

# THE STIGMATA OF ANCESTRY

Reinvigorating the Conflict Thesis in the American 1970s

ERIKA LORRAINE MILAM

*Every living being is also a fossil. Within it, all the way down to the microscopic structure of its proteins, it bears the traces if not the stigmata of its ancestry. This is yet truer of man than of any other animal species by dint of the dual evolution—physical and ideational—that he is heir to.*

—Jacques Monod

I rven DeVore hailed from eastern Texas. He never planned to study animal behavior as a career, largely because he never imagined it was possible. As an undergraduate at the University of Texas, he majored in social anthropology and studied Native American cultures. As a graduate student on the same path at the University of Chicago, he met and quickly came to work with the physical anthropologist, and doyen of the field, Sherwood Washburn. Years later DeVore would recall, “If he had tried to recruit me to go on a Mars expedition and study paramecium, I would have done it. If he said it was important, I would know it was.” Instead of paramecium, Washburn told DeVore to study the social behavior of baboons in Africa; DeVore said, “I’m your man.”<sup>1</sup> Throughout his subsequent career he explored the evolution of humanity and other primates from this interdisciplinary perspective (fig. 1.1).

By 1975 DeVore’s research caught the attention of two disparate sets of critics. In the newly articulated political perspectives of the era, social conservatives attacked evolutionary theories of human nature as products of a new, liberal, East Coast scientific elitism out of touch with the traditional



**Figure 1.1:** A unknown photographer captured Irven DeVore posing with a copy of *Primate Behavior: Field Studies of Monkeys and Apes* (New York: Holt, Rinehart and Winston, 1965), with drawings of baboons over his shoulder. The image was circulated to advertise his participation in an NBC-TV special that aired Friday, April 3, 1970. Hosted by Arthur C. Clarke and narrated by Rod Serling, “The Unexplained” interviewed a wide array of scientists about their research. Author’s collection.

morals of most Americans.<sup>2</sup> At the same time, critiques of biological determinism gained vociferous support on college campuses around the country. In describing theories of evolution of human behavior as hopelessly conservative, such critics believed they were building on the political momentum

of the 1960s and that sociobiologists were old-fashioned relics of science's white male privilege.<sup>3</sup> Sociobiologists, including DeVore, assumed this moniker as a rallying cry against criticisms of fellow Harvard professor E. O. Wilson's book, *Sociobiology* (1975).<sup>4</sup> This paper brings these debates—each well studied on its own—into juxtaposition. I argue that evolutionists embraced a reinvigorated scientism in response to criticisms from rising political activism within the Right. Scientists chose to emphasize that science, properly managed, constituted the only reliable method by which to answer fundamental questions about the intricacies of human nature and the social order. In turn this stance conditioned their responses to a second set of critics from within the academy and to whom they devoted considerably more attention a few years later. These dual criticisms were manifestations of the same cultural moment and acted to mutually reinforce ideas among evolutionists that true science must be value-free.<sup>5</sup>

In the 1970s increasing numbers of conservative evangelicals and Catholics were injecting new energy into the conflict thesis between science and religion. At the heart of their disappointment with science as a body of thought were evolutionary and anthropological theories of human nature. Whereas evolutionary depictions of the slow, progressive emergence of human nature imbued humanity with secular origins, anthropological studies of peoples around the globe reflected the value of each culture, whether democratic, communal, or matrilineal. These conservatives feared that together secular humanism and cultural relativism would slide into moral relativism and decay within the American polity.<sup>6</sup> Yet professional evolutionists—preoccupied with more local affairs—largely refused to engage with these debates and appear to have dismissed the arguments of antievolutionary conservatives as the ravings of an ill-educated public that would eventually fizzle without their intervention.<sup>7</sup> (This proved to be a significant miscalculation.)

Sociobiologists in this decade paid far more attention to pointed critiques from fellow scientists. For critics of sociobiology, reducing human experience to a wholly biological explanation denied individual agency and therefore worked against reformers' efforts to curb the effects of racism and sexism in society—evidence, they posited, that sociobiologists themselves were politically motivated. Both sides of the debate claimed that the latest scientific evidence supported their claims. Whose science was more robust? Whose science was the most influenced by “ideological” perspectives? In these debates conservatism, feminism, and Marxism all became equally suspect political causes that could produce biased science.<sup>8</sup> In creating a bulwark against purported social influences on science, sociobiolo-

gists resolutely embraced scientism, which would shape their reactions to continued debates with creationists in the coming decades.

The rancor of these debates, both within and outside the academy, came as a surprise to many of the participants.<sup>9</sup> After the Second World War evolutionists had crafted a progressive evolutionary theory in which religious and evolutionary perspectives were woven together to explain the “ascent” of man from an animal heritage.<sup>10</sup> As political attitudes realigned as part of and in response to the countercultural changes of the 1960s, however, the power of this vision began to break down with resistance from both a newly articulated Left and Right. In this chapter I describe how—for complex reasons—the idea that science and religion were antithetically opposed found new energy among some evolutionists and some Christian conservatives in the 1970s and 1980s.<sup>11</sup>

As an evolutionist deeply embroiled in the debates over sociobiology, and closely involved in creating the first new science curriculum that conservatives largely succeeded in removing from public school classrooms, Irvén DeVore experienced both of these debates firsthand. Despite the political, religious, and scientific constraints in which DeVore and others operated, his story—of a retreat from the public eye and a retrenched belief in the power of science—illustrates how easily the idea of a necessary conflict between science and religion came to grip a subset of Americans across the political spectrum.

## MORAL DICHOTOMIES

In the 1960s DeVore’s research publications on baboon behavior had brought him to the attention of the social anthropologist Douglas Oliver at Harvard University, who was deep in the early stages of designing a multiyear anthropology curriculum for grade school children. Called “Man: A Course of Study” (MACOS), Oliver intended the program to introduce students to a range of human cultures and thought it would be helpful to include a unit comparing humans to our simian relatives.<sup>12</sup> He offered DeVore a temporary position at Harvard to work on filming and developing course materials for MACOS, and DeVore successfully transmuted this into a tenure-track faculty position. DeVore loved telling stories, and after eight years of high school and college training in public speaking, he told them well, even if film constituted a new medium for him.

When Oliver left the program after only a few years, the cognitive psychologist Jerome Bruner took his place as director and produced a polished curriculum that first appeared in grade schools in the fall of 1970. Bruner put into practice the educational principles he had developed in *The Pro-*

*cess of Education* (1960) by asking students to systematically develop their own answers to questions like “What is human about human beings?” “How did they get that way? How can they be made more so?”<sup>13</sup> Asen Balikci contributed ethnographic research on a Netsilik community living in current-day Nunavut, and DeVore crafted materials based on his careful analysis of baboon social interactions. Both men produced films that removed all indications of the scientists involved in their creation. This strategy allowed students to embody these researchers, to imagine themselves as the anthropologist or expert on animal behavior, padding through the windswept snow or navigating the grassy savannah.

As soon as it was released as a commercial product in 1970, MACOS caught the attention of conservative textbook watchers. By 1975 locally coordinated attempts to get MACOS ousted from elementary schools where it had been adopted had gained the attention of James J. Kilpatrick, a well-known conservative columnist and interlocutor on *60 Minutes’* Point-Counterpoint, who denounced the program as teaching innocent children “the moral values of a primitive, nearly extinct tribe—and those of the baboon.”<sup>14</sup> Congressman John B. Conlan (R-AZ) amplified the attack on MACOS in Washington, DC, on the floor of the House of Representatives.<sup>15</sup> He contended that MACOS should never have received federal funding and a similar program already under development by some of the same personnel for high school students should be immediately halted.

