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ABSTRACT: Stephen Jay Gould was a Harvard evolutionary biologist who became a prominent media figure and commentator on evolution through the 1970s–1990s. In 1981 Gould was called as an expert witness on behalf of the plaintiffs in the court case *McLean v. Arkansas*. The lawsuit filed against the state claimed that a state law which mandated the teaching of creation science in Arkansas public schools was unconstitutional because it violated the Establishment Clause of the US Constitution. Therefore it was crucial for the plaintiffs to establish that creation science was not really 'science' but in fact a religious belief. Gould's testimony along with other scientists, theologians and philosophers helped the plaintiffs win the case, which set a precedent for banning the teaching of creation science in public schools across the country.


1. INTRODUCTION

There is a long history of popular interest generated by evolutionary biology. From the speculations over the authorship of *The Vestiges of the Natural History of Creation* in 1844, to Darwin’s “bulldog,” T.H. Huxley, the public debates between Louis Agassiz and Asa Gray, and the Scopes “Monkey Trial” of 1925, the history of evolutionary biology is full of examples of evolution in the public frame (Shapin, 1990). Biologists have taken on the role of public intellectuals to comment on the relationship between scientific knowledge, religious belief and evolution, and human progress (Wigam, 1922). In the twentieth century, those involved in evolutionary discourse had various visions of this public role. In his 1936 novel *The Shape of Things to Come* H.G. Wells created a futuristic society in which biologists formed a more intelligent minority that used their knowledge of genetics to further the progress of society. Wells’s good friend Julian Huxley capitalized on this idea and in newspapers, popular books and radio shows promoted an evolutionary ethic for social progress to a general audience from the 1920s to the 1940s (Huxley, 1964). By 1932 at the American Museum of Natural History, Henry Osborn designed displays intended to educate a general audience on the evolution of vertebrates, through visualizations of evolutionary trees and the famous African Mammal Hall (Rainger, 1991). The eugenics movement, the publicity surrounding the elucidation of the structure of DNA, the development of evolutionary psychology in the 1980s and 1990s, and the sequencing of the human genome in the 1990s and 2000s, further highlighted that 'evolution' and genetics were fundamental to questions of human nature and origins. Throughout these many episodes biologists, academics, politicians, and journalists

alternatively proclaimed and questioned the efficacy of evolutionary processes to reveal human nature or characterize social progress.

This paper takes up the themes of this longer history while examining the interplay between evolutionary biology, popular science, and various publics in the context of late twentieth-century America. In my larger dissertation project I investigate Stephen Jay Gould’s role as a public intellectual in the United States during the period 1974 to 2002. Gould was a Harvard evolutionary biologist and paleontologist with a notable scientific career, who became a prominent media commentator on evolution. His column “This View of Life” ran from 1974 to 2001 in Natural History, the magazine for the American Natural History Museum. Gould was known to a large readership through this column, and subsequent bound editions (including *Ever Since Darwin, The Panda’s Thumb and The Flamingo’s Smile*) (Gould, 1977, 1980, & 1987). Gould contributed enormously to the formation of the discipline of evolutionary paleobiology—his 1972 paper, “Punctuated equilibria: the tempo and mode of evolution reconsidered” co-authored with Niles Eldredge has been cited in the journal *Paleobiology* more than 3,000 times (Gould & Eldredge, 1972; Ruse & Sepkoski, 2010). In 1977 Gould published an influential paper with Richard Lewontin titled “The Spandrels of San Marcos and the Panglossian Paradigm,” which argued that evolutionary biologists were mistaken to understand all biological features as atomized entities produced by natural selection (Gould & Lewontin, 1979). Gould himself argued that his ‘popular’ and ‘professional’ work existed in the same sphere (Allmon, 2009). In his later career this popular work would include involvement in public television programs such as *NOVA* and the *Children’s Television Workshop*, and appearances on television news shows including *Charlie Rose, 60 Minutes* and *CNN Talkback Live*. Gould even appeared as a guest on *The Simpsons*. But Gould was also an accomplished and lauded academic scientist—over his career he received forty-four honorary degrees and sixty-six major fellowships, medals and awards. And in 2001 the Library of Congress honored Gould as one of their “Living Legends,” as a figure who had “made significant contributions to America’s diverse cultural, scientific and social heritage” (Living Legends, 2000). During his lifetime Gould was widely regarded as one of the most distinguished and well-known American scientists.

