

**Darwin's Poisoned Tree:  
Atheistic Advocacy and the  
Constitutionality of Teaching  
Evolution in Public Schools**

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# DARWIN'S POISONED TREE: ATHEISTIC ADVOCACY AND THE CONSTITUTIONALITY OF TEACHING EVOLUTION IN PUBLIC SCHOOLS

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## Introduction

The teaching of biological origins in public schools is a contentious and highly debated area of the law. If there is any fixed star of this evolving legal field, it is the U.S. Supreme Court's 1968 holding in *Epperson v. Arkansas* that "[t]he First Amendment mandates governmental neutrality between religion and religion, and between religion and nonreligion."<sup>1</sup>

Following this mandate for state neutrality in evolution education, various courts and legal scholars have opposed the teaching of alternatives to evolution by citing an historical connection between opposition to evolution and the advocacy of "fundamentalist" religion.<sup>2</sup> One author contends that attempts to teach non-evolutionary viewpoints of biological origins are unconstitutional because such viewpoints are associated with religion, making them "[f]ruit of the poison tree."<sup>3</sup> Another scholar similarly suggests that some educational policies that sanction critique of evolution entail "government measures that arise from a constitutionally problematic history" and are therefore "tainted . . . fruit of the poisonous tree."<sup>4</sup> Kristi L. Bowman warns that under current law, the "religious

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<sup>1</sup> *Epperson v. Arkansas*, 393 U.S. 97, 104 (1968) (citations omitted).

<sup>2</sup> See *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 716 (M.D. Pa. 2005); *Selman v. Cobb Cty. Sch. Dist.*, 390 F. Supp. 2d 1286, 1306 (N.D. Ga. 2005), *vacated*, 449 F.3d 1320, 1323 (11th Cir. 2006); Jon D. Miller, Eugenie C. Scott, & Shinji Okamoto, *Public Acceptance of Evolution*, 313 SCI. 765 (2006).

<sup>3</sup> Todd R. Olin, Note, *Fruit of the Poison Tree: A First Amendment Analysis of the History and Character of Intelligent Design Education*, 90 MINN. L. REV. 1107 (2006).

<sup>4</sup> Asma T. Uddin, *Evolution Toward Neutrality: Evolution Disclaimers, Establishment Jurisprudence Confusions, and a Proposal of Untainted Fruits of a Poisonous Tree*, 8 RUTGERS J. L. & RELIGION 12 (2007) (citations omitted).

motivation of many involved in the intelligent design movement” might taint any analysis into the government purpose behind policies supporting the teaching of intelligent design, rendering them unconstitutional.<sup>5</sup> Multiple cases have considered the historical connection between religion and opposition to evolution when striking down educational policies that challenged evolution. (These cases are discussed in Part 1A of this article.) As this article will show, such reasoning, if applied fairly and consistently, could also threaten the constitutionality of teaching evolution itself—an outcome that is neither pedagogically desirable nor legally necessary.

The effect prong of the *Lemon* test requires that the primary effect of a government policy neither “advance[]” nor “inhibit[]” religion.<sup>6</sup> Various courts have found that policies which encourage teaching alternatives to evolution have the primary effect of advancing religion because these alternatives have historical ties to religion. But what if there are parallel historical associations between anti-religious activism and the advocacy of evolution? This could lead to objective perceptions that teaching evolution endorses such anti-religious advocacy, thereby inhibiting religion, or endorsing and advancing non-theistic or atheistic religious viewpoints.

If the public is aware of the close historical association between the advocacy of evolution and anti-religious activism, then the teaching of evolution may make many religious Americans feel like political outsiders.<sup>7</sup> Despite the fact that many scientific organizations and some influential

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<sup>5</sup> Kristi L. Bowman, *Seeing Government Purpose Through the Objective Observer’s Eyes: The Evolution-Intelligent Design Debates*, 29 HARV. J.L. & PUB. POL’Y 417, 468 (2006) (Bowman notes that this sort of analysis is precisely what rendered the policy unconstitutional in *Selman v. Cobb County*.); *See also* Philip Sparr, Note, *Special “Effects”*: *Kitzmiller v. Dover Area School District*, 400 F. Supp. 2d 707 (M.D. Pa. 2005), and *the Fate of Intelligent Design in our Public Schools*, 86 NEB. L. REV. 708, 735 (2008) (“By exhaustively tracing ID’s heritage to creationism and creation science, the court effectively foreclosed the questions of ID’s scientific legitimacy under a purpose or effects prong analysis.”).

<sup>6</sup> *Lemon v. Kurtzman*, 403 U.S. 602, 612 (1971) (emphasis added).

<sup>7</sup> *See* Jana R. McCreary, *This Is the Trap the Courts Built: Dealing with the Entanglement of Religion and the Origin of Life in American Public Schools*, 37 SW. U. L. REV. 1, 67 (2008) (“The school districts that have such policies in place are not showing neutrality—those who agree with the religious dogma represented by evolution feel like favored members of the community while those who disagree feel like outsiders.”).

religious organizations officially support compatibility between evolution and religion, widely known anti-religious activism associated with evolution could also “poison the tree” from which evolution-education falls. The past ten years have seen the rise of a vocal group of “new atheists” who vehemently maintain that evolution refutes religious belief. But the arguments of “new atheists” are hardly new—such arguments have been widespread and widely known throughout society since the time of Darwin. Given such an historical association between evolution and anti-religious activism, current tests for assessing the constitutionality of teaching theories of biological origins, when applied fairly, could conceivably render the teaching of evolution unconstitutional.