Grassroots objections to the program had been growing apace.<sup>16</sup> Throughout the 1970s Christian conservatives worried about the violence in American cities, the breakdown of “traditional” family values, the lawlessness of Hollywood, the horror of mainstream comic books, the licentiousness of the counterculture, government intervention in the education of their children, and more. At the core of these issues, they believed, lay a common cause—the moral decay of American hearts and minds. Conlan gave voice to these concerns when he testified as a congressman at a Billy Graham crusade in Jackson, Mississippi, arguing “Christians don’t have to be second class citizens.”<sup>17</sup> If “secular humanism” had once been confined to the halls of higher education, he suggested, the National Science Foundation-funded post-Sputnik science curricula for grade-school children represented elite professors adapting this perspective for children at their most impressionable.<sup>18</sup> While lawyers and education experts sought legal strategies for challenging the curricula in court, conservative politicians like Conlan tried to stop the production of new science curricula at the source—funding from the National Science Foundation (NSF).<sup>19</sup>

As a second-term member of Congress, Conlan served as a member

of the House Subcommittee on Science and Technology, which oversaw approval of the NSF's annual budget. Together with Bill Bright's Campus Crusade for Christ and Howard Kershner's Christian Freedom Foundation, he helped to produce books like *In the Spirit of '76: The Citizen's Guide to Politics* (1975), a "handbook for winning elections" designed to increase the visibility of politicians who identified as Christian conservatives.<sup>20</sup> In the name of fiscal responsibility, Conlan had already begun to dismiss numerous zoological and social science projects funded by the agency as "absurd," including one study on "adaptation of lizards in Yugoslavia" and another on "the smell of perspiration from Australian aborigines."<sup>21</sup>

With these ideals at his back, Conlan attacked MACOS with a three-pronged strategy demonstrating his conservative credentials and Christian commitments. He denounced the program as secular humanist. He suggested the curriculum materials encouraged cultural relativism in the minds of its students and forced them to interpret the moral values of their parents as simply one system of belief among many. He also insisted that the purportedly scientific content of the program exposed previously innocent children to violence, promiscuity, and a litany of other evils, all through the suggestive medium of film. As the director of the NSF, H. Guyford Stever attempted to get ahead of Conlan's objections. In March 1975 Stever wrote to Congressman Olin E. Teague, chair of the subcommittee, that no more funds would be made available to MACOS and he would additionally allocate no money to any curriculum implementation activities until he had time to conduct a thorough internal review of the Directorate for Science Education.<sup>22</sup> Conlan nevertheless continued his attack in April, in front of the entire House of Representatives, claiming that only a monstrous lack of oversight within the NSF could have allowed the program to be funded in the first place, reflecting a deep disconnect between government spending and public utility.<sup>23</sup>

Kilpatrick used his syndicated column to bolster Conlan's national profile and argued that progressive educators were misguided in their praise of MACOS (and much else).<sup>24</sup> Educators claimed the curriculum merely raised value issues and did not coerce the students into a particular answer, but for Kilpatrick this was precisely the problem: "The barely concealed purpose of MACOS is indeed to teach children how to think—to think, that is, as Dr. Bruner would like them to think."<sup>25</sup> Conlan argued, and Kilpatrick wrote, that the Netsilik people, as a moral model for learning about humanity, were too violent, too primitive, and would ultimately break down the traditional American values families were struggling to instill in their children.<sup>26</sup> On the basis of support provided by conservative activists, and with



the gathering energy of parents and teachers who had already mobilized in the fight over the evolutionary content of the Biological Sciences Curriculum Study a few years earlier, Conlan raised as many provocative questions as he could. Had MACOS received funding because the peer review system was broken? Were there financial irregularities with royalties owed to the federal government? Was the program teaching explicit values to the students? Should the books contain a disclaimer to the effect that although NSF funds had been used in developing the course, that did not constitute federal endorsement?<sup>27</sup>

Supporters of the National Science Foundation interpreted Conlan's criticisms of MACOS as an attempt to restrict their academic freedom and undercut the importance of basic research in the sciences—especially when he proposed that all NSF grants should be cleared by Congress before any monies were disbursed.<sup>28</sup> Senator Edward Kennedy spoke out against this plan, objecting that it would create an unreasonable administrative burden for both the NSF and for Congress. Even staunch NSF critic William Proxmire blanched at the possibility of turning politicians into grant administrators.<sup>29</sup> For Conlan the whole peer review system appeared to rely on the questionable authority of scientific experts with little attention to the interests of taxpayers. These debates touched a nerve in the larger scientific community, and Kennedy submitted a number of letters he had received into the *Congressional Record* as a means of documenting their displeasure with the proposal. Among them was a letter from David Mayhew, associate professor and director of Graduate Studies for Political Science at Yale, who wrote, “I can’t think of a better way to destroy the NSF than to allow this Amendment to make it to the statute books. Academics are flaky enough in handing out money for scholarly projects, but, with all due respect, politicians would be a lot worse.”<sup>30</sup> Several others compared this proposed direct government regulation of science to past events in the Soviet Union. Marshall Haith, a physician at the University of Denver, claimed that to make peer review a process of political judgment risked “creating a Lysenko system which can only impede free thought and reduce the likelihood of creative breakthroughs.”<sup>31</sup> The arguments over MACOS, in short, gave national prominence to discussions over the limits of science as a way of knowing and the capacity of scientists to self-govern.

Despite strong support in Congress for continuing the curriculum efforts of the NSF more broadly, Conlan succeeded in blocking further disbursement of any federal funds to support MACOS. The NSF dramatically curtailed its investment in curriculum development.<sup>32</sup> Peer review policies at the NSF changed to rely less on the judgment of the program officer and

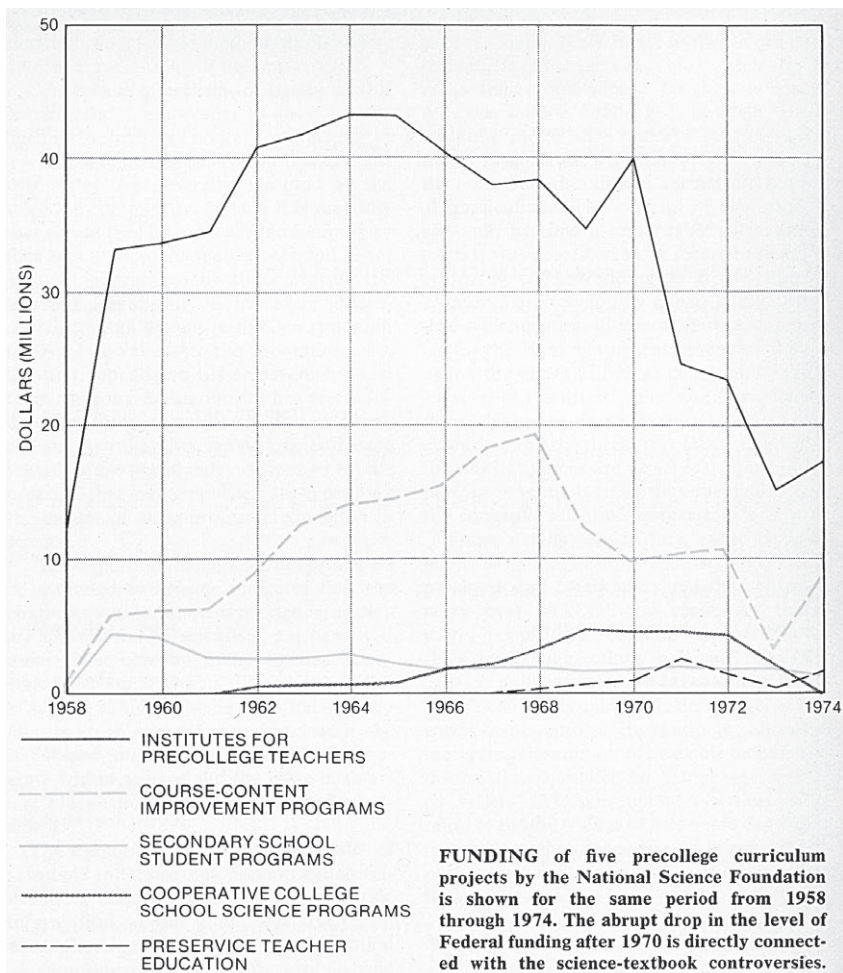
more on feedback from external reviewers.<sup>33</sup> One journalist found it “ironic that one of the effects of the curriculum movement is likely to be its own termination.”<sup>34</sup>