The rising fame and influence of public scientific intellectuals such as Gould reveals much about the role of scientific expertise in late twentieth-century American culture. Did American publics turn to science as a source of objective information that effectively explained the natural world? Did different publics utilize evolutionary knowledge as a normative narrative to construct personal ethics and order human society? In 1981 Gould was called as an expert witness on behalf of the plaintiffs in the court case *McLean v. Arkansas*. The paper explores these questions through an examination of the court documents, media coverage and Gould's correspondence with other biologists and fans of his popular column in *Natural History* magazine during and around the *McLean v. Arkansas* creation science trial. Ultimately I suggest that Gould came to have the legitimacy to authoritatively comment on the nature of science and the proper teaching of evolution by deploying both his status as a technical practitioner of biology as well as his identity as a popular science writer.

2. THE CASE

In December of 1981, Gould testified before the Arkansas state Supreme Court as an expert witness on behalf of the plaintiffs. The plaintiffs, a number of clergy members and educators,
together with the ACLU and the pro bono assistance of an Arkansas law firm (Skadden, Arps, Slate Meagher & Flom), brought a suit against the state of Arkansas for its passage of Act 590, “The Balanced Treatment for Creation-Science and Evolution-Science Act” (LaFollette, 1983). Act 590 was a legislative measure introduced by creationist organizations which mandated equal time for creation-science along with evolutionary accounts for what the act termed ‘origins’ in public science classrooms. The plaintiffs argued that creation-science was in fact primarily motivated to encourage religion, and therefore the bill violated the establishment clause of the first amendment (Larson, 2003).

The trial lasted for two weeks, but Gould was so confident in victory for his side, that he wrote an op-ed editorial for the New York Times about the significance of the trial before the verdict was delivered. A letter to Tamar Jacobsen, the editor of the op-ed section, captured Gould's sentiments at that moment:

But I feel so confident of [Judge Overton's] favorable ruling..., that I am submitting this Op-Ed comment now to minimize delays after the actual decision comes down. Of course, the piece will have to be scrapped if he rules against us (nearly inconceivable), or if he rules favorably but narrowly (also unlikely). So do read the ruling before running the piece, though I am confident that I have foreseen the actual course of events. (Gould, 1981e)

Overton did in fact rule in favor of the plaintiffs, and his decision, though it was only binding in one district of Arkansas, was influential in the 1987 US Supreme Court case which ruled the teaching of creation-science in public schools unconstitutional for the whole United States.1 This case is part of a long list of trials that encapsulated the legal issues of the American evolution-creation controversy during the twentieth century. It has featured in the most important histories of the American creationist movement, including work by Ronald Numbers (2006), Edward Larson (2003), Dorothy Nelkin (1982) and Michael Ruse (2005). (Nelkin and Ruse both served as expert witnesses in the case itself). Additionally, the trial appeared in both national and regional newspapers of the day, as well as as popular books documenting the creation-evolution debate in the intervening decades. With so much attention given to this trial in particular and to the controversy with creationism generally, my interest is to add a fresh perspective by focusing on Gould's identity and subsequent activity as an expert witness in the trial. I suggest there are two reasons that this trial deserves renewed attention.

First, because more concentrated attention needs to be paid as to how the creation controversy connects to the general discourse about the ethical responsibility of biologists to participate in the project of American society. The stakes in the McLean trial stand in direct contrast to another public controversy over biology that Gould had been involved in just a few years earlier. This was the sociobiology debate, which erupted out of Cambridge, Massachusetts in the mid 1970s and captured with it all the most potent issues of the day: racial tension, gender relations and the trustworthiness of science (Jumonville, 2002). Gould and other critics of sociobiology believed strongly that the existing conditions in American society were unfair, and more that they could be changed. They did not want a biology that described the universal reasons for human behavior, for human action and human social relations. They were mistrustful of biologists who claimed to speak for other groups and other categories. And they felt that that type of thinking only hurt social progress. There the stakes of

