

### 3. Evolution Education and the Science-Religion Conflict: Dispatches from a Philosophical Correspondent

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Charles Darwin tried to avoid it. Richard Dawkins, perhaps Darwin's greatest expositor, couldn't resist it. Darwin wrote,

It appears to me (whether rightly or wrongly) that direct arguments against Christianity & theism produce hardly any effect on the public; & freedom of thought is best promoted by the gradual illumination of men's minds which follow[s] from the advance of science. It has, therefore, been always my object to avoid writing on religion, & I have confined myself to science.<sup>1</sup>

Dawkins wrote *The God Delusion*, a 400-page polemic on the irrationality of supernatural theism, and the absurdity and immorality of much traditional religion. Perhaps it should not surprise that the most commercially successful book by Dawkins is also the book worst received by his colleagues in science and science education. Although many reviewers spoke admiringly of his intellectual integrity, they criticized him for what they regarded as a confrontational, combative stance on religion.

Throughout the work, Dawkins describes a conflict between science and religion that has been decisively won, in his view, by science. As the scientific picture of the world has grown more credible, especially since Darwin, the religious picture of the world has grown less credible. Dawkins uses evolutionary reasoning to argue that "there almost certainly is no God":

This book will advocate an alternative view: *any creative intelligence, of sufficient complexity to design anything, comes into existence only as the end product of an extended process of gradual evolution.* Creative

intelligences, being evolved, necessarily arrive late in the universe, and therefore cannot be responsible for designing it. God, in the sense defined, is a delusion....

The reception of *The God Delusion* was part of a larger ongoing debate in America, the United Kingdom, and elsewhere about the state of public understanding of science and science education. The debate is particularly intense in the United States, where close to half the public accepts young-earth Creationism,<sup>2</sup> and where well-organized and well-funded groups of religiously motivated activists continue to agitate against the teaching of evolution and for the inclusion of Creationist ideas in public school science curricula. In 2005, Pew Forum polling found that 64% of American adults favored the teaching of Creationism alongside evolution in public schools.<sup>3</sup> Moreover, Creationist activists often use the argument that evolutionary science is essentially atheistic and therefore that its inclusion in compulsory public schooling is tantamount to state indoctrination in atheism.

In the context of this social controversy over evolution and religion, many science educators and advocates discourage public discourse—such as Dawkins’—that emphasizes putative conflicts between science and religion. Such confrontational language, they maintain, is likely to increase the suspicion and alienation of religious citizens, ultimately hindering efforts to improve public understanding of science in general and evolution in particular. An alternative view, defended by prominent scientists such as Kenneth Miller of Brown University, and maintained as official doctrine by many religious communities, is that contemporary evolutionary science is logically and empirically compatible with the existence of a supernatural creator. One widely held attempt to embrace both evolution and a creator god is called theistic evolution, according to which the creator god’s intentions were in some way realized in the workings of natural selection and the other natural, law-like, causal processes that brought about the evolution of life. Over one third of the professional scientists in the U.S. accept some form of theistic evolution.<sup>4</sup>

Something like this view figured in a recent noted court case on the teaching of Creationism in American public schools. In *Kitzmiller et al. v. Dover Area School District et al.*, the U.S. District Court for the Middle District of Pennsylvania struck down a public school board policy that promoted “Intelligent Design,” a form of Creationism. Kenneth Miller was called by the plaintiffs to offer his expert testimony—as a professional biologist who is also a Christian—against Intelligent Design. Judge John E. Jones III, in his December 2005 opinion, commented on the Creationist contention that evolutionary theory is incompatible with supernatural theism:

Their presupposition is that evolutionary theory is antithetical to a belief in the existence of a supreme being and to religion in general. Repeatedly in this trial, Plaintiffs' scientific experts testified that the theory of evolution represents good science, is overwhelmingly accepted by the scientific community, and that it in no way conflicts with, nor does it deny, the existence of a divine creator.

The Dover decision was almost universally applauded by scientists, science educators, and commentators, and seen by many as confirmation of the strategic wisdom of emphasizing the consonance of science and religion in public debates about evolution and evolution education. For their part, public intellectuals such as Dawkins, who wish to address science-religion conflicts, will sometimes respond to such conciliatory rhetoric by pointing out that it can be misleading or even intellectually dishonest.