The education experts Onalee McGraw and Dorothy Nelkin—one sympathetic to MACOS’s critics, the other to its developers—each reflected on the lessons to be learned from the episode. McGraw published her *Secular Humanism and the Schools: The Issue Whose Time Has Come* with the Heritage Foundation in 1976, which distributed copies for free to anyone who asked. McGraw argued that humanistic education had replaced “basic education” and caused “the precipitous deterioration of learning achievement in our schools.”<sup>35</sup> MACOS constituted her key example of an educational program that eroded students’ beliefs in “eternal truths,” like the “Ten Commandments.” In the coming years her association with the Heritage Foundation allowed her to stay in touch with “hundreds of state and local groups” around the country.<sup>36</sup>

Nelkin, on the other hand, started with an article in *Scientific American* in which she distilled recent controversies over science textbooks into three main themes, again using MACOS as a prime example (fig. 1.2).<sup>37</sup> She asserted that a “non-negligible fraction” of Americans believed that science threatened their religious and moral values, a sign of a larger disillusionment with science itself. Additionally she suspected this hostility emerged from the nexus of authority and professionalism behind the creation and initial enthusiastic reception of the new science curricula. Finally Nelkin suggested critics feared that the meritocratic processes of science would erase a more egalitarian, pluralistic vision of society. All of these issues framed the conflict over MACOS as a result of textbook critics’ anxieties with changes in postwar society. In her subsequent slim monograph, published with MIT Press in 1977, she noted that the fundamentalism of conservatives had been matched by the literalism of scientists. Responsibility lay with them too. “Scientists are convinced of the rationality and merit of their methods,” she wrote, “and constantly dismayed by the popularity of nonscientific approaches to nature.”<sup>38</sup> In Nelkin’s estimation, both science and religion purported to provide a coherent vision of reality, but scientists had failed to recognize their version was insufficient for many Americans.<sup>39</sup>

The legacy of MACOS resides in the reinvigorated debates over the potential conflict between moral and scientific perspectives. *Scientific American* published four letters to the editor responding to Nelkin’s article, of which two drew readers’ attention to the limits of science—“its non-rational bases, its limitations, its struggles to find truth”—and suggested that evolutionary explanations were unfalsifiable and therefore fell “outside





**Figure 1.2:** Federal funding for precollege science education dropped noticeably by the mid-1970s. The kerfuffle over MACOS led the NSF to end its monetary support for the development of new precollege science curricula. Source: Dorothy Nelkin, "The Science-Textbook Controversies," *Scientific American* 234/4 (1976): 37. Credit: Total Communications Industries, Ltd.

the realm of science strictly defined."<sup>40</sup> A scientist from the Max Planck Institute for Nuclear Physics also wrote to place the MACOS episode in a broader context, invoking the Galileo affair.<sup>41</sup> In Nelkin's reply to the letters (she read them all, even those not printed), she noted that several of the "unfriendly" responses accused her and others of "'religiously' adhering to science."<sup>42</sup>

To postwar conservative activists, then, secular humanism (with evolu-

tion as a key tenet) had come to represent the fundamental conflict between biological explanations of human nature and religious ones. This gathering storm, however, barely registered with professional evolutionists. None of the scientists involved in creating MACOS engaged publicly in these debates.<sup>43</sup> In 1972 Bruner had left Harvard for the faculty at Oxford but kept in touch with his friends and followed the news about MACOS's trouble. Bruner wrote to a MACOS colleague in Cambridge that he was "very reluctant to get into a show-down with Kilpatrick and I am not sure how best to proceed by way of getting something into the Congressional Record."<sup>44</sup> Friends in England had urged him to ignore the press, he noted, and he was inclined to agree. The "anti-intellectual hounds" in Congress presented a different scale of problem, and Bruner wrote that he stood "ready to enter the fray if anything can be served by it."<sup>45</sup> (He never did.) The other professors who had worked on MACOS in the 1960s had also moved on to new projects. Although at least once DeVore spoke out at Harvard against the Congressional attacks, he never traveled to Washington.<sup>46</sup> As an explanation for his hesitancy to defend MACOS, DeVore later suggested that although he loved lecturing in front of classes, he disliked writing and published very little for popular audiences.<sup>47</sup> Perhaps more honestly, DeVore's attention was caught up in debates over sociobiology, evolution, and human nature that hit closer to home.

## SCIENTIFIC DILEMMAS

In his early years at Harvard DeVore found new academic collaborators. As he settled into his faculty position, he developed one of the university's most enduringly popular science courses known to the undergrads as "Sex."<sup>48</sup> The first several times time he taught the class, he worked on the material for lectures with Robert Trivers, whom he had met as part of the MACOS curriculum development team. Trivers, for his part, had been so taken with the evolutionary theory he had learned in writing short books for the MACOS team that he decided to pursue a PhD in the topic with DeVore as his advisor. Immediately following Trivers's successful defense of his thesis, the Biology Department hired him. Trivers introduced DeVore to a new, mathematical way of thinking about evolutionary theory gleaned from his reading of British theoretical biologists like John Maynard Smith, W. D. Hamilton, and George Price.<sup>49</sup> After learning the basics of game theory, prisoners' dilemmas, parental investment, and more, DeVore underwent what he later referred to as a "conversion experience." "I didn't mean anything mystical by that," he added. "Saul on the road to Tarsus has a vision, and he falls down and stands up, and he's Paul the Apostle. That's what a wrench

it was.”<sup>50</sup> The son of an itinerant Methodist minister, DeVore remembered his biblical references long after he became an atheist in college.<sup>51</sup> (Other scientists might have used the phrase “paradigm shift”—his meaning was about the same.<sup>52</sup>) This put him on a collision course with his former advisor, Washburn, and like-minded evolutionary anthropologists.

By 1975 DeVore and Trivers were together training a cohort of graduate students and postdocs interested in applying evolutionary theory to animal and human behavior. A diverse group of students and faculty gathered on Thursday evenings for DeVore’s “simian seminar” and talked well past dinner about evolution and behavior. Conversation was never restricted to primates alone but drifted according to the interests of the participants, from Trivers’s fascination with lizards to Alan Walker’s paleoanthropological research, and everything in between.<sup>53</sup> Although Edward O. Wilson—the world’s living authority on the social behavior of ants who taught in the same department as Trivers—attended DeVore’s seminar only sporadically, he was preoccupied with similar topics and methods. When Wilson published his manifesto *Sociobiology: The New Synthesis* that summer, he capitalized on the sensational popularity of animal behavior as a tool for thinking about human evolution after the Second World War. The members of DeVore’s “simian seminar” numbered among his most ardent defenders and came to call themselves sociobiologists.