There are good reasons to expect that such an unwanted outcome can be avoided. Science stands or falls on the evidence. Evolution is a legitimate scientific theory that public schools should be able to teach. The personal religious (or anti-religious) beliefs, motives, affiliations, and even activism of evolutionary scientists do not determine whether their views about evolution are scientific, or scientifically correct. In keeping with this principle, some legal tests for interpreting the Establishment Clause avoid committing the genetic fallacy, and appreciate that historical connections between a particular viewpoint and religious (or anti-religious) advocacy are secondary to determining whether that viewpoint actually is scientific.

Legitimate scientific theories like evolution should not be disbarred from science classrooms simply because of the religious (or anti-religious) views and activism of their proponents. Therefore, in order to preserve the teaching of evolution, it may be necessary to revise legal tests that are applied to assess the constitutionality of teaching biological origins. To put it bluntly, if evolution is to be continued to be taught in public schools, courts must abandon inquiries which look at the historical associations between a viewpoint on origins and religion (or non-religion).

### **Preemptive Clarification**

Many have tried to equate the teaching of evolution with advocating atheism or secular humanism in attempts to bar evolution from the classroom (see Part 3A of this article). *Having evolution declared unconstitutional to teach in public schools is neither my desire nor the necessary result of my argument.* Though I am a scientific skeptic of neo-Darwinian evolution, I firmly believe that it can be formulated as a scientific

theory and that teaching evolution in public school science classrooms *should remain constitutional*. Unlike some critics of evolution, I do not believe evolution is a religion.

Additionally, from the outset I must recognize that many religious persons, indeed many devout Christians who are scientists, claim to find no conflict between evolution and their religious views. Though a huge proportion of Darwinians are atheists or secular humanists, many are not.

Therefore, I am not arguing that all evolutionary scientists are atheists who preach an anti-religious message, nor am I arguing that acceptance of neo-Darwinian theory mandates belief in atheism or abandonment of traditional theism. My purpose in this present article is not to enter the debate about the correct relationship between neo-Darwinian evolution and religion. Rather, this article aims to review how leading advocates of evolution have promoted their views alongside anti-religious activism in a way which, under current legal tests, could be perceived as inhibiting, denigrating, or actively opposing religion, and endorsing anti-religious viewpoints. Any fair analysis must conclude that under current law, the anti-religious activities and rhetoric associated with the advocacy of evolution threatens the teaching of evolution in public schools.

The problem, however, is not with the scientific theory of evolution or the activities and activism of its advocates, but rather with the current legal tests that are used to assess whether a concept is constitutional to teach in public schools. My aim is to expose a deficiency in some current legal tests that could disbar the teaching of evolution and propose new tests whereby the teaching of evolution in public schools can be safely justified.

Many might wish to dismiss the anti-religious activism associated with the advocacy of evolution as constitutionally irrelevant. However, pro-religious activism associated with opposition to evolution has long been cited to prevent public schools from teaching non-evolutionary views. If evolution is associated with anti-religious activism, this must factor into constitutional analyses. Jurists who appreciate that justice is blind and that the law must be applied fairly will agree that current legal tests striking down such non-evolutionary views could similarly jeopardize the teaching of evolution.

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Indeed, leading pro-evolution activists seem well-aware of this threat to teaching evolution in public schools. A spokesman for the nation's leading pro-Darwin lobbyist organization, the National Center for Science Education (NCSE), counseled his fellow Darwin-advocates that "We don't need the anti-creationists going and mixing their views on religion into their science. In fact, this is probably the surest path to disaster politically and in the courts."<sup>8</sup> Renowned University of Wisconsin-Madison historian of the evolution debate, Ronald Numbers, likewise observes that evolution's ties to atheism could potentially threaten its place in public schools:

"In the United States, our public schools are supposed to be religiously neutral. If evolution is in fact inherently atheistic, we probably shouldn't be teaching it in the schools. And that makes it very difficult when you have some prominent people like Dawkins, who's a well-credentialed biologist, saying, 'It really is atheistic.' He could undercut—not because he wants to—but he could undercut the ability of American schools to teach evolution."<sup>9</sup>

Michael Ruse, a leading Darwinian philosopher of science at Florida State University whose testimony in the 1982 *McLean v. Arkansas* case underpinned Judge Overton's ruling that creationism isn't science, agrees that those who enlist Darwin to attack religion might unwittingly cause teachers who present evolution to "violate the separation of church and state":

A major part of the atheist attack is that science has shown that the God hypothesis is silly. Suppose this is true—that if you are a Darwinian, then you cannot be a Christian. How then does one answer the creationist who objects to the teaching of Darwinism in schools? Sauce for the goose is sauce for the gander. If theism cannot be taught in schools (in America) because it violates the separation of church and state, why then should Darwinism be permitted? If

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<sup>8</sup> Nick Matze, THE PANDA'S THUMB (June 24, 2006, 5:41 PM), [http://www.pandasthumb.org/archives/2006/06/ron\\_numbers\\_int.html#comment-107918](http://www.pandasthumb.org/archives/2006/06/ron_numbers_int.html#comment-107918).

<sup>9</sup> Steve Paulson, *Seeing the Light—of Science*, SALON (Jan. 2, 2007), [http://www.salon.com/2007/01/02/numbers\\_12/](http://www.salon.com/2007/01/02/numbers_12/).