I have a name for the broad thesis that there exist important conflicts between science and religion: I call it *agonism*. Those who accept agonism—and also wish to publicly discuss such conflicts—are *agonists*. The view that there exist no important conflicts between science and religion I call *accommodationism*. Those who either recognize no conflicts between religion and science, or who recognize such conflicts but are disinclined to discuss them publicly, I call *accommodationists*. In this paper I examine the debate between agonists and accommodationists in the context of the evolution-Creationism controversy in the United States, using Dawkins' recent work as a case study.

I begin by identifying a number of different claims that tend to be conflated in this debate. The first distinction is between a strategic or practical critique of agonism and other sorts of critiques. The strategic critique is that agonism is not helpful in attempts to ensure excellent science education in the relatively near term. This must be distinguished from the claim that agonism is not helpful in increasing the public appreciation of science in the long term. Second, when it comes to the strategic value of agonism to ensuring excellent science education in the near term, the following two claims must be disambiguated:

1. As a communication strategy for influencing public opinion and policy, agonism is less effective than accommodationism in ensuring excellent evolution education in a highly religious society.
2. The mere presence of agonism in public discourse is detrimental to attempts to ensure excellent evolution education.

In what follows, I argue that there is presently no compelling evidence for (1). While (1) is predicted by general considerations drawn from psychology, sociology, political science, and opinion research, more study on this specific

empirical claim is required. However, I observe that the truth of (1) would not constitute evidence for (2). It may be the case that agonistic arguments fail as a strategy to persuade the relevant segments of the public that they should support evolution and oppose Creationism, but not the case that the mere presence of agonistic arguments in public discourse makes other such strategies less likely to succeed. In fact, there are plausible pre-theoretical grounds for thinking that the presence of agonistic perspectives in a public sphere that also includes accommodationist strategies actually makes the accommodationist strategies more effective.

### **What's Wrong with Accommodationism?**

Agonists often claim that the conflict model is better supported by the evidence and more philosophically coherent. There are, of course, many ways that religion could conflict with science. One family of possible conflicts is *epistemological*, in which some piece of scientific knowledge provides reason—either by logical implication or evidentiary weight—to reject some piece of religious or theological knowledge (or to reject the piece of scientific knowledge). Another family of possible conflicts is *psychological*. The idea here is that the lives of individual scientists who uphold traditional religious beliefs and practices are characterized by more confusion, intellectual tension, unresolved contradictions, self-deception, or “compartmental thinking” than would be the case were they to lack traditional religious beliefs and practices. A life that unites science and religion suffers from psychological inconsistencies, it might be claimed.

Sometimes accommodationists attack the conflict model as a matter of psychology, by asserting that many professional scientists are devout religious believers. They note, for instance, that at least a third of U.S. scientists accept some form of theistic evolution. Agonistic commentators can point out that the overall distribution seems to suggest that at least among Americans, the practice of traditional faith does tend to be corroded by the practice of science, and biology in particular. In a survey of members of the National Academy of Sciences in the U.S.,<sup>5</sup> only 7% expressed “personal belief” in “a God in intellectual and affective communication with humankind.” Biological scientists had the lowest rate of belief in a personal deity (5.5%) and immortality of the soul (7.1%). Compared with similar surveys by Leuba in 1913 and 1933, the rates of belief in a God and immortality among top scientists have declined significantly over the course of the 20th century. Some of the world’s most prominent public intellectual-scientists have rejected traditional religious belief: Albert Einstein, Richard Feynman, Carl Sagan, James Watson, Francis Crick, Steven Weinberg, Murray Gell-Mann, Andrei Sakharov, Richard Dawkins, E.O. Wilson, Stephen

Jay Gould, Steven Pinker, Donald Johanson, Richard Leakey, and others. Darwin himself was unable to reconcile his Christian heritage with the understanding of nature that he helped develop. Describing himself in later years as an agnostic, Darwin wrote in his *Autobiography*<sup>6</sup> that no benevolent and sovereign creator could be responsible for the evolutionary process, “for what advantage can there be in the suffering of millions of the lower animals throughout almost endless time.”