By asserting their return to a Darwinian precept of natural selection acting on individuals (rather than groups) and as fundamentally concerned with reproduction (rather than mere survival), sociobiologists like Wilson, DeVore, and Trivers believed they were placing evolutionary analyses of human behavior on a new, firm theoretical ground. Vociferous attacks on sociobiology served to galvanize this international band of fellow travelers and provided a sense of shared identity.<sup>54</sup> Throughout *Sociobiology*, Wilson utilized the tools of ethology, population biology, and evolutionary theory to discuss the evolution of social behavior in a wide array of animals. He wrote that he hoped to “transform the insights of ancient religions into a precise account of the evolutionary origin of ethics.”<sup>55</sup> In his final chapter—“Man: From Sociobiology to Sociology”—he turned this analytical perspective on humanity. He asked his readers to contemplate “the enduring paradox of religion” which remained a “driving force in all societies” even though “so much of its substance is demonstrably false.”<sup>56</sup> He further suggested that by the end of the twenty-first century, sociological and religious questions would be resolved by neurobiology and explanations at the cellular level. Biologists would be far closer to determining a “genetically accurate and hence completely fair code of ethics.”<sup>57</sup> (The divisive politics of academic

culture would be resolved by then, too, he hoped.) Wilson dreamed of a more unified, more complete knowledge of what it meant to be human, and trusted that the study of animal behavior would substantially contribute to the understanding of our nature.

Critics of *Sociobiology* concentrated their objections on Wilson's final chapter, seeing in his vision a reckless distortion of the present. At the American Association for the Advancement of Science meeting in 1977, Washburn spoke out vehemently against Wilson and the entire sociobiological perspective as applied to humanity. The problem had started long before Wilson, he suggested. Popular interest in animal behavior had spilled over into attempts to use this knowledge to solve humanity's problems.<sup>58</sup> Wilson had built on the popular success of these books, Washburn insisted, and made "precisely the same mistakes." Washburn contended that Wilson's "facile attribution of genetic causes to contemporary human social behaviors" repeated errors of the deeper past echoing the genetic reductionism of social Darwinism and eugenics. In fact, he postulated, the practice was so common it needed a name: "gene-itis, the genetic disease." To avoid misunderstanding, Washburn clarified that he was not directing his comments at the interdisciplinary study of human biology, which he admired greatly, nor against the study of animal behavior or evolution. He was instead speaking out against the enthusiastic application of genetics in inappropriate situations, against ignoring history, against postulating genes for behaviors with no empirical knowledge of the underlying connections. (This is where his crescendo reached its climax.) "Gene-itis has been a part of our Western European culture for more than a century. It is time to cure that disease, whether it appears in the guise of eugenics, racism, or sociobiology."<sup>59</sup>

Washburn's denunciations of sociobiology were well practiced by 1977, and he joined a chorus of other disapproving voices. For critics of the idea that humans have innate behavioral tendencies, including gendered norms like aggression among men and nurturing among women, sociobiology joined their ranks as merely the latest in a series of theories that asserted the biological basis of human behavior. These critics linked sociobiology and the killer ape to older battles over naturalistic explanations of IQ differences between racially identified groups, claims that XYY men were more aggressive than their XY peers, and even eugenicists' beliefs that the future of humanity should be shaped by controlling the country's reproductive contribution to the next generation.<sup>60</sup> By conjoining these debates (which had previously been rather disparate) under the larger umbrella of "biological determinism," anthropologists and biologists argued that this purportedly new evolutionary framework was merely the latest in a series

of disreputable theories that had already been disproven in their previous guises.<sup>61</sup>

To alert new members to the dangers of sociobiological thinking and to galvanize the community of their existing membership, Science for the People began screening and discussing a film called *Sociobiology: Doing What Comes Naturally* at campuses around the country.<sup>62</sup> (Science for the People originally formed to protest their fellow scientists' complicity with the US military actions in Vietnam and in the 1970s expanded their purview to include a variety of social concerns.<sup>63</sup>) The twenty-minute film featured interviews with DeVore, Trivers, and Wilson—the evolutionists particularly associated with the theory even before Wilson published his book that named it. In 1972 a camera crew had arrived at Harvard University and asked to speak with each of them about their research. DeVore later recalled being told that the interviews were to be used in a Canadian television series and that they would be sent a transcript of the show before it aired. As he heard nothing, he forgot about it and assumed the film had never been made. Then in 1976 he received a mass mailing announcing the stand-alone documentary. He wrote for a copy of the film but received no response. So in December 1976 DeVore attended a screening of *Sociobiology: Doing What Comes Naturally* to see what all the fuss was about.<sup>64</sup>

The film introduced each of its main characters sensationally. “Super-theorist, Harvard biologist, Robert Trivers,” the voice-over intoned, as viewers caught a glimpse of Trivers, with shoulder-length hair and an unbuttoned long brown wool coat, walking briskly through a crowd of students toward the camera. “At Harvard, a noted anthropologist has been studying baboon societies for more than a decade, a specialist in the origins of behavior, Irvan DeVore.” DeVore appeared relaxed, speaking from a couch in his office, with African statues gracing the window over his shoulders. “The dream? To connect the behavior, the biological evolution of lower life forms, and to project them to understanding behavior in man, biologist Edward O. Wilson.” Viewers met Wilson in his laboratory, surrounded by ants and microscopes. The film used Trivers to introduce the power of natural selection to modify human social behavior; DeVore to suggest that men and women, like male and female baboons, serve distinct biological functions in human societies; and Wilson to postulate that such biological roles are spread throughout the animal kingdom. In *Doing What Comes Naturally* innate behavioral differences dividing the sexes were intimately bound to questions of warfare. As Trivers described the ritual of war, for example, he noted that warfare had a strong biological component to it—at least for men. Sociobiology, the movie suggested, provided a formidable set of tools

that identified a set of mathematical rules governing the social behavior of all animals, including humans.

While the short film presented sociobiological thinking as a novel branch of research, the sensational presentation and lack of concrete examples provided *Science for the People* with endless fodder. Like other critics of sociobiology, they emphasized the theory's continuities with earlier, "out of date" research traditions. It helped that the rules of "doing what comes naturally," as presented in the film, reinforced the stereotypically gendered behaviors with which anthropologists had been visibly wrestling for the last decade—men became human when they learned to hunt in a group, women when they stayed by the hearth to guard and nurture their young, and both when they learned to share the fruits of their efforts.<sup>65</sup> Rather than seeing cooperation as a basic human trait, the film chose to emphasize Trivers's statements about the inevitable conflicts that arise between all mothers and children, between men and women. Each governed by their own evolutionary and cultural dictates, the desires of one individual necessarily led to disagreements with others.<sup>66</sup>

DeVore was disappointed by what he saw and, we can imagine, harried by the conversation that followed the screening. Worse, he also received a variety of complaints and letters from colleagues about the film and its message. Believing that he needed to defend himself publicly, he wrote a brief note to the American Anthropological Association's *Anthropology Newsletter* seeking to distance himself, Wilson, and Trivers from the film.<sup>67</sup> He sought to combat what he saw as a gross misrepresentation of their ideas by arguing that they had nothing to do with the production of the film. The final product, he complained, was "a tasteless, sensationalized production that caricatured the field of sociobiology," all set to a "hard-rock musical background." (Indeed, the soundtrack and Trivers's flowing locks do more to convey the mid-1970s character of this moment than any other aspect of the film.) The filmmakers had included film clips of baboon behavior that DeVore had created for MACOS, footage owned by the Educational Development Center. DeVore urged the EDC to seek an injunction against further distribution of the film and request the recall of all existing copies. He added that he regretted "whatever costs, inconvenience, or embarrassment my colleagues may have suffered by the rental or purchase of this film," and asked fellow anthropologists to join him in discouraging the use and sale of the film. His statement did little to dissuade *Science for the People*. The Ann Arbor branch of its Sociobiology Study Group replied in the pages of the *Newsletter* that they intended to continue showing the film, although they also promised to read DeVore's letter to the audience in advance of



each screening.<sup>68</sup> Nowhere in DeVore's statement, they noted, did he, Wilson, or Trivers disavow the content of their arguments as presented in the film. They also screened the film at the annual meeting of the American Association for the Advancement of Science in 1978 as part of a two-day symposium in which scientists were to debate and defend sociobiology. All the attention, however, focused on protestors who notoriously doused Wilson with a pitcher of ice water just before he was scheduled to speak, yelling "Wilson, you are all wet!"<sup>69</sup>