Darwinism leads to atheism, does this not also violate the separation of church and state?<sup>10</sup>

If Darwinian evolution has anti-religious associations, then under current law, these could be a constitutional barrier to teaching it in public schools. But does there exist such a close historical tie between evolution and anti-religious activism? If such historical associations exist, those who support fairness and neutrality in the law are now left with two choices: either teaching evolution must be deemed unconstitutional, or courts must abandon legal tests that consider the historical relationship between religious (or anti-religious) activism and the advocacy of theories of biological origins. The former option not only has disastrous consequences for science education, but it contradicts longstanding legal precedent that supports the constitutionality of teaching evolution. This article therefore suggests that historical analyses of associations between scientific advocacy and religious (or anti-religious) viewpoints should be abandoned, and that courts should consider new legal doctrines in order to justify teaching evolution.

Jurists who understand that the law must be applied fairly will also see immediate implications for the constitutionality of teaching non-evolutionary theories of origin, such as intelligent design (ID). If anti-religious activism associated with the advocacy of evolution is not fatal to teaching evolution, then in a symmetrical manner, any religious (or anti-religious) advocacy associated with ID cannot be constitutionally fatal to teaching that concept as well.

### **Summary of Argument**

Part I will recount the various courts that have scrutinized the historical association between views on biological origins and religious activism, and expound upon the constitutional implications of societal perceptions of those historical associations. After discussing how the endorsement test assesses the objective perceptions of government actions, I will argue that a publicly-known historical association between the advocacy of evolution and anti-religious activism could render the teaching of evolution unconstitutional under current law.

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<sup>10</sup> Michael Ruse, Book Review, 98 *ISIS* 814–16 (2007) (reviewing RICHARD DAWKINS, *THE GOD DELUSION* (2006)).

For those unconvinced that evolution bears close historical ties to anti-religious activism, Part II provides extensive documentation summarizing the close historical relationship between advocacy for evolution and anti-religious activism. Space limitations prevent expanding Part II beyond about a few hundred footnotes, but this author has already collected numerous additional sources that reveal a close historical association between the advocacy of evolution and anti-religious activism. To continue the analogy, this section will review the “poison in the tree” of evolution. This history of evolution advocacy includes:

- A long-standing public perception of “warfare” between evolution and religion;
- Associations between anti-religious ideas and evolution drawn by Darwin and other 19th century intellectuals;
- A long history of public promotion of evolution by leading scientists and academics alongside anti-religious activism (including a recent escalation in such activities);
- Promotion of evolution in mainstream biology textbooks in manners that many would consider hostile towards theistic religion;
- Strong advocacy for evolution by atheist organizations;
- Extensive promotion of evolution in the liberal arts, social sciences, popular press, and media, found alongside anti-religious rhetoric;
- The common use of “dysteleology” in evolution advocacy, a theological argument where evolution is purportedly demonstrated by arguing against the action of God;
- Widespread efforts to explain the origin of human religion and morality in evolutionary terms that would be perceived to conflict with common religious teachings.

Finally, Part III will argue that the solution is *not* to declare evolution unconstitutional, as that would overturn decades of legal



precedent holding that teaching evolution is legal and harm student learning. This section will recount various lawsuits that have tried and failed to ban evolution from the classroom. It will be argued that teaching evolution is good pedagogy because neo-Darwinism has been tremendously influential in modern biology. Excluding a scientific viewpoint from classrooms simply because of the religious (or anti-religious) advocacy of its proponents is not only bad law, it would harm science education.

My conclusion is that courts must jettison from their constitutional analysis any consideration of religious (or anti-religious) advocacy on the part of proponents of a view on biological origins. This solution allows courts to simultaneously recognize the historical fact of evolution advocacy's close ties with anti-religious activism, and allow the teaching of scientific theories like evolution which have a primary effect that advances scientific knowledge.<sup>11</sup> Any effects upon religion are incidental or secondary to that primary effect.<sup>12</sup> This is the antidote to Darwin's poisoned tree. It can save the teaching of evolution in public schools, but it will require a revision of current legal tests regarding the constitutionality of teaching viewpoints of origins. As a result of this revision, the cultural history of non-evolutionary views and their associations with religious (or anti-religious) advocacy can no longer be considered germane to a constitutional analysis under the Establishment Clause. If the law is to be applied fairly and symmetrically, this conclusion must be equally true for assessing the teaching of ID in public schools as it is for teaching evolution.

## **Part I: The Legal Setting**

### **A. Judicial Analysis of Historical Religious Activism when Dealing with the Teaching of Biological Origins**

Courts dealing with the teaching of biological origins in public schools have often attempted to recount the history of the evolution

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<sup>11</sup> Theresa Wilson, *Evolution, Creation, and Naturally Selecting Intelligent Design out of the Public Schools*, 34 U. TOL. L. REV. 203, 232 (2003). (“[I]f a theory has scientific value and evidence to support it, its primary effect would be to advance knowledge of the natural world, not to advance religion. The ultimate goal of schools is to educate students. Where a theory has scientific value and supporting evidence, it provides a basis for knowledge. Whether it coincidentally advances [or inhibits] religion should not matter.”).

<sup>12</sup> David K. DeWolf, John G. West, & Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, 68 MONT. L. REV. 7, 46–48 (2007).

controversy. These retellings invariably portray opposition to evolution as religiously based, and attempt to historically associate opposition to evolution with religion. Five cases illustrate how courts have inquired into the historical associations between religious advocacy and viewpoints on biological origins.