On the other hand, agonists can point out that conflict in the epistemological sense is compatible with concord in the psychological sense. A person can be inattentive to, or unaware of, epistemological conflicts among his beliefs; he may purposefully defer to a later date the resolution of conflicts he recognizes; or he may simply accept a high level of “cognitive dissonance.” Dennett<sup>7</sup> explores how someone might continue to profess religious beliefs publicly even though he does not understand, or is uncommitted to, the contents of those beliefs. In a religious society, there are various social and moral incentives to profess belief, even when one does not, in fact, believe. For all of these reasons, when accommodationists point to cases of psychological concord, agonists may remain unmoved. Agonists can acknowledge cases of psychological concord but insist that these cases leave untouched what they regard as the more interesting and important relationships: namely, the epistemological. (The general point—that psychological and epistemological conflicts can be decoupled—is one that accommodationists could use insofar as they want to claim that agonists experience conflict between science and religion despite the absence of any actual conflict: an instance of the psychological without the epistemological.)

Similarly, when accommodationists claim that science by its very nature can neither affirm nor deny anything supernatural (the kind of accommodationism expressed by a National Academy of Sciences<sup>8</sup> document: “The statements of science invoke only natural things and processes”), agonists can respond by pointing out that this restriction of the domain of science does not prevent epistemological conflicts with religion from arising. For instance: if it is true, and known by theology, that God created humans; and if it is true, and known by science, that humans are mildly polygamous primates; then it follows logically that God created mildly polygamous primates. The statement *God created mildly polygamous primates* is no less theological in character than the statement *God created humans*. Indeed, it may carry theological freight that *God created humans* does not. Certainly, the statement invokes a supernatural thing. Nevertheless, it is a theological statement that one has a scientific reason to adopt (relative to a background belief that God created humans). This is so despite the fact that *humans are mildly polygamous primates* invokes only natural things and processes.

Another way to put the point is that scientific knowledge can have theological implications (epistemologically speaking) even if scientific knowledge neither affirms nor denies anything supernatural.

To take a somewhat more controversial example, Grunbaum<sup>9</sup> argues that the theological doctrine of continuous creation (which posits that all contingent energy would cease to exist if God's sustaining power were removed) is logically incompatible with the physical doctrine of conservation of energy. Generally, when agonists speak of (epistemological) conflicts between science and religion, they mean that certain features of our world as disclosed by science are better explained by supposing that they are the products of non-rational causal forces, rather than the work of a supernatural agent. In this sense, scientific knowledge can provide evidence against theism, on their view. This is so regardless of whether science can or cannot invoke the supernatural, and despite the peaceful psychological coexistence of religious belief and scientific practice in the lives of many.

### **What's Wrong with Agonism?**

Reviewing *The God Delusion* for *Nature*, Krauss<sup>10</sup> reports that he was

struck at how Dawkins' presentation, particularly in the early chapters where he builds his case against God, might offend those who, like myself, are quite sympathetic to his central thesis. I suspect that few thinking people of faith are unaware of the remarkable evil that has been done in the name of God, or the possibility that, although most cultures worship some god, this could be a mere reflection of the workings of the human brain rather than definitive evidence for God's reality. . . . At the very least I find it doubtful that constantly questioning the intelligence of "true believers" will be helpful in inducing any such reader to accept Dawkins' strongly argued thesis that both God and religion are nonsensical and harmful.

Krauss questions whether Dawkins' confrontational stance will be effective in winning converts to atheism or irreligion. Krauss places his critical remarks in the context of the evolution-Creation controversy:

I wish that Dawkins, who has a gift for making science—in particular, evolutionary biology—both exciting and understandable to a broad audience, had continued to play to his strengths, which are desperately needed now more than ever as we confront growing attacks on the teaching of evolution, not just in the United States but in the UK and Europe.

It is understandable that Krauss chooses this social context as the setting for his review, as Dawkins is perhaps the most prominent authority on evolutionary biology in the world. But of course the question of how best to win converts to atheism or irreligion is not identical to the question of how to bolster evolution teaching.