As the debates over sociobiology wore on, the stakes for defending one position or another resolved into arguments over what constituted "good" science, where the "bad" alternative implied scientific ideas that had been unduly conditioned by the social milieu in which they had been conceptualized.<sup>70</sup> The most remarkable aspect of these debates was the ubiquity with which such accusations flew. As Ullica Segerstråle has argued in her operatic retelling of the debates over sociobiology, everyone believed they were on the side of truth (whether moral or absolute) and that those arguing against them were ideologically biased.<sup>71</sup> In this light the genetic rhetoric of sociobiologists' theories of human behavior proved to be both a resource and a curse. By claiming that natural selection acted at the level of the individual or the gene, they distanced their theories from accounts of evolution prevalent in previous decades. Yet critics of sociobiology turned this apparent advantage into the key piece of their attack, as they lumped together sociobiological theories of human behavior with other contested cases—such as claims that racial differences in IQ and differences in the behavior of the sexes were innate—under the larger umbrella "genetic determinism." In the face of these criticisms, sociobiologists and anti-sociobiologists alike retreated to scientism and derided their critics as politically motivated. Both sides advanced a worldview in which science was supposed to exist outside the bounds of moral or political judgment.

## CONCLUSION

Over the latter half of the 1970s, for the New Left evolutionary theory symbolized conservative resistance to social change, written in the language of biological essentialism and responding to the same retrenchment against identity politics that characterized the rise of Christian conservatism. From the perspective of the politically active New Right, evolutionary theory embodied a radical "secular humanism," one of the most significant threats to moral order of the twentieth century. Caught in the middle, the progressive (even transcendent) vision of human nature so popular two decades earlier began to unravel, and the idea of a necessary conflict of

political and scientific perspectives found new traction among some conservative religious activists and scientists. From the perspective of Irvn DeVore and other sociobiologists in the 1970s, scientific creationists were just as much a result of identity politics as leftist Marxists and feminists. Each community drew its own line between truth and ideology. Even if these demarcations differed in the way they carved the intellectual landscape, together they reinforced that the boundaries of truth were the stakes worth fighting over.

By the 1980s suspicions of evolutionary theory from the Left and the Right exploded into the well-documented battles over evolution in American classrooms.<sup>72</sup> Under President Ronald Reagan's administration, the NSF entirely dismantled its precollege education directorate. For many scientists involved in the MACOS affair, the divisive program "contributed materially" to that decision.<sup>73</sup> Simultaneously Tim LaHaye, a San Diego preacher and founding member of the Moral Majority, popularized a crusade against "secular humanism" with the religious Right through writings like *Battle for the Mind* and the *Left Behind* novels.<sup>74</sup> DeVore, like most working scientists, ignored the battles, continued his research, published articles, and taught his classes. Publicly engaged evolutionists redoubled their efforts to separate religious and scientific truth. A fierce critic of sociobiology, Stephen Jay Gould attempted a truce, NOMA, in which he deemed science and religion "Non-Overlapping Magisteria" (fig. 1.3).<sup>75</sup> Gould's solution erased the complex intellectual landscape of postwar evolution, in which evolution could lead (among other possibilities) to humans' appreciation of God's power. In its place were two static worldviews, supported equally by Christian conservative activists and staunch defenders of science. Of the same generation, Richard Dawkins and other evolutionists would eventually follow in Wilson's footsteps (not Gould's) and declare religion itself to be the result of evolutionary selection for social cohesion, calling themselves "new atheists."<sup>76</sup>

As the historian Peter Harrison has argued, histories of secularization have often presumed that the rise of scientific thinking caused a decrease in the perceived relevance of religion to the modern political or social order.<sup>77</sup> In a similar vein, Ian Hunter suggested that histories of secularization, from at least the nineteenth century, "should be regarded as disguised program-statements for rival cultural-political factions in the present."<sup>78</sup> Building on these perspectives, it is helpful to see moments like those described in this paper—where scientists and religious figures came to see their public authority as zero-sum—as providing fertile ground for historical intervention. In such moments "conflicts" between science and religion gained



**Figure 1.3:** The image in *Natural History* that accompanied Gould’s article on “Non-overlapping Magisteria” included a wide array of overlapping symbols of scientific and religious authority, from Pope John Paul II to Charles Darwin. Despite Gould’s contention, the collage visually encapsulated the difficulty of parsing of any clear jurisdictional separation between intellectual and moral authority. Source: Stephen Jay Gould, “Nonoverlapping Magisteria,” *Natural History* (March 1997): 16–17.

rhetorical traction by denying the underlying complexity of their own origins. In the mid-1970s conservative Catholic and Protestant voices, both committed to political activism, aligned to critique the power of science as

a sufficient framework through which to understand what it meant to be human.<sup>79</sup> Contemporary evolutionists reinforced this perspective for their own purposes, in part to defend against criticisms from their left. These highly visible stances, recorded in the pages of newspapers and the *Congressional Record*, emerged synchronously with burgeoning attention among historians of science to the complexities of the relationships between “science” and “religion.”<sup>80</sup>

Despite historical evidence of the multitude of scientific and religious ways of understanding the world—how could the relationship between so many moving parts ever be simple?—to the broader public the polarization of science and religion into oppositional factions made it seem as if these localized debates had grown out of a purportedly universal conflict that had persisted for centuries, if not millennia. The remarkably different causal logics that led Cold War Christian conservatives and liberal evolutionists to embrace a rhetoric of necessary conflict were obscured by the incendiary politics of the era.

13. For a penetrating discussion of the role of conflict in complexity, see Geoffrey Cantor, “What Shall We Do with the ‘Conflict Thesis’?,” in Dixon, Cantor, and Pumfrey, *Science and Religion*, 283–98.

14. John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge: Cambridge University Press, 1991), 33.

15. The attempt to critically evaluate the complexity principle distinguishes this edited collection from the valuable festschrift in honor of John Brooke published almost ten years ago. See Dixon, Cantor, and Pumfrey, *Science and Religion*.

16. Dixon, Cantor, and Pumfrey, *Science and Religion*, includes chapters by Küçük, Hameed, and Sivasundaram that tackle this theme. See also Yiftach Fehige, ed., *Science and Religion: East and West* (London: Routledge, 2016).

17. Ronald Numbers, “Simplifying Complexity.”

18. For an excellent study of how the history of the book intersects with the history of science and religion, see Jonathan R. Topham, “Science, Religion, and the History of the Book,” in Dixon, Cantor, and Pumfrey, *Science and Religion*, 221–43. For recent work on the history of science and communication, see the section on “Communication,” in *A Companion to the History of Science*, ed. Bernard Lightman, 329–441 (Chichester, UK: John Wiley and Sons, 2016).

