁰¹ This created an awkward atmosphere for American on-lookers. Journalism was supposed to not only inform the American public; but teach the American public.¹⁰² Even *The New York Times* heralded the trial as giving "scientific men a better opportunity than they have ever had to bring their teaching home to millions."¹⁰³ As the public searched for answers, the knowledgeable scientists who had been debating this topic for years did not have any to give. This case was bizarre because first, it was seen as a case which would end public debates over an ideological issue, and second, it did not conclusively answer the questions it had advertised that it would.

The question, regardless of the implications, remains: Was the Scopes Monkey Trial a trial of law or of culture? There is a strong case to be made that it was a trial of culture that manifested itself in a legal context. This trial was not pursued to simply find John Thomas Scopes guilty or innocent of a violation of the Butler Bill. This trial was not created to even find fault with the small country school or less than adequate textbook in question. This trial was not simply about first amendment rights or academic freedom. This trial was about American culture during the 1920s, and how Naturalism, social Darwinism, and Fundamentalism interacted. *Scopes* was designed to create a spectacle and to serve as a commentary on the pervading ideology of the times—to hail science as lord and to postulate the importance of eugenic remedies for the society that were on the horizon.

This is certainly not to suggest that *Scopes* was not influential. Indeed, arguably it was more influential because Scopes' conviction was of little to no consequence. Because it was bizarre, it was noteworthy. Because it was a spectacle, it was remembered. *Scopes*, if nothing else, is a case study in how culture influences the courtrooms. In this case specifically, *Scopes* serves as a marker in which Fundamentalism and Christianity could not sufficiently answer the accusations Naturalism and social Darwinism posed; this left the door open to the logical

⁹⁷ Charles A. Bleckmann, "Evolutionism and Creationism in *Science*: 1880-2000," *BioScience* 56 no. 2 (February 2006): 154.

⁹⁸ Foster, "Scopes Monkey Trial."

⁹⁹ *Ibid.*, 25; and Foster, "Scopes Monkey Trial."

¹⁰⁰ Constance Areson Clark, "Evolution for John Doe: Pictures, the Public, and the Scopes Trial Debate," *The Journal of American History* 87, no. 4 (March 2001): 1280.

¹⁰¹ *Ibid.*, 1280-1.

¹⁰² Perry Perry, "Summer for the Scientists? The Scopes Trial and the Pedagogy of Journalism," *Journalism & Mass Communication Quarterly* 92, no. 2, (2015): 445.

¹⁰³ "One Compensation," *New York Times*, July 12, 1925, p. E6.

conclusion of both Naturalism and social Darwinism: eugenics. Not every evolutionist was a eugenicist, but every eugenicist had to be an evolutionist at some level. The eugenicists of the Progressive Era knew that. As Julian Huxley would later write in the 1940s, “Man is the heir of evolution: but he is also its martyr. All living species provide their evolutionary sacrifice: only man knows that he is a victim.”¹⁰⁴ *Scopes* further set the course for the American Eugenics Movement to prosper.

What does *Scopes* imply for today? Interestingly, science itself is a reflection not only of technological advance, but a litmus test of both cultural leanings and current zeitgeist, or spirit of the times. Science is integral to both culture and courtroom, especially as questions of gender, life, and marriage are hot button issues in modern society today. In an effort to claim rights to their body, their choice, and their preference, many are quick to use only science that helps their case, not wanting to hinder their cause. This is a dangerous practice because it is ultimately a dissolution of truth itself.

Indeed, science should not only be based in the possibility of knowledge, but the wisdom of how to use such knowledge. The etymology of science and philosophy are, not surprisingly, codependent. The word “philosophy” comes from the Greek *φιλοσοφία*, meaning “love of wisdom.” Similarly, the word “science” comes from the Latin *scientia*, which means “knowledge.” Knowledge and wisdom must go together, or else the two are both useless. If knowledge bears no wisdom, what is its value? If wisdom has no knowledge, can it be considered wisdom? Aristotle wrestles with this in his *Nicomachean Ethics*. He wrote that that:

...the man who is capable of deliberating has practical wisdom. Now no one deliberates about things that are invariable, nor about things that it is impossible for him to do. Therefore, since scientific knowledge involves demonstration, but there is no demonstration of things whose first principles are variable (for all such things might actually be otherwise), and since it is impossible to deliberate about things that are of necessity, practical wisdom cannot be scientific knowledge nor art...¹⁰⁵

Science is but a practical application that can be used. It is not an absolute truth that must be obeyed. Science is still valuable, certainly, but its value can be either increased or decreased by how it is used. This is unlike a virtue like justice or temperance, which will maintain its inherent value even if it is not utilized because it is not based in application, but in truth. Scientists in all shapes and sizes ultimately must wrestle not only with garnering accurate data by utilizing the scientific method but also how to apply these results pragmatically and truthfully in real life situations. *Scopes* remains a vital example of not only the symbiotic relationship between culture and courtroom, but also the undergirding of science and the importance of truth in both arenas.

¹⁰⁴ T.H. and Julian Huxley, *Touchstone for Ethics* (New York: Harper & Brothers Publishers, 1947), 155.

¹⁰⁵ Aristotle, *Nicomachean Ethics*, trans. W.D. Ross, Book VI, Paragraph 5, Lines 4-6.

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