In fact, Dawkins is quite explicit that the principal goal of his book is not to persuade people to endorse evolution teaching, or to (de)convert the devout, but rather to “raise the consciousness” of atheists, agnostics, and those questioning their faith. In the preface, he writes:

I suspect—well, I know—that there are lots of people out there who have been brought up in some religion or other, are unhappy in it, or are worried about the evils that are done in the name of religion; people who feel vague yearnings to leave their religion and wish they could, but just don't realize that leaving is an option. If you are one of them, this book is for you. It is intended to raise consciousness: raise consciousness to the fact that to be an atheist is a realistic aspiration. You can be an atheist who is happy, balanced, moral, and intellectually fulfilled.

Given this overriding aim, one cannot criticize the effectiveness of Dawkins' project by pointing out that it alienates potential allies in the evolution-Creation struggle, or even that it alienates ardent religious believers. Despite these alleged effects, his project nonetheless might be successful at raising the consciousness of skeptics. One could question the greater moral or social importance of this goal, but that would be a much different sort of critique.

One of the means by which Dawkins attempts to raise consciousness in his book is by insisting that religion be subject to the same intellectual, moral, and conversational standards as all serious claims in our public life. No claim ought to be impervious to criticism simply by virtue of its source in faith or religious tradition. Dawkins, along with many secular rationalists, hopes that his efforts are contributing to a long-term project of cultural reform in which religion will eventually wither away and Enlightenment values—chief among them the acceptance of science as the authority on metaphysical matters—will gain near-universal acceptance. It is perfectly plausible that such a cultural reform, if it is to be possible at all, will necessitate a thoroughgoing critique of religion. At the least, the question of the effectiveness of agonism in the long-term project of (neo-)Enlightenment cultural reform is distinct from the question of the effectiveness of agonism in the relatively near-term project of ensuring excellent

science education. It could be that agonism is unhelpful in influencing the curriculum decisions and the quality of science teaching in the immediate future, but also indispensable to bringing about a society in which there is little-to-no religiously motivated resistance to evolution.

Given this, one might be tempted to think that the choice between an agonistic stance or an accommodationist stance could be made by weighing the relative values of improving science education in the near term versus achieving a more enlightened public in the long term. However, in a free and open society characterized by rich pluralism of intellectual perspectives and institutions, science advocates are not forced to choose between agonism and accommodationism. Both perspectives can coexist and find space in the marketplace of ideas. Agonists and accommodationists could criticize each other on empirical or philosophical grounds, but the strategic, prudential argument would be misplaced insofar as the two stances are intended to accomplish different social aims.

We need to be clear about the complaint that Krauss and others are lodging against the agonist. It could be the complaint that as a communication strategy for influencing public opinion and policy (in a highly religious society—i.e., one in which a majority of adults attend religious services regularly), agonism is less effective than accommodationism in ensuring excellent evolution education. Call this claim weak accommodationism. It follows from this that science educators *qua* science educators should be more accommodating. However, this claim is open to the pluralist response sketched above; namely, that some science educators may adopt accommodationist strategies even as other scientists engage in more agonistic discourse in public. So long as there are sufficient numbers of able, accommodationist science educators at work, agonistic scientists like Dawkins may feel justified in dismissing the charge that they are misallocating their talents by pursuing the long-term cultural project. This accommodationism is weak in the sense that agonists could grant it without giving up their central position.

Is there a stronger version of the accommodationist complaint that could foreclose this avenue of response by the agonist? The stronger version is that the mere presence of agonism in public discourse is detrimental to attempts to ensure excellent evolution education. Thus, it is not enough to appeal to an intellectual division of labor in which the near-term educational work is given to the relatively more accommodationist. According to this stronger thesis, agonists are endangering the educational work of accommodationists by refusing to join in their stance.

I now wish to argue that while this stronger thesis is not implausible, there

is no evidence for it. Furthermore, I will argue that it is no less plausible that the presence of agonism in public discourse is actually on balance *beneficial* to accommodationist educational outreach.

### **Miller and Pennock: Holding the Center**

Miller and Pennock<sup>11</sup> situate their discussion of public attitudes about science and religion against the backdrop of the recent history of religiously motivated interference in science teaching in America. While a majority of Americans support science and technology and believe it has improved their lives,

there are strongly held religious views that conflict with modern science. Moreover, these latter views have become amplified in recent decades with the political ascendancy of Christian fundamentalists within American politics, who seek to insert their views into science classes and establish them as the norm. There is also a sizable group of people in the middle whose general support for science may be vulnerable in particular areas.