19. Alan G. Gross, *The Scientific Sublime: Popular Science Unravels the Mysteries of the Universe* (Oxford: Oxford University Press, 2018).

20. John Brooke and Geoffrey Cantor, *Reconstructing Nature: The Engagement of Science and Religion* (Edinburgh: T & T Clarke, 1998), 22.

21. Ronald L. Numbers, “Simplifying Complexity,” 264.

22. For a recent edited collection that develops the notion of the idea that wouldn’t die, see Jeff Hardin, Ronald L. Numbers, and Ronald A. Binzley, eds., *The Warfare between Science and Religion: The Idea that Wouldn’t Die* (Baltimore: Johns Hopkins University Press, 2018).

23. Samuel P. Huntington, *The Clash of Civilizations and the Remaking of the World Order* (New York: Simon and Schuster, 1996).

## ONE: THE STIGMATA OF ANCESTRY

I am deeply grateful to all of the symposium participants of the “Science and Religion: Exploring the Complexity Thesis,” at the International Congress of the History of Science, Technology, and Medicine in July 2017, to our organizer, Bernie Lightman, for his expert skills in editing (and herding) historians, and to two anonymous referees of this volume. Thanks also to Andrew Buskell, Nicholas Hopwood, Anya Plutynski, Jean-Baptiste Gouyon, and other participants of the conference “United Fronts: Unity, Organisation and Syntheses in Twentieth Century Life Sciences” in May 2018 at the University of Cambridge. I am equally indebted to Myrna Perez Sheldon for her insightful comments and shrewd suggestions. Thank you, all.

*Epigraph:* Jacques Monod, *Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology*, trans. Austryn Wainhouse (New York: Knopf, 1971), 160.

1. Peter Ellison, “A Conversation with Irven DeVore,” *Annual Reviews Conversations* [first published online on Nov. 14, 2012; interview conducted on May 22, 2012]: quotes on 3–4, DOI: 10.1146/annurev-conversations-010913-100006.

2. Edward J. Larson, *Trial and Error: The American Controversy over Creation*



and *Evolution*, 3rd ed. (1985; New York: Oxford University Press, 2003); Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design*, expanded ed. (1992; Cambridge, MA: Harvard University Press, 2006); Matthew Sutton, *American Apocalypse: A History of Modern Evangelicalism* (Cambridge, MA: Belknap Press of Harvard University Press, 2014).

3. Ullica Segerstråle, *Defenders of the Truth: The Battle for Science in the Sociology Debate and Beyond* (New York: Oxford University Press, 2000); Kelly Moore, *Disrupting Science: Social Movements, American Scientists, and the Politics of the Military, 1945–1975* (Princeton, NJ: Princeton University Press, 2008).

4. Edward O. Wilson, *Sociobiology: The New Synthesis* (Cambridge, MA: Belknap Press of Harvard University Press, 1975).

5. On the retreat to “objectivity” in the face of critics, see Theodore Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton, NJ: Princeton University Press, 1995).

6. To make things more complicated, many conservative Christians in this era supported a wide range of other scientific activities, like NASA’s space program; see Neil M. Maher, *Apollo in the Age of Aquarius* (Cambridge, MA: Harvard University Press, 2017), 183–227. Additionally, by the 1990s an increasingly popular “complementarian theology” among evangelical pastors even used sociobiology and evolutionary psychology to justify traditional gender roles; see Myrna Perez Sheldon, “Wild at Heart: How Sociobiology and Evolutionary Psychology Helped Influence the Construction of Heterosexual Masculinity in American Evangelicalism,” *Signs* 42, no. 4 (2017): 977–98.

7. On the proximate reasons evolutionists would have been wary of engaging in debates it might be better to ignore, see William Dejong-Lambert and Nikolai Kremontsov, eds., “On Labels and Issues: The Lysenko Controversy and the Cold War,” special issue, *Journal of the History of Biology* 45, no. 3 (2012).

8. For example, see Ethel Tobach, “. . . Personal Is Political Is Personal Is Political . . .,” *Journal of Social Issues* 50, no. 1 (1994): 221–44.

9. On the swiftly escalating debates over sociobiology, see Segerstråle, *Defenders of the Truth*, 13–34; on divisive academic politics across a broader range of issues, see Daniel T. Rodgers, *Age of Fracture* (Cambridge, MA: Harvard University Press, 2011).

10. On ideas of progress in evolutionary theory, see Peter Bowler, *The Invention of Progress: The Victorians and the Past* (Cambridge, MA: B. Blackwell, 1989); Matthew Nitecki, ed., *Evolutionary Progress* (Chicago: University of Chicago Press, 1988); Robert J. Richards, *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* (Chicago: University of Chicago Press, 1987); Michael Ruse, *Monad to Man: The Concept of Progress in Evolutionary Biology* (Cambridge, MA: Harvard University Press, 1996); and Vassiliki Betty Smocovitis, *Unifying Biology: The Evolutionary Synthesis and Evolutionary Biology* (Princeton, NJ: Princeton University Press, 1996).

11. John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge: Cambridge University Press, 1991). Charles Darwin’s articulation of evolutionary theory became a touchstone for exploring the history of science and religion, including Brooke’s own research—see his chapter on “Evolutionary Theory and Religious Belief.”



12. On the history of MACOS, see Erika Milam, "Public Science of the Savage Mind: Contesting Cultural Anthropology in the Cold War Classroom," *Journal of the History of the Behavioral Sciences* 4, no. 3 (2013): 306–30; and Jamie Cohen-Cole, *The Open Mind: Cold War Politics and the Sciences of Human Nature* (Chicago: University of Chicago Press, 2014).

13. Jerome Bruner, *The Process of Education* (Cambridge, MA: Harvard University Press, 1961); Jerome S. Bruner, "Man: A Course of Study," *ESI Quarterly Report* (1965): 3–13.

14. James J. Kilpatrick, "Everything about Gulls, Baboons and Eskimos," *Washington Star*, Apr. 24, 1975.

15. For a view of these events from inside the NSF, see Richard C. Atkinson, "The Golden Fleece, Science Education, and U.S. Science Policy," *Proceedings of the American Philosophical Society* 143, no. 3 (1999): 407–17.

16. Onalee McGraw [misprinted as McCraw], director of Curriculum, Citizens United for Responsible Education (CURE), "Man: A Course of Study," letter to the editor, *Washington Post*, Apr. 3, 1973.

17. E. L. Stanford, *The History of Calvary Baptist Church, Jackson, Mississippi* (Jackson, MS: Hederman Brothers, 1980), 257–58. See also "John Conlan: His Testimony at a Billy Graham Crusade," undated [May 1975, Mississippi Memorial Stadium, Jackson, MS], <https://www.youtube.com/watch?v=4W0sZPDFcGU>. Two hundred eighty-one thousand people attended over the eight days of the crusade.

18. Institute for Creation Research, *Acts and Facts* (June 1975), as quoted in Dorothy Nelkin, *Science Textbook Controversies and the Politics of Equal Time* (Cambridge, MA: MIT Press, 1977), 54. See also John Rudolph, *Scientists in the Classroom: The Cold War Reconstruction of American Science* (New York: Palgrave, 2002).

19. Christopher Toumey, "Evolution and Secular Humanism," *Journal of the American Academy of Religion* 61, no. 2 (1993): 275–301, and *God's Own Scientists: Creationists in a Secular World* (New Brunswick, NJ: Rutgers University Press, 1994); Larson, *Trial and Error*, esp. "Legislating Equal Time, 1970–1981," 125–55.