### **Epperson v. Arkansas**

*Epperson v. Arkansas* arose out of a challenge to an Arkansas statute which made it a misdemeanor for a teacher in any Arkansas public school “to teach the theory or doctrine that mankind ascended or descended from a lower order of animals.”<sup>13</sup> The U.S. Supreme Court struck the law down as establishing religion because the law “selects from the body of knowledge a particular segment which it proscribes for the sole reason that it is deemed to conflict with a particular religious doctrine.”<sup>14</sup>

The Court found that the purpose of the statute was to protect a religious viewpoint. The Arkansas statute was directly descended from the Tennessee “Monkey Law” of the Scopes Trial which had made it unlawful “to teach any theory that denies the story of the Divine Creation of man as taught in the Bible.”<sup>15</sup> The Court found this history relevant to its constitutional analysis:

The statute was a product of the upsurge of “fundamentalist” religious fervor of the twenties. The Arkansas statute was an adaptation of the famous Tennessee “monkey law” which that State adopted in 1925. . . . It is clear that fundamentalist sectarian conviction was and is the law’s reason for existence.<sup>16</sup>

The Court also found relevant the fact that advertisements in favor of the law explicitly warned Christian voters that if the law was not passed, churchgoers would be “forced to pay taxes to support teachers to teach evolution which will undermine the faith of their children.”<sup>17</sup> It further found that “letters from the public expressed the fear that teaching of

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<sup>13</sup> *Epperson v. Arkansas*, 393 U.S. 97, 98–99 (1968).

<sup>14</sup> *Id.* at 108.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.* at 98, 107–08.

<sup>17</sup> *Id.* at 109.

evolution would be ‘subversive of Christianity.’”<sup>18</sup> The Court suggested that the negative publicity surrounding the Tennessee law may have led the Arkansas legislature to eliminate reference to the Genesis account of creation, finding that “no doubt that the motivation for the law was the same.”<sup>19</sup> In this case, the history recounted was highly specific to the law in question, but the religious activism behind advocacy for the law rendered it unconstitutional.

In his concurring opinion, Justice Black warned that the majority’s decision had “troublesome” implications. If evolution genuinely offends the religious beliefs of some Americans, Justice Black explained, the issue was more complex than the Court had stated:

Unless this Court is prepared simply to write off as pure nonsense the views of those who consider evolution an anti-religious doctrine, then this issue presents problems under

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<sup>18</sup> *Id.* at 108, n.16. The court observed that the following advertisement was representative of those which were used to “secure adoption of the statute”:

THE BIBLE OR ATHEISM, WHICH?

All atheists favor evolution. If you agree with atheism vote against Act No. 1. If you agree with the Bible vote for Act No. 1. . . . Shall conscientious church members be forced to pay taxes to support teachers to teach evolution which will undermine the faith of their children? The Gazette said Russian Bolsheviks laughed at Tennessee. True, and that sort will laugh at Arkansas. Who cares? Vote FOR ACT NO. 1.

Letters from the public expressed the fear that teaching of evolution would be “subversive of Christianity,” and that it would cause school children “to disrespect the Bible.” One letter read:

The cosmogony taught by [evolution] runs contrary to that of Moses and Jesus, and as such is nothing, if anything at all, but atheism. . . . Now let the mothers and fathers of our state that are trying to raise their children in the Christian faith arise in their might and vote for this anti-evolution bill that will take it out of our tax supported schools. When they have saved the children, they have saved the state.

*Id.* (citations omitted).

<sup>19</sup> *Id.* at 109.

the Establishment Clause far more troublesome than are discussed in the Court’s opinion.<sup>20</sup>

Black’s observations foreshadow the constitutional quandary that is scrutinized in this article.

### **McLean vs. Arkansas Board of Education**

Over a decade after their “Monkey-law” was struck down, Arkansas legislators enacted the “Balanced Treatment for Creation-Science and Evolution-Science Act,” requiring that Arkansas public schools give “balanced treatment to creation-science and to evolution-science.”<sup>21</sup> In *McLean v. Arkansas Board of Education*, federal district court judge William Overton struck down the statute after heavily weighing legislative intent and finding that the law’s drafter had publicly proclaimed the religious purpose of the legislation.<sup>22</sup> The court found that internal communication indicated the Act was part of “a religious crusade” noting that: “[t]he State of Arkansas, like a number of states whose citizens have relatively homogeneous religious beliefs, has a long history of official opposition to evolution which is motivated by adherence to Fundamentalist beliefs in the inerrancy of the Book of Genesis.”<sup>23</sup> Judge Overton recounted this “long history” of “Fundamentalists” and their historical opposition to the theory of evolution and support for creationism. This weighed heavily into the court’s analysis of the law under the purpose prong of the *Lemon* test.

### **Edwards v. Aguillard**

The most recent case over the teaching of biological origins to reach the U.S. Supreme Court was *Edwards v. Aguillard* in 1987. Similar to the controversy in *McLean*, the Louisiana legislature passed a “balanced treatment” or “equal time” law stating no school is required to teach either evolution or creation science, but if either is taught, the other must also be taught.<sup>24</sup> The Supreme Court struck down the statute because it was passed under a predominantly religious purpose.

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<sup>20</sup> *Id.* at 113.

<sup>21</sup> *McLean v. Arkansas Bd. of Educ.*, 529 F. Supp. 1255, 1256 (E.D. Ark. 2005).

<sup>22</sup> *Id.* at 1259–64.

<sup>23</sup> *Id.*

<sup>24</sup> *Edwards v. Aguillard*, 482 U.S. 578, 583 (1987).