1 The case, Edward v. Aguillard (1987) centered on a Louisiana 'equal time' law very similar to the Arkansas Act 590. The case went to the United States Supreme court, and ruled that 'equal time' laws were generally unconstitutional because of the violation of the establishment clause of the First Amendment.
the debate were in what way evolutionary scientists could ethically contribute to a progressive liberal society. Famously, Gould and Lewontin had very different views from E.O. Wilson (whose text *Sociobiology* sparked the public debate) as to how this was properly to be undertaken. However, they all share the presumption that evolutionary biology could positively shape American society. But by the time of the McLean trial, the stakes were quite different. With the emergence of creationism with the broader political context of the New Right and the rise of the moral majority, it was no longer simply a question of how evolutionary science was to participate in American society, but whether it could at all (Larson, 2003).

Secondly, this episode highlights and crystallizes the identities that make up Gould's persona as a “scientific expert.” During the trial he was called upon as a professional scientist, an evolutionary popularizer and as an evolutionary historian. Each of these aspects of his identity were brought out explicitly in both his trial testimony and in his subsequent writing about his experience testifying. As a professional biologist he was asked to comment on what he saw as the misuse by creationists of his theory of punctuated equilibrium and his discussion of uniformitarianism. For instance, his article on “Punctuated Equilibrium” was entered into evidence: “Q. Your article from *Paleobiology* which is entitled "Punctuated Equilibrium, the tempo and Mode of Evolution Reconsidered," do you plan to rely on this in your testimony? A. Yes. Well, I plan to use it” (Gould, 1981b, p. 176). Two of Gould’s popular books, *Ever Since Darwin* and *The Panda’s Thumb* were entered into the official court record along with his curriculum vitae as an acknowledgement of his expertise. And finally he was also called upon as a historian of science: “Q: You've been offered as an expert also, Doctor Gould, on the history of evolutionary theory or evolutionary thought. A: Yes” (Gould, 1981f, p. 621).

These three aspects of Gould’s identity are clearly interrelated, but it is this third aspect that I focus on in this paper, because it was as an expert in the history of evolutionary theory that Gould was most directly able to comment on the state of evolutionary knowledge within the trial. It was also as an historian that he was made sense of the events of the trial to his professional colleagues and to his popular audience. He did this by setting the McLean trial into a larger historical narrative of the evolution-creation controversy in the twentieth century. Particularly he compared McLean to the Scopes Monkey Trial of 1925 both in his testimony and in his writing on the trial. Edward Larson, in his book *Trial and Error*, has pointed out that McLean had nothing like the “profound social experiences” of the Scopes "monkey trial" of 1925 (2003, p. 159). Indeed the McLean case relied on comparisons to *Scopes* in much of the press coverage to help generate popular interest in the 1980s press coverage of the trial. Thus, by comparing McLean to the Scopes trial, Gould was able to use history in order to create a rallying cry against the creationist movement both for his professional colleagues and for the readers of his popular writing.

3. SCOPES IN TESTIMONY AND WRITING

During his testimony Gould returned many times to the Scopes trial as a way to contextualize his experience as an expert witness. For instance, he called up on the 1925 trial as a way of arguing that the creationists’ arguments were tired, worn-out and dogmatic in their unchanging nature.

*Q: I think you earlier stated that as far as you know, there is no new evidence and no new idea for creation science in the past one hundred years; is that true?* Gould: I think I said since William
Similarly when asked to explain his views on the central issue of the trial—namely the appropriate use of education—he again used Scope as his reference.

“Gould: "Education, you know, means broadening, advancing, and if you limit a teacher to only one side of anything, the whole country will eventually have one thought, be one individual. I believe in teaching every aspect of every problem or theory." Q: Who is the source of that quote? A: John Thomas Scopes.” (Gould, 1981f, p. 606)

Interestingly, Gould’s use of a quote from John Scopes himself highlighted the changes since the 1925 Monkey Trial. The litigious situation had completely reversed—in 1925 it was the legality of evolution in the classroom that was under question. Almost 60 years later, the place of science in public schools had been secured, now it was religion that had to work on science’s terms to enter into the public education space.