20. *In the Spirit of '76: The Citizen's Guide to Politics* (Washington, DC: Third Century Publishers, 1975). On Conlan's association with Bright, see John G. Turner, *Bill Bright and Campus Crusade for Christ: The Renewal of Evangelicalism in Postwar America* (Chapel Hill: University of North Carolina Press, 2009), 160–66.

21. John B. Conlan, "Frogs in the Bucket," *Chicago Tribune*, June 3, 1974.

22. Karen B. Wiley, "NSF Science Education Controversy: The Issues," *Social Science Education Consortium*, no. 26 (July 1976): 1–7.

23. James J. Kilpatrick, "Is Eskimo Sex Life a School Subject?" *Boston Evening Globe*, Apr. 2, 1975, 21.

24. On Kilpatrick's additional resistance to desegregation and position as an emerging conservative elite, see William P. Huswitt, *James J. Kilpatrick: Salesman for Segregation* (Chapel Hill: University of North Carolina Press, 2013). According to Huswitt, Kilpatrick shared with Norman Podhoretz his belief that the social sciences should not be allowed to dictate civil rights policy and an underlying conviction that blacks and whites could never be equal (161–66).

25. James J. Kilpatrick, "Is Eskimo Sex Life a School Subject?," 21; James J.

Kilpatrick, "Bay State Fifth-Grade Teacher Calls New Study Lethal Brainwash," *Boston Globe*, Apr. 25, 1975; "War Flares over Scientific Funds," *Boston Globe*, Jan. 20, 1976.

26. James J. Kilpatrick, "National Science Foundation under Fire," *Boston Globe*, Mar. 27, 1975, 31.

27. "Administration of the Science Education Project 'Man: A Course of Study,'" Report to the House Committee on Science and Technology by the Comptroller General of the United States, GAO Report (MWD-76-26). See also Philip M. Boffey, "Controversial Curriculum's Developers Face Tax Probe," *Chronicle of Higher Education*, May 19, 1975, 3.

28. John Walsh, "NSF: Congress Takes Hard Look at Behavioral Science Course," *Science* 188, no. 4187 (May 2, 1975): 426-28; John Walsh covered news of the MACOS controversy for *Science* throughout this period, and his many articles reveal how keenly scientists worried about the events unfolding in Congress.

29. "House Orders Monthly Review of NSF," *Science News* 107, no. 16 (Apr. 19, 1975): 253; Deborah Shapley, "Proxmire Hits NSF Research Priorities, Funding Flexibility," *Science* 183, no. 4124 (Feb. 8, 1974): 498; Constance Holden, "Social Science at NSF Needs Pruning, Says Proxmire," *Science* 185, no. 4151 (Aug. 16, 1974): 597; "Proxmire vs. NSF: Economizing or Baiting?" *Science News* 107, no. 11 (Mar. 15, 1975): 165; Robert Chiovetti Jr. and Anna Marie Mulvihill, "Proxmire, NSF and Basic Research," *Science News* (Apr. 5, 1975): 230.

30. David R. Mayhew to Edward R. Kennedy, (Apr. 23, 1975), reproduced in H.R. 4723, Hearings before the Special Subcommittee to the NSF of the Committee on Labor and Public Welfare to Authorize Appropriations to the NSF for FY1976, Mar. 14 and Apr. 21, 1975, US Senate, 94th Congress, 1st session S.1539 and S.1478, 702.

31. Marshall M. Haith to Edward R. Kennedy (May 12, 1975), 747-48, and Paul J. Davis to Edward R. Kennedy (May 12, 1975), 745; both in H.R. 4723.

32. Karen B. Wiley, "NSF Science Education Controversy: The Issues," *Social Science Education Consortium*, no. 26 (July 1976): 1-7.

33. Marc Rothenberg, "Making Judgments about Grant Proposals: A Brief History of the Merit Review Criteria at the National Science Foundation," *Technology and Innovation* 12 (2010): 189-95.

34. Wayne Welch, "Twenty Years of Science Curriculum Development: A Look Back," *Review of Research in Education* 7 (1979): 282-306, 303.

35. Onalee McGraw, *Secular Humanism and the Schools: The Issue Whose Time Has Come* (Washington, DC: The Heritage Foundation, 1976), 4.

36. Marguerite Michaels, "Public School Book Censors Try It Again," *Boston Globe*, Nov. 25, 1979, AB4-5.

37. Dorothy Nelkin, "The Science-Textbook Controversies," *Scientific American* 234, no. 4 (1976): 33-39.

38. Dorothy Nelkin, *Science Textbook Controversies and the Politics of Equal Time* (Cambridge, MA: MIT Press, 1977), 150.

39. Nelkin, *Science Textbook Controversies*, 151.

40. William H. Koenig, letter to the editor, *Scientific American* 234, no. 7 (1976): 6; Robert Kofahl, letter to the editor, *Scientific American* 234, no. 7 (1976): 6, 8.

41. N. L. Balazs, letter to the editor, *Scientific American* 234, no. 7 (1976): 8-9.

42. Dorothy Nelkin, letter to the editor, *Scientific American* 234, no. 7 (1976): 9.

43. Responsibility for defending MACOS instead fell to Peter Dow, an experienced educator and administrative director of the project, who earned his EdD in 1979 from Harvard; for his account of these events, see Peter B. Dow, *Schoolhouse Politics: Lessons from the Sputnik Era* (Cambridge, MA: Harvard University Press, 1991).

44. Jerome S. Bruner to Peter B. Dow, Apr. 8, 1975, Box 38, Folder 1, Gutman Library, Harvard University, Cambridge, MA (hereafter, MACOS Records).

45. Bruner to Dow, Apr. 12, 1975, Jerome Seymour Bruner, Unprocessed Accession 10823, Box 9B, Harvard University Archives, Cambridge, MA; Bruner to Dow, Apr. 8, 1975, Box 38, Folder 1, MACOS Records. Bruner found compelling Richard Hofstadter's *Anti-Intellectualism in American Life* (New York: Knopf, 1963). See also Peter B. Dow, *Schoolhouse Politics*, 199–249; John B. Conlan and Peter B. Dow, "Pro/Con Forum: The MACOS Controversy," *Social Education* 39, no. 6 (Oct. 1975): 388–96.

46. Judith Kogan, "Congressmen Attack Program that DeVore Helped Develop," *Harvard Crimson*, Apr. 8, 1975.

47. Author interview with Irven DeVore, Aug. 6, 2011; see also Irven DeVore, "Chimpanzee Behavior Revealing Clue to that of Humans," *Arizona Republic*, Dec. 17, 1971, 57.

48. The registrar designated the course Science B-29, Human Behavioral Biology; Bryan Marquard, "Irven DeVore, Celebrated Harvard Anthropologist, Dies at 79," *Boston Globe*, Sept. 29, 2014, B1; "'Sex' without DeVore," *Harvard Magazine*, Jan. 1, 2001.

49. Paul Erickson, *The World Game Theorists Made* (Chicago: University of Chicago Press, 2015), 204–39.

50. Ellison, "Conversation with Irven DeVore," 10.

51. Joseph P. Kahn, "The Professor of Carnal Knowledge: Harvard's Irven DeVore Knows What Turns Students on to Biology: Sex Talk," *Boston Globe*, Mar. 26, 1997, D1.

52. On the popularity of Thomas Kuhn's "paradigms" among evolutionary thinkers, especially paleobiologists, see Gregory Radick, "The Exemplary Kuhnian: Gould's *Structure* Revisited," *Historical Studies in the Natural Sciences* 42, no. 2 (2012): 143–57; and David Sepkoski, *Rereading the Fossil Record: The Growth of Paleobiology as an Evolutionary Discipline* (Chicago: University of Chicago Press, 2012).