In its analysis, the Court examined “the statute on its face, its legislative history, or its interpretation by a responsible administrative agency” because, “the plain meaning of the statute’s words, enlightened by their context and the contemporaneous legislative history, can control the determination of legislative purpose.”<sup>25</sup> After assessing the events leading up to the passage of the law, the Court found it relevant that “[t]here is a historic and contemporaneous link between the teachings of certain religious denominations and the teaching of evolution”<sup>26</sup> and that “[t]hese same historic and contemporaneous antagonisms between the teachings of certain religious denominations and the teaching of evolution are present in this case.”<sup>27</sup> These statements by the Court treat opposition to evolution as if it derives from a tree that is necessarily poisoned by Christian fundamentalism.

### **Selman v. Cobb County**

*Selman* arose when the Cobb County School District in Georgia enacted a policy in 2002 requiring the placement of a sticker-disclaimer inside biology textbooks.<sup>28</sup> The ruling of federal district court Judge Clarence Cooper recounted explicit connections between the history of religious activism and the perceptions of that history by the citizenry: “[C]itizens around the country have been aware of the historical debate between evolution and religion.”<sup>29</sup> Here the court argued that “the informed, reasonable observer would know that a significant number of Cobb County citizens had voiced opposition to the teaching of evolution for religious reasons” and “put pressure on the School Board to implement certain measures that would nevertheless dilute the teaching of evolution.”<sup>30</sup> Although the court found that school district did not intend to endorse religion, it found the “informed, reasonable [observer] would perceive the

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<sup>25</sup> *Id.* at 594.

<sup>26</sup> *Id.* at 590.

<sup>27</sup> *Id.* at 591.

<sup>28</sup> The disclaimer stated “This textbook contains material on evolution. Evolution is a theory, not a fact, regarding the origin of living things. This material should be approached with an open mind, studied carefully, and critically considered.” *Selman v. Cobb Cty. Sch. Dist.*, 449 F.3d 1320, 1324 (11th Cir. 2006).

<sup>29</sup> *Selman v. Cobb Cty. Bd. of Educ.*, 390 F. Supp. 2d 1286, 1306 (N.D. Ga. 2005).

<sup>30</sup> *Id.* at 1307.

School Board to be aligning itself with proponents of religious theories of origin.”<sup>31</sup>

While district court’s ruling was vacated and remanded by the 11th Circuit in May 2006,<sup>32</sup> this ruling also shows how courts have examined the history of “Christian fundamentalist” opposition to evolution.

### **Kitzmiller v. Dover**

In December 2004, 11 parents filed suit against the Dover Area School District in Pennsylvania over a policy requiring the reading of an oral disclaimer that favorably mentioned intelligent design.<sup>33</sup> Federal district court Judge John E. Jones III applied the endorsement test to Dover’s ID-policy and found that “[t]he test consists of the reviewing court determining what message a challenged governmental policy or enactment conveys to a reasonable, objective observer who knows the policy’s language, origins, and legislative history, as well as the history of the community and the broader social and historical context in which the policy arose.”<sup>34</sup> The judge recounted legal precedent as if it treated opposition to evolution as springing from a poisoned tree:

In 1982, the district court in *McLean* reviewed Arkansas’s balanced-treatment law and evaluated creation science in light of *Scopes*, *Epperson*, and the long history of Fundamentalism’s attack on the scientific theory of evolution, as well as the statute’s legislative history and historical context. . . . Five years after *McLean* was decided, in 1987, the Supreme Court struck down Louisiana’s balanced-treatment law in *Edwards* for similar reasons. After a thorough analysis of the history of fundamentalist attacks against evolution . . . and taking the character of organizations advocating for creation science into consideration, the Supreme Court held that the state violated the Establishment Clause.<sup>35</sup>

The defense contended that “the Court should ignore all evidence of ID’s lineage and religious character,”<sup>36</sup> but the judge followed *McLean* and

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<sup>31</sup> *Id.* at 1308.

<sup>32</sup> *Selman*, 449 F.3d 1320, 1321.

<sup>33</sup> *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707 (M.D. Pa. 2005).

<sup>34</sup> *Id.* at 714–15.

<sup>35</sup> *Id.* at 717.

<sup>36</sup> *Id.* at 717, n.5.

*Edwards*, ruling that it was necessary to examine the historical associations between the challenged curricular subject and religion.<sup>37</sup> After establishing the necessity of looking at the historical background of an idea, Judge Jones assessed the historical background of intelligent design:

Having thus provided the social and historical context in which the ID Policy arose of which a reasonable observer, either adult or child would be aware, we will now focus on what the objective student alone would know.<sup>38</sup>

The judge then concluded, “the objective student is presumed to have information concerning the history of religious opposition to evolution and would recognize that the Board’s ID Policy is in keeping with that tradition.”<sup>39</sup> Judge Jones also found that a the average Dover citizen would find the policy objectionable because, “[i]n light of the historical opposition to evolution by Christian fundamentalists and creationists[,] . . . the informed, reasonable observer would infer the School Board’s problem with evolution to be that evolution does not acknowledge a creator.”<sup>40</sup>

A review of the case law shows that multiple rulings have considered the history of religious activism surrounding opposition to evolution when assessing the constitutionality of government policies that deal with the teaching of origins. It remains to be seen whether analogous history exists for the pro-evolution viewpoint, whereby anti-religious activism is commonly associated with the advocacy of evolution. If this

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<sup>37</sup> *Id.* (“Defendants’ argument lacks merit legally and logically. The evidence that Defendants are asking this Court to ignore is exactly the sort that the court in *McLean* considered and found dispositive concerning the question of whether creation science was a scientific view that could be taught in public schools, or a religious one that could not. The *McLean* court considered writings and statements by creation science advocates like Henry Morris and Duane Gish, as well as the activities and mission statements of creationist think-tanks like the Biblic Science Association, the Institution for Creation Research, and the Creation Science Research Center. The court did not make the relevance of such evidence conditional on whether the Arkansas Board of Education knew the information. Instead, the court treated the evidence as speaking directly to the threshold question of what creation science was. Moreover, in *Edwards*, the Supreme Court adopted *McLean*’s analysis of such evidence without reservation . . .”).