The Scopes trial was such a predominant theme for Gould in his preparation leading to the trial that he took a family trip to Dayton, Tennessee in order to visit the site of the Monkey Trial. The visit was featured in a piece, simply titled “A Visit to Dayton” for his monthly column in Natural History magazine. This photo, taken by his first wife, shows Gould walking away from the Dayton courthouse. The central message of Gould’s essay was that American evolutionists and liberals had been sadly misinterpreting the events of the Scopes trial for the last five decades. Due to the popularity of fictional depictions of the trial (most notably the play and later film Inherit the Wind), many Americans had believed that the events of Scopes spelled the end of fundamentalism in American culture. (Larson, 2003 & 2008; Gould, 1981a) In “A visit to Dayton” Gould attempted to disabuse his readers of this comfortable notion, citing recent historical work on the subject; he argued that Scopes actually strengthened the fundamentalist movement—but that the Depression and the Second World War had merely diverted the movement’s efforts away from the issue of evolution (Gould, 1981g). A resurgence of interest in the topic in the late 1970s, however, belied “any hope that the issues of Scopes’ trial had been banished to the realm of nostalgic Americana have been swept aside by our current creationist resurgence—the climate that inspired my own detour across the Tennessee River” (Gould, 1981g, p. 9; see also Numbers, 2006).

Not only had Scopes not ended fundamentalism, according to Gould it halted the incorporation of evolution into high school biology textbooks. Gould made this point in another piece written for Natural History, by vividly weaving in his own personal narrative into the historical events:

Now, more than half a life later (I studied high school biology in 1956), I finally understand why Mrs. Blenderman had neglected the subject that so passionately interested me. I had been a victim of Scopes’ ghost . . . Most people view the Scopes trial as a victory for evolution, if only because Paul Muni and Spencer Tracy served Clarence Darrow so well in theatrical and film versions of Inherit the Wind, and because the trial triggered an outpouring of popular literature by aggrieved and outraged evolutionists. Scopes’ conviction had been a mere formality; the battle for evolution had been won in the court of public opinion. Would it were so. As several historians have shown, the Scopes trial was a rousing defeat. It abetted a growing fundamentalist movement and led directly to the dilution or elimination of evolution from all popular high school texts in the United States . . . The situation did not change until 1957, a year too late for me, when the Russian Sputnik provoked a searching inquiry into the shameful state of science education in America’s high schools. (Gould, 1982, p. 5)
Gould did not confine his comments about McLean and its relevance to Scopes to his column for *Natural History* magazine. His most famous piece from the period, “Evolution as Fact and Theory,” appeared in *Discover* Magazine in May of 1981. As in other instances, Gould chose to emphasize that the creationist movement had changed little, but had lay sleeping, gathering power against the progressive, liberal establishment.

But nothing has changed; the creationists have presented not a single new fact or argument. Darrow and Bryan were at least more entertaining than we lesser antagonists today. The rise of creationism is politics, pure and simple; it represents one issue (and by no means the major concern of) the resurgent evangelical right. Arguments that seemed kooky just a decade ago have re-entered the mainstream. (Gould, 1981a, p. 34)

The piece was written before the trial, but appeared in a number of collected volumes after the McLean case. One was an edited volume by Ashley Montague, the British anthropologist and scientific activist. His 1984 volume, *Science and Creationism*, was a collection of essays by scientists in direct rebuttal to the claims of scientific creationism. Gould's essay was also featured in a volume *Speak Out Against the New Right* that explicitly connected the evolution-creation controversy to other political issues between the Left and the New Right (including abortion, the economy and gender roles). It was the language of Scopes in the *Discover* piece that once again allowed Gould to make the events of the McLean trial sensible. In all of Gould's writing in response to the trial, creationism figured as a kind of slumbering evil that had recently gained new blood. Gould gave his readers a sense that evolutionists have been asleep at the helm—that they had not been paying attention to what mattered. By relating McLean to the Scopes-era history, Gould cast the trial into a larger narrative about the contests for science and progressive liberalism in American society.