53. Author interview with Richard Wrangham, May 7, 2012, Harvard University.

54. See especially Richard Dawkins's *The Selfish Gene* (New York: Oxford University Press, 1976), published the year after *Sociobiology*; Lily E. Kay, *Who Wrote the Book of Life? A History of the Genetic Code* (Palo Alto, CA: Stanford University Press, 2000).

55. Wilson, *Sociobiology*, 129.

56. Wilson, *Sociobiology*, 561.

57. Wilson, *Sociobiology*, 575.

58. Robert Ardrey, *Territorial Imperative: A Personal Inquiry into the Animal Origins of Property and Nations* (New York: Dell Publishing, 1966); Konrad Lorenz, *On Aggression*, trans. Marjorie Kerr Wilson (New York: Harcourt, Brace

& World, 1966); Desmond Morris, *The Naked Ape* (New York: McGraw Hill, 1967). Their ideas spread far more widely than the readers of their books, e.g., Erika Lorraine Milam, *Creatures of Cain: The Hunt for Human Nature in Cold War America* (Princeton, NJ: Princeton University Press, 2019).

59. Washburn's talk was recorded and later broadcast by radio; Laurie Garrett, prod., "Science Story: A Condemnation of Sociobiology," *Science Story*, KPFA, Berkeley, July 11, 1977, 29 min., Pacifica Radio Archives #AZ0027.07. Ironically, Wilson saw himself (and other organismal biologists) relegated to second-class status among Harvard biologists because he was not a molecular biologist working in a laboratory; see Edward O. Wilson, "The Molecular Wars," in *The Naturalist* (Washington, DC: Shearwater Press, 1995), 218–37.

60. On the gendered politics of research on X and Y chromosomes, see Sarah Richardson, *Sex Itself: The Search for Male and Female in the Human Genome* (Chicago: University of Chicago Press, 2013). On the legacy of eugenics, see Dorothy Nelkin and Susan Linde, *The DNA Mystique: The Gene as a Cultural Icon* (Ann Arbor: University of Michigan Press, 2004); and Nathaniel Comfort, *The Science of Human Perfection: How Genes Became the Heart of American Medicine* (New Haven: Yale University Press, 2012).

61. Segerstråle suggests that criticisms of *Sociobiology* conveniently picked up just as the energy in debates over race and intelligence was waning; *Defenders of the Truth*, 34.

62. Hobel Leiterman Productions, *Sociobiology: Doing What Comes Naturally*, (1976; New York: Document Associates, 1978), 21 min.

63. Moore, *Disrupting Science*, 158–80; "Science for the People: The 1970s and Today, conference," Apr. 11–13, 2014, University of Massachusetts, Amherst; videos and slides of talks available at <http://science-for-the-people.org/program/>.

64. Irvén DeVore, "DeVore Explains Sociobiology Film Interviews," *Anthropology Newsletter* 18, no. 8 (1977): 2, 14.

65. See, e.g., Dorothy Zinberg, "Past Decade for Women Scientists—Win, Lose, or Draw?," *Trends in Biochemical Science* 2, no. 6 (1977): N123–26; Harriet Zuckerman and Jonathan R. Cole, "Women in American Science," *Minerva* 13, no. 1 (1975): 82–102.

66. Robert Trivers, *Natural Selection and Social Theory: Selected Papers of Robert Trivers* (New York: Oxford University Press, 2002).

67. DeVore, "DeVore Explains Sociobiology Film Interviews," 2.

68. Doug Boucher, Fred Gifford, Sue Porter, Scott Schneider, and John Vandermeer (Sociobiology Study Group, Ann Arbor Science for the People), "Sociobiology Critics Speak Out," *Anthropology Newsletter* 18, no. 10 (1977): 19–20.

69. Segerstråle, *Defenders of the Truth*, 22–24.

70. Ethel Tobach and Betty Rosoff, eds., *Genes and Gender* (New York: Gordian Press, 1978), and *Genes and Gender II: Pitfalls on Research in Sex and Gender* (New York: Gordian Press, 1979).

71. See especially Segerstråle's introduction, *Defenders of the Truth*, 6–9.

72. Toumey, *God's Own Scientists*; Myrna Perez Sheldon, *Darwin's Heretic: Stephen Jay Gould, 1941–2002* (ms. in prep.).

73. John Walsh, "Science Education Redivivus," *Science* 219, no. 4589 (Mar. 11, 1983): 1198–99, 1198.

74. Tim LaHaye, *Battle for the Mind: A Subtle Warfare* (Old Tappan, NJ: Fleming H. Revell Company, 1980); Tim LaHaye and Jerry B. Jenkins, *Left Behind: A Novel of the Earth's Last Days* (Wheaton, IL: Tyndale House Publishers, 1995), followed by fifteen additional books in the series.

75. On Gould, see Myrna Perez Sheldon, "Claiming Darwin: Stephen Jay Gould in Contests over Evolutionary Orthodoxy and Public Perception, 1977–2002," *Studies in History and Philosophy of Science Part C: Studies in History of Philosophy of Biological and Biomedical Sciences* 45 (2014): 139–217; Sheldon, "Stephen Jay Gould and the Value of Neutrality of Science during the Cold War," *Endeavour* 40, no. 4 (2016): 248–55.

76. Richard Dawkins, *The God Delusion* (Boston: Houghton Mifflin, 2006); Daniel Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (New York: Viking, 2006); Jerry A. Coyne, *Faith versus Fact: Why Science and Religion Are Incompatible* (New York: Viking, 2015); Michael Ruse, *Atheism: What Everyone Needs to Know* (Oxford: Oxford University Press, 2015). On the indebtedness of the efflorescence of this literature to the science and religion battles of the 1980s, see Myrna Perez Sheldon, "Study of Science and Religion as Social Justice," *Historical Studies in the Natural Sciences* 46, no. 4 (2016): 538–47.

77. Peter Harrison, ed., "Narratives of Secularization," special issue of *Intellectual History Review* 27, no. 1 (2017): 1–169. As an alternative to these epistemological categories, Harrison advances a dynamic geographical perspective in which intellectual territories are reconfigured in time; Peter Harrison, *Territories of Science and Religion* (Chicago: University of Chicago Press, 2015).

78. Ian Hunter, "Secularisation: Process, Program, and Historiography," *Intellectual History Review* 27, no. 1 (2017): 7–29, 7. Tropes of secularization and science continue to be relevant today. Elizabeth Shakman Hurd's essay in this same special issue explores tropes of secularization in terms of foreign policy: "Narratives of de-Secularization in International Relations," *Intellectual History Review* 27, no. 1 (2017): 97–113.

79. Myrna Perez Sheldon and Naomi Oreskes similarly tackle how distrust about climate change science became associated with evangelical politics and political values starting in the early 1980s: "The Religious Politics of Scientific Doubt: Evangelical Christians and Environmentalism in the United States," in *The Wiley Blackwell Companion to Religion and Ecology*, ed. John Hart, 348–67 (New York: John Wiley & Sons, 2017).

80. For example, in *Science and Religion*, John Hedley Brooke pointed to the investment of the "new creationists" of the 1960s in "secular humanism" as the root cause of the recent "corruption of traditional religious values" (343).

## TWO: THREE CENTURIES OF SCIENTIFIC CULTURE AND CATHOLICISM IN ARGENTINA

I wish to thank Bernie Lightman for his untiring editorial help and criticism of the several versions of this paper. The comments by John Hedley Brooke and Peter Harrison as well as by other participants of the symposium decidedly helped to focus and sharpen the argument. Research conducive to this paper has been supported by Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina).

1. John Hedley Brooke and Ronald L. Numbers, eds., *Science and Religion*