<sup>38</sup> *Id.* at 723.

<sup>39</sup> *Id.* at 728.

<sup>40</sup> *Id.* at 732.

history exists, the legal implications for teaching the pro-evolution viewpoint could be profound.

## **B. The Endorsement Test**

Since its formulation in 1971, the three-pronged *Lemon* test has been the primary judicial vehicle for determining whether the government has established religion in public schools. Despite *Lemon*'s significance, many cases dealing with religion in public schools have employed Justice O'Connor's "endorsement test."<sup>41</sup> Indeed, the endorsement test has been invoked various times by even the U.S. Supreme Court, and the "reasonable observer" central to the test is assumed to have an extensive knowledge of the facts and history surrounding a case.<sup>42</sup> Justice O'Connor explains how the endorsement test meshes with the *Lemon* test:

The purpose prong of the *Lemon* test asks whether government's actual purpose is to endorse or disapprove of religion. The effect prong asks whether, irrespective of government's actual purpose, the practice under review in fact conveys a message of endorsement or disapproval. An affirmative answer to either question should render the challenged practice invalid.<sup>43</sup>

When applied, the U.S. Supreme Court has emphasized that "endorsement" is analogous to showing "favoritism" or "promotion" of a religion, where "at the very least, [endorsement] prohibits government from appearing to take a position on questions of religious belief or from making adherence to a religion relevant in any way to a person's standing in the political community."<sup>44</sup> When first explicating the endorsement test, Justice

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<sup>41</sup> See, e.g. *Kitzmiller*, 400 F. Supp. 2d 707; *Freiler v. Tangipahoa Parish Bd. of Educ.*, 185 F.3d 337 (5th Cir. 1999); *Selman v. Cobb Cty. Sch. Dist.*, 449 F.3d 1320 (11th Cir. 2006).

<sup>42</sup> See *Cty. of Allegheny v. ALCU* 492 U.S. 573, 620 (1989), *abrogated by* *Town of Greece, N.Y. v. Galloway*, 134 S. Ct. 1811 (2014); *Salazar v. Buono* 559 U.S. 700, 703 (2010); *Kitzmiller*, 400 F. Supp. 2d 707. See also Kristi L. Bowman, *Seeing Government Purpose Through the Objective Observer's Eyes: The Evolution-Intelligent Design Debates*, 29 HARV. J.L. & PUB. POL'Y 417, 425 (2006) ("a reasonable observer brings an increasingly extensive knowledge of issues of law to any analysis").

<sup>43</sup> *Lynch v. Donnelly*, 465 U.S. 668, 690 (1984) (O'Connor, J., concurring).

<sup>44</sup> *Cty. of Allegheny*, 492 U.S. at 620 (1989), quoting *Lynch*, 465 U.S. at 687 (citations omitted).



O'Connor described endorsement as being dependent upon public perceptions:

What is crucial is that a government practice not have the effect of communicating a message of government endorsement or disapproval of religion. It is only practices having that effect, whether intentionally or unintentionally, that make religion relevant, in reality or public perception, to status in the political community.<sup>45</sup>

Thus under the endorsement test, even if the government does not intend to endorse religion, a government policy can be unconstitutional if it creates a public *perception* of government endorsement of religion.

Justice O'Connor also explained that a government policy endorses religion when it makes some group feel like an "outsider":

The second and more direct infringement is government endorsement or disapproval of religion. Endorsement sends a message to nonadherents that they are outsiders, not full members of the political community, and an accompanying message to adherents that they are insiders, favored members of the political community. Disapproval sends the opposite message.<sup>46</sup>

The relevance of these legal doctrines to the teaching evolution is obvious: If there exists a cultural history of anti-religious advocacy associated with the advocacy of evolution, then, under current law, teaching evolution could cause many citizens to perceive that government schools are endorsing an anti-religious viewpoint. This would make an objective, informed religious person who is aware of the fact of these historical associations feel like a political outsider when evolution is taught. If that citizen is a theist, particularly a member of America's large Christian population, then the perception that the government has endorsed a viewpoint antithetical to their religion could be very strong. Public perceptions of evolution must be considered carefully in light of the following extensive documentation showing a long, well-known public

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<sup>45</sup> *Lynch*, 465 U.S. at 688 (O'Connor, J., concurring).

<sup>46</sup> *Id.* (O'Connor, J., concurring).

history of close associations between anti-religious activism and the advocacy of evolution.

## **Part II: Anti-Religious Activism Associated with the Advocacy of Evolution**

In November 2006, two Russian scientists reported in the leading scientific journal *Nature* that their country was experiencing a surge of opposition against evolution. While religion was cited by these Russian scientists as a partial cause of the growth of opposition to evolution, they also noted that the Russian populace interpreted evolution in light of the propaganda of the atheistic Soviet regime. According to these Russian scientists, their country is “now seeing the delayed effects of 70 years of enforced atheism and official support for darwinism in the Soviet Union.”<sup>47</sup> As a result, many opponents of Darwin in Russia “relate darwinism to Soviet ideology rather than to empirical natural science,”<sup>48</sup> leading to natural opposition to evolution among the Russian public.