Miller and Pennock maintain that there is a soft middle of the American public that holds moderate views on science and religion, but whose opinion could be swayed in the direction of religious conservatives. Therefore, the “question for American science education in the 21st century is whether the center will hold in the face of pressure from the religious conservatives.” While Miller and Pennock do not explicitly defend the strong accommodationist thesis that the presence of agonism in public discourse is detrimental to attempts to ensure excellent evolution education, the findings they present and interpret might be construed as support for this thesis.

To characterize the ideological center on science and religion, Miller and Pennock present a fine-grained analysis of polling data over 20 years (1985-2005) that has measured American adults’ degree of agreement with the statements, “science and technology have made our lives healthier, easier, and more comfortable” and “we depend too much on science and not enough on faith.” About the support for the first statement, Miller and Pennock conclude that there is a “substantial plurality of American adults who believe that science and technology make their lives healthier, easier, and more comfortable and that only about 6% of adults in the U.S. disagree strongly with this idea.” On balance, they say, “these data show that there is broad public acceptance of the idea that science and technology have improved the quality of our lives, but that a majority of adults are only moderately committed to this proposition.”

About the support for the statement, “we depend too much on science

and not enough on faith,” Miller and Pennock conclude that “although the proportion of strongly held views on this statement has increased over the last 20 years, a substantial majority of Americans hold much more moderate attitudes on this issue.” In support, they observe that only about 20% of American adults have strong convictions on the subject, with roughly 10% completely agreeing with the statement and 10% completely disagreeing. Americans who express a high level of agreement with the statement number 29%, while 21% express a comparable level of disagreement. This means that the remaining 50% of American adults “hold a mixed or uncertain attitude about the conflict between scientific and religious ideas.”

Miller and Pennock consider this group to represent “swing votes” in the evolution-Creation debate, and they offer a series of concrete proposals designed to prevent the loss of swing votes “to missionary Creationists.” Among these proposals, which include a discussion of college-level science requirements and informal science education outside of the schools and universities, they assert: “we need to do a better job explaining what real science is and what it is not. Students need to know how science is different from faith and limits itself to testable hypotheses. They need to know why science may not appeal to supernatural explanations and why it is neutral with regard to metaphysical religious beliefs.” So, Miller and Pennock can be read as advancing the accommodationist position as part of a strategy to influence the moderate middle to favor evolution teaching and oppose the teaching of Creationism.

One limitation to Miller and Pennock’s analysis is that it leaves unclear exactly what the moderate middle believes. Miller and Pennock seem to treat American adults’ attitudes toward the statement “we depend too much on science and not enough on faith”<sup>12</sup> as a measure of their attitudes on “the conflict between religious and scientific ideas.” But why should we assume that when a person expresses uncertainty or mixed views about society’s reliance on science over religion, that person also holds mixed or uncertain views about the conflict between scientific and religious ideas? Clearly, as a matter of logic, the claim that we depend too much on science and not enough on faith does not commit one to any particular position on the conflict of religious and scientific ideas. A person could think that religion and science have non-overlapping domains but worry that the scientific domain receives too much attention relative to the religious domain. Or a person could think that religion and science offer up incompatible ideas, while remaining unsure about how much we should depend on any of them.

Suppose that we could establish more firmly that roughly half of American adults hold a “mixed or uncertain attitude about the conflict between scientific

and religious ideas.” The portrait of the moderate middle is still left impressionistic because we do not know what this mixed attitude amounts to. One possible mix of attitudes combines a belief that science and religion are consonant in some areas of knowledge (plant biology, for instance) but not in others (human origins, say). As Miller and Pennock remind us, Americans’ scientific knowledge is a patchwork of sometimes incongruous beliefs. In 2005, only 6% rejected the claim that over periods of millions of years, some species of plants and animals adjust and survive while other species die and become extinct; but 39% rejected the claim that human beings, as we know them today, developed from earlier species of animals. It is entirely consistent with the available polling data that the aggregate of people with “mixed” attitudes on the religion-science conflicts might have relatively conservative views in specific areas, such as human evolution versus special creation. In that case, an accommodationist message on theistic evolution, for example, may not be significantly more appealing to the “moderate” middle than to the “fundamentalist” fringe.