4. GOULD’S CALL TO ARMS

This perspective might be dismissed as a quirk of Gould's personality, as he was liable to relate current events to historical examples in many of his popular publications. However, in his correspondence, both in the incoming and outgoing letters there is a sense of a call to arms to a new professional duty—the campaign against the creationists. And it was the historical record that provided the framework for articulating this professional duty. One letter, to Edward Linenthal, a biology professor at Indiana University, captures this perspective:

> I am surprised that your biological colleagues have been so unhelpful. I had thought that the general awakening among biologists had occurred and much as we still don't know whether to laugh or cry, were at least committed to some activity against creationism. . . . With best wishes in a common fight.” (Gould, 1981c, p. 1)

Additionally, many of Gould's exchanges in this period coincided with another important evolutionary event in 1982—the centennial of Darwin’s death. Historians such as Betty Smocovitis (1999) have illustrated the importance of the 1959 Darwin centennial in the intellectual and institutional work that went into unifying the biological disciplines after the modern synthesis. In her article Smocovitis explores the role that the centennial took in shoring up biological identity, but also notes that there were hardly any historians involved in the proceedings (Smocovitis, 1999). The centennial celebrations of 1959 had been an opportunity for biologists to articulate the intellectual framework of the modern synthesis and secure their
disciplinary identity. However, in 1982 many more historians were involved in the celebrations of Darwinian evolution. Due to this, the 1982 commemorative activities were also an opportunity to address concerns over creationists (Wassersug & Rose, 1984).

And for Gould this meant that much of his professional correspondence directly after the McLean trial was directly connected to 1982 centennial celebrations. One letter to Paul Kurtz December 21, 1981, a prominent American skeptic, explicitly tied these two themes together:

I am, indeed, well aware—especially after a fascinating day spent testifying in Arkansas last week. Although the judge will not render his decision until later this week, I can state with confidence that we routed the creationists. This, of course, will not end the issue, and I applaud you for the topic of your Darwin centennial meeting. (Gould, 1981d)

Indeed, I suggest that the McLean trial, even more than the legal issues involved, helped to solidify for Gould and other evolutionary biologists an ethical responsibility to narrow the definition of science and publicly defeat the American creationist movement.

This new public responsibility was seen most clearly in the formation of a new committee within the professional academic organization, the Society for the Study of Evolution (SSE). An internal memo, sent to Gould and other prominent evolutionary biologists called for the formation of an 'education committee'—an internal group whose explicit purpose was to deal with creationists.

The Society for the Study of Evolution has recently formed Education Committee. As you might suspect, this euphemism hides the fact that it is to deal with the current contention of the creationists. . . . There is ample evidence that our problems with the creationists, while presently acute are chronic. (SSE internal memo, 1982, p. 1)

This committee eventually became the National Center for Science Education (NCSE). It was, and remains, the most prominent anti-creationist organization in the United States. It began during the vents of the McLean trial as a way for professional biologists, including the very public Gould, to organize against creationism during the 1980s and 1990s.

5. CONCLUSION

There was an air of mobilization in the correspondence, publications and trial preparations by Gould and other evolutionists in the early 1980s. History had snuck up on evolutionary biologists, and they were going to band together to do something about it. The questions I have attempted to answer in this paper are: Why did it become a perceived public duty for Gould and for other evolutionary thinkers and biologists to publicly combat creationists? And how did controversy with creationists change the perceived ethical responsibilities for biologists to engage politically? Eventually I aim to suggest that public debate with creationists made political involvement much less professionally or personally problematic for evolutionists than it had been over topics such as sociobiology just a few years prior. And particularly, this trial meant that part of being an evolutionary biologist was to be public anti-creationist in a way that was not conceivable a decade earlier. I would like to end with a quote from one of the trial lawyers from the firm that led the McLean case. It nicely summarizes the terms on which scientific expertise was deployed in this context:
The issues presented in McLean, however, occasioned an interesting variation on the usual role of the expert. Particularly in the case of the science and education experts, the opinions and conclusions offered on behalf of the plaintiffs were not the opinions of experts applying their experience to a particular set of facts significant to the legal issues at trial, nor were they those of experts testifying about the absolute truth or falsity of any particular scientific fact or conclusion regarding the origin or development of the universe. Rather, those experts presented to the court the results of twenty years of the scientific and educational communities’ evaluation of the scientific and educational claims of the creationists, set against one hundred years of experience since the Darwinian revolution. (LaFollette, 1983, p. 99)

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