Russia’s cultural and political history logically leads many Russians to associate the teaching of evolution with the “enforced atheism” and “ideology” of the Soviet regime. Obviously Russia is not America, but what if it were? Under current American legal tests, such an anti-religious history associating evolution with atheism could be quickly recognized by courts as creating an unconstitutional endorsement of atheism, inhibiting religion. Though America has never experienced the tyranny of “enforced atheism,” evolution has commonly been advocated alongside anti-religious activism. In fact, a variety of leading evolutionary scientists have admitted that it would not be illogical for the general public to infer a close association between evolution and atheist, materialist ideology.

In 1997, Harvard zoologist Richard Lewontin argued in the widely-read *New York Review of Books* that many pro-evolution forces have historically been aggressive in their anti-religious activities. Lewontin recounts that in the 1950s, the scientific elite sought to increase the teaching of evolution in schools and “exten[d] its domination by attacking the control that families had maintained over the ideological formation of their

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<sup>47</sup> Georgy S. Levit, Letter to the Editor, *Creationists Attack Secular Education in Russia*, 444 NATURE 265 (2006).

<sup>48</sup> *Id.*

children.”<sup>49</sup> “The result was a fundamentalist revolt,” explained Lewontin, “the invention of ‘Creation Science,’ and successful popular pressure on local school boards and state textbook purchasing agencies to revise subversive curricula and boycott blasphemous textbooks.”<sup>50</sup> Lewontin concludes that there is a culture war, but “[t]he real war is between the traditional culture of those who think of themselves as powerless and . . . materialism.”<sup>51</sup> Lewontin goes on to take a side in this “war,” noting that evolutionary scientists have “a prior commitment, a commitment to materialism,” further admitting “that materialism is absolute, for we cannot allow a Divine Foot in the door.”<sup>52</sup> If Lewontin is right, then some leading scientists see the teaching of evolution as a way to oppose traditional religion.

In his 2002 book, *What It Means to Be 98% Chimpanzee*, University of North Carolina Charlotte anthropologist Jonathan Marks observes that cultural conflicts between science and religion are as much the result of scientists making anti-religious statements in the name of evolution as they are anything else:

Evolution provides the most empirically valid explanation that we have for the present existence of life. Period. But why should it really matter whether we are descended from arboreal hairy primates or not? . . . The reason it matters to so many people is that scientists have made it matter, and they’ve done so in the worst possible way. They’ve taken a proposition . . . “We are descended from apes”—and stretched it into a series of additional propositions, often both authoritative and odious. Thirty years ago, in a widely read scientific-philosophical work called *Chance and Necessity*, the French molecular biologist Jacques Monod argued that evolution shows life to be meaningless.<sup>53</sup>

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<sup>49</sup> Richard C. Lewontin, *Billions and Billions of Demons*, N.Y. REV. OF BOOKS (Jan. 9, 1997) (reviewing CARL SAGAN, *THE DEMON-HAUNTED WORLD: SCIENCE AS A CANDLE IN THE DARK* (1997)) (emphasis added),

<http://www.nybooks.com/articles/archives/1997/jan/09/billions-and-billions-of-demons/>.

<sup>50</sup> *Id.*

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

<sup>53</sup> JONATHAN MARKS, *WHAT IT MEANS TO BE 98% CHIMPANZEE* 281 (2002).

Also in 2002, pro-evolution physicist Karl Giberson and historian Donald Yerxa discussed the anti-religious agenda of a small but influential cadre of leading scientific writers who expound on Darwin to the public. According to Giberson and Yerxa, the writings of these scientists generate a trickle-down effect, creating public perceptions of an anti-religious agenda associated with the advocacy of evolution. “[T]here is not a single leading popularizer of science who openly holds traditional religious views, and there are very few who hold any views that could be described as religious,”<sup>54</sup> write Giberson and Yerxa. Many of these writers “are positively hostile to traditional religion and committed to demonstrating that science not only fails to corroborate any religious perspectives, but can actually dismantle and refute any religious perspective on the world.”<sup>55</sup> The result is that “[p]ublic perceptions of science are thus shaped in important ways by that very small subset of the scientific community.”<sup>56</sup>

Legal scholar Jeffrey Addicott argues that there are many “Darwinian activists [who] proclaim that only Darwinistic thinking can unlock life’s most pressing questions and, at most, all ideas about the existence of a Creator-God are nothing more than a collection of folklore, void of scientific or historical value.”<sup>57</sup> Francis Collins, Director of the National Institutes of Health and one-time head of the Human Genome Project, who is both a proponent of Darwinian evolution and a self-professed Christian, blames current tensions over evolution on anti-religious statements from the scientific community:

I don’t think it’s fair to blame believers for getting defensive about attacks on the Bible when they see their whole belief system is under attack from some members of the scientific community who are using the platform of science to say, “We don’t need God anymore, that was all superstition, and you guys should get over it.” Believers then feel some requirement to respond, and this has led to an unfortunate escalation of charges and countercharges. As a result of the

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<sup>54</sup> KARL GIBERSON & DONALD YERXA, SPECIES OF ORIGINS: AMERICA’S SEARCH FOR A CREATION STORY 122 (2002).

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 120.