I think it is fair to say that if the construct of the moderate middle is to be useful in adjudicating between agonist and accommodationist strategies on evolution, the data adduced by Miller and Pennock would have to be supplemented in order to develop a clearer picture of this segment of the public.

The lack of a detailed portrait of the moderate middle limits our ability to draw conclusions about the best strategic science communication on evolution and creation. For all we know, agonism may in no way influence the middle against the teaching of evolution; it might even be helpful. In the final section of this article I present a hypothesis to that effect. Before doing so, it will be illuminating to look at another line of research and public commentary, which takes aim more directly at agonism.

### **Nisbet and Mooney: Accommodating “Frames”**

Nisbet and Mooney<sup>13</sup> suggest that Dawkins is aiding the cause of Creationist activists:

If the defenders of evolution wanted to give their creationist adversaries a boost, it’s hard to see how they could do better than Richard Dawkins, the famed Oxford scientist who had a bestseller with “The God Delusion.” Dawkins, who rose to fame with his lucid expositions of evolution in such books as “The Selfish Gene,” has never gone easy on religion. But recently he has ramped up his atheist message, further mixing his defense of evolution with his attack on belief.

The problem with Dawkins' approach, according to Nisbet and Mooney, is that:

The public cannot be expected to differentiate between his advocacy of evolution and his atheism. More than 80 percent of Americans believe in God, after all, and many fear that teaching evolution in our schools could undermine the belief system they consider the foundation of morality. Dawkins not only reinforces and validates such fears—baseless though they may be—but lends them an exclamation point.

Public support for the teaching of evolution could be weakened not just by acerbic Oxford professors, we are told, but by anyone who argues that science and religion are in conflict:

The Dawkins-inspired “science vs. religion” way of viewing things alienates those with strong religious convictions. Do scientists really have to portray their knowledge as a threat to the public's beliefs? Can't science and religion just get along? A “science and religion coexistence” message conveyed by church leaders or by scientists who have reconciled the two in their own lives might convince even many devout Christians that evolution is no real threat to faith.

Elsewhere,<sup>14</sup> Nisbet and Mooney recommend to scientists and other science communicators a theory of “framing” that could assist them in persuading the public on science-related policy questions. In their terms, frames “organize central ideas, defining a controversy to resonate with core values and assumptions. Frames pare down complex issues by giving some aspects greater emphasis. They allow citizens to rapidly identify why an issue matters, who might be responsible, and what should be done.” In this understanding, a frame is what would otherwise be known as an argument or reason, but with special attention paid to appealing to core values and assumptions rather than challenging them.

Nisbet and Mooney could be making the relatively weak, pluralist claim above: namely, that as a communication strategy for influencing public opinion and policy (in an overwhelmingly religious society), agonism is less effective than accommodationism in ensuring excellent evolution education. While this claim is surely intuitive, and is predicted by general considerations from psychology, communication theory, opinion research, and political science, there is to date no empirical literature dedicated to it.<sup>15</sup> For example, such general considerations suggest that when people perceive that some of their core beliefs and values are threatened by some new source of information, they tend to react by closing themselves off to that information source, rather than reasoning through its

intellectual implications in a dispassionate manner with the aim of arriving at a more consistent set of commitments.

Nisbet and Mooney also appear to be committed to the stronger accommodationist claim, as when they suggest (above) that the success of *The God Delusion* not only fails to help resist Creationism in the schools, but actually aids Creationism. However, they do not offer any evidence for this stronger claim. They do cite the success of a 2004 media campaign in California that swayed opinion among the voting public, and was sufficient to pass a \$3 billion ballot initiative on stem cell research funding, despite the religiously motivated opposition surrounding this sensitive, beginning-of-life issue. The campaign made use of “frames” such as “social progress” and “economic competitiveness.” Similarly, Nisbet and Mooney suggest that public sympathy for the Creationist cause in public schools will be best countered by “frames of ‘public accountability’ that focus on the misuse of tax dollars, ‘economic development’ that highlight the negative repercussions for communities embroiled in evolution battles, and ‘social progress’ that define evolution as a building block for medical advances....” Again, there is to date no empirical research into these predictions specifically.

It is worth noting that even if Nisbet and Mooney’s recommended communications strategy in the evolution-Creation controversy were entirely sound, it would not constitute evidence for strong accommodationism. For if, as they contend, the arguments of social progress, economic development, and public accountability promise to be the most successful, we might expect them to succeed even in the context of a broader marketplace of ideas in which one can also find arguments about the philosophical conflict between evolution and Creationism. The case of the California stem cell campaign could be interpreted as an example of a something quite like this. Debates in American public life over stem cell research have included a plurality of perspectives, many of them overtly antagonistic to religion.<sup>16</sup> One of the most vocal early supporters of public funding for stem cell research was Ronald Reagan, Jr., a publicly avowed atheist who directly challenged the theological objections of its opponents.<sup>17</sup> Despite the presence of these perspectives in the broader marketplace of ideas, the California campaign appears to have worked.

Even by their own description of their work, Nisbet and Mooney are not presenting an empirical theory of science-religion accommodationism, or any particular device for “framing” science policy debates. Instead, they are pointing out the general failure of scientists to produce and consult empirical research on public communication when determining how to communicate with the public in such debates. At the same time, they are advocating a particular research program that should shed light on the kind of strong accommodationism they entertain.

## The Dawkins Effect

Having considered some possible detrimental effects of agonist discourse on science education, we should consider a possible beneficial effect. In the present media environment, conflict is an adaptive trait. Narratives of conflict attract media attention and can heighten general public interest in material that might otherwise be perceived as too stolid or academic. No doubt the combative tone of Dawkins' *The God Delusion* and the resulting media attention in part explain its sales of over 1.5 million copies worldwide, an extraordinary feat for a book that is essentially an application of science and philosophy to theological matters. It may be that many of Dawkins' readers belong to his target audience of those who were already skeptical of traditional religion and spirituality. Nevertheless, the public debate about the book and its implications spilled over into mainstream media markets. Dawkins was seen on Fox News and on the cover the *Time* magazine, for example.

The *Time* magazine coverage took the form of an extended dialogue between Dawkins and Dr. Francis Collins, a scientist who directs the National Human Genome Research Institute and is also an outspoken Christian.<sup>18</sup> The article, "God vs. Science," was accompanied by images of a wizened Charles Darwin apparently about to engage in a wrestling match with an angel. In the course of the discussion, Collins has ample opportunity to testify to the psychological and epistemological compatibility of science and religion. Given the instinct of mass media producers to provide "balance" by presenting equal coverage of two (or rarely more than three) sides between which the viewer is invited to choose, the use of the religion-science conflict narrative has the effect of creating a platform for the opposing position. In this case, the opposing position was not anti-scientific religion—which admits conflict and simply favors the victory of religion over science—but instead the position I have been calling accommodationism. On the other hand, when the "balanced" view includes anti-scientific religion, and agonism is presented as the opposing end of that ideological spectrum, then accommodationism naturally emerges as the reasonable compromise position.

I do not mean to endorse any of these claims. What I wish to suggest is that they are pre-theoretically plausible scenarios for the effects of agonist discourse in a pluralistic marketplace of ideas that also includes accommodationist discourse, and that they enjoy no more and no less empirical support than the strong accommodationist claim that the prominent discussion of science-religion conflict is detrimental to strategic efforts to ensure excellent science education in America.

In light of this, it would be interesting to investigate the following hypothesis, which might be labeled *The Dawkins Effect*:

**The Dawkins Effect:** The presence of messages of science-religion conflict makes messages of science-religion harmony better known and more palatable to religious believers.

The idea is that the discussion of science-religion conflict in mass media-driven public discourse results in greater public awareness of messages of science-religion harmony. The Dawkins Effect has a corollary: it also makes the harmony messages seem like a reasonable compromise between anti-scientific religion and anti-religious atheism. In short, the presence of overtly agonist scientists such as Dawkins may make accommodationist scientists like Collins appear more reasonable to religious believers, and may make the prospect of adopting accommodationist views as a basis for public policy seem more judicious and fair to the moderate middle.

Another effect of agonistic discourse might be to galvanize self-identifying secular supporters of science who might otherwise not become involved in public policy debates. Such people might indeed be mobilized to combat the perceived common threat posed by the Creationist movement. At work in many discussions of agonism, accommodationism, and evolution education, such as those above, is the assumption that achieving broad public consensus on evolution and creation is important to securing sound science teaching in public schools. At the same time, most observers agree that the Creationist movement, like so many effective movements of social change, is the work of a relatively small, well-organized, highly motivated minority. While it may be ideal in a democracy for a piece of education policy to have the support of a stable majority, a consensus is often not necessary to achieving the success of the policy. After all, the present public school policy of excluding Creationism from science curricula in the United States does not enjoy broad public support among the American people. Most Americans would prefer to see both views taught.<sup>19</sup> In light of this, agonists could argue that conflict literature such as *The God Delusion* may indeed benefit evolution education by mobilizing science supporters to become politically engaged with this issue, and this apart from any potential alienation it might cause among the religious segments of the public who remain politically disengaged on this issue. Unfortunately, neither this nor (as I hope to have shown above) any of the accommodationists' alternative hypotheses, can claim compelling evidentiary support.

## **Conclusion**

The critical reception of Richard Dawkins' *The God Delusion* and related works sheds light on the debate over how best to communicate evolutionary science to the public, and how best to secure high-quality evolution teaching in public

schools in such highly religious societies as the United States. It is useful to analyze the debate as a disagreement between agonists and accommodationists. Agonists assert that there exist important conflicts between science and religion and they wish publicly to discuss such conflicts. Accommodationists are those who either recognize no conflicts between religion and science, or who recognize such conflicts but are disinclined to discuss them publicly. The question is whether agonism helps or harms efforts to ensure excellent evolution education. Here it is important to distinguish the question of the effectiveness of agonism in a long-term project of (neo-)Enlightenment cultural reform from the question of its effectiveness in the relatively near-term project of influencing science teaching and education policy.

With respect to the latter question, one criticism of Dawkins' confrontational approach is that it is likely to alienate religious believers who are potential allies against the Creationist agenda. This could mean either the relatively weak thesis that as a communication strategy for influencing public opinion and policy, agonism is less effective than accommodationism at promoting good evolution education, or the strong thesis that the mere presence of agonism in public discourse is detrimental to evolution education. The weak accommodationist thesis is plausible, and predicted by general considerations from psychology and social science research. However, there is no evidence for it presently available. I surveyed arguments by Miller and Pennock, Nisbet and Mooney, and concluded that they do not provide evidence for the stronger accommodationist thesis. Surely this is an important research program. At the same time, it would be useful to explore the Dawkins Effect; namely, the hypothesis that the presence of messages of science-religion conflict makes messages of science-religion harmony better known and more palatable to religious believers.

#### ENDNOTES

1. M. Shermer, *Rational Atheism: An Open Letter to Messrs. Dawkins, Dennett, Harris and Hitchens*, <http://www.sciam.com/article.cfm?id=423C1809-E7F2-99DF-384721C9252B924A&page=1>, November 21, 2007.
2. *Gallup*, "Third of Americans say Evidence has Supported Darwin's Evolution Theory: Almost Half of Americans Believe God Created Humans 10,000 Years Ago," November 19, 2004.
3. The Pew Forum on Religion and Public Life, "Public Divided on Origins of Life," August 30, 2005.

4. This number comes from a random survey of 1,000 persons listed in the 1995 *American Men and Women of Science* conducted in 1997 by Larry Witham and Edward J. Larson. Forty % of respondents agreed with the statement, "Man evolved over millions of years from less developed forms of life, but God guided the process, including the creation of man." See L. Witham, "Many scientists see God's hand in evolution," *Washington Times* (April 11, 1997), A8. Reprinted online at [http://www.ncseweb.org/resources/rncse\\_content/vol17/5319\\_many\\_scientists\\_see\\_god39s\\_\\_12\\_30\\_1899.asp](http://www.ncseweb.org/resources/rncse_content/vol17/5319_many_scientists_see_god39s__12_30_1899.asp) (accessed February 24, 2088).
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14. Nisbet & Mooney, "Framing Science," *Science* 316, no. 5821 (April 6, 2007): 56.
15. Nisbet, personal communication, 2007.
16. Harris, 2004.
17. Ronald Reagan, Jr., Letter to the Editor, *New York Times*, August 12, 2004.
18. David Van Biema, "God vs. Science," *Time*, November 5, 2006.
19. The Pew Forum on Religion and Public Life, "Public Divided on Origins of Life," August 30, 2005.