<sup>57</sup> Jeffrey F. Addicott, *Storm Clouds on the Horizon of Darwinism: Teaching the Anthropic Principle and Intelligent Design in the Public Schools*, 63 OHIO ST. L.J. 1507, 1562 (2002).

tensions over evolution, I think we see an increasing tendency for believers to dig in about things like Genesis 1 and 2.<sup>58</sup>

Attacks on religion from evolutionary scientists are increasing. In 2006, 49 scientists (mostly biologists) from the University of Virginia wrote en masse that “[n]ot only does evolution clash with religious dogma, but it undermines the significance that some would like to give to the place of humans in the universe.”<sup>59</sup> The following month, the eminent evolutionary biologist Jerry Coyne from the University of Chicago discussed evolution education on NBC’s *Today* show, declaring that “[t]he scientific way of looking at the world, which depends on evidence, and the religious way of looking at the world, which depends on faith, are fundamentally incompatible.”<sup>60</sup> Later that year, *Time* magazine reported in an article discussing evolution that “the antireligion position is being promoted with increasing insistence by scientists . . . .”<sup>61</sup>

Perhaps the most striking example of the recent spike in anti-religious advocacy associated with evolution came in November 2006 when the *New York Times* science desk covered a conference held at a prestigious biotech Mecca, the Salk Institute for Biological Studies in La Jolla, California. The story reported a striking agenda on the part of leading scientists present at the conference to stifle religious belief in order to promote Darwinism to the public. The *New York Times* wrote that “one speaker after another called on their colleagues to be less timid in challenging teachings about nature based only on scripture and belief.” The scientists were worried that evolution by natural selection and other views are “losing out in the intellectual marketplace” and one scientist

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<sup>58</sup> David Ewing Duncan, *The Discover Interview: Francis Collins*, 2 DISCOVER 44, 47 (2007).

<sup>59</sup> Paul N. Adler, et al., Letter to the Editor, *Debating Intelligent Design*, U. VA. MAG. (2006), [http://uvamagazine.org/articles/letters\\_to\\_the\\_editor5](http://uvamagazine.org/articles/letters_to_the_editor5).

<sup>60</sup> NBC TODAY, *Pope Enters the Debate on Intelligent Design*, Transcript at 10, Sept. 1, 2006 (on file with author). See also *In the News*, U. CHI. CHRON. (Sept. 21, 2006), <http://chronicle.uchicago.edu/060921/inthenews.shtml>. (In his September 1, 2006 interview on NBC’s Today Show, “Coyne explained that unlike those with a religious view of life who depend on faith, scientists’ view of the world is based on evidence.”).

<sup>61</sup> David Van Biema, *God vs. Science*, TIME, Nov. 13, 2006, at 48, <http://content.time.com/time/magazine/article/0,9171,1555132,00.html>.

sarcastically said the viewpoints “have run the gamut from A to B. Should we bash religion with a crowbar or only with a baseball bat?”<sup>62</sup>

The British science journal *New Scientist* also covered the Salk conference, recounting that it had “all the fervor of a revivalist meeting” with “plenty of preaching.” Yet *New Scientist* also reported that it was “no religious gathering—quite the opposite.” The journal quoted Nobel Prize winning physicist Stephen Weinberg saying, “[t]he world needs to wake up from the long nightmare of religion,” and “[a]nything we scientists can do to weaken the hold of religion should be done, and may in fact be our greatest contribution to civilisation.”<sup>63</sup> Carolyn Porco, a senior research scientist at the Space Science Institute in Boulder, Colorado, said “If anyone has a replacement for God, then scientists do.”<sup>64</sup> Richard Dawkins argued at the meeting that “religious education is ‘brainwashing’ and ‘child abuse’.”<sup>65</sup> Following the conference, atheist neuroscientist Sam Harris lamented the fact that some attending scientists “gave voice to the alien hiss of religious lunacy,” saying their words were surprising because “people who looked like scientists, had published as scientists” nonetheless supported religion.<sup>66</sup>

These preliminary anecdotes reveal that there is a very real cultural phenomenon of opposing religion while advancing evolutionary science, and they show that further investigation is warranted. Despite widespread attempts from the scientific community to tell the public that evolution and religion are compatible,<sup>67</sup> anti-religious advocacy associated with the pro-Darwin viewpoint is common and widely known in the public sphere.

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<sup>62</sup> George Johnson, *A Free-for-All on Science and Religion*, N.Y. TIMES, Nov. 21, 2006, at D6 (emphasis added).

<sup>63</sup> Michael Brooks & Helen Phillips, *Beyond Belief: In Place of God*, NEW SCIENTIST (Nov. 20, 2006), <http://www.newscientist.com/channel/opinion/mg19225780.142-beyond-belief-in-place-of-god.html>.

<sup>64</sup> *Id.*

<sup>65</sup> Johnson, *supra* note 62.

<sup>66</sup> Sam Harris, *Beyond the Believers*, FREE INQUIRY, Feb.—Mar. 2007, at 20, 20.

<sup>67</sup> See NAT’L ACAD. OF SCI., SCIENCE AND CREATIONISM: A VIEW FROM THE NATIONAL ACADEMY OF SCIENCE 6 (1984); NAT’L ACAD. OF SCI., SCIENCE AND CREATIONISM: A VIEW FROM THE NATIONAL ACADEMY OF SCIENCES 7 (2d ed. 1999); NAT’L ACAD. OF SCI., SCIENCE, EVOLUTION, AND CREATIONISM 13 (2008).

## A. Early History of the “Warfare” Between Evolution and Religion

Historian and legal scholar Edward J. Larson writes that prior to Darwin “the doctrine of special creation had dominated Western biological thought.”<sup>68</sup> But even early evolutionary ideas had anti-religious associations. As historian Peter Bowler explains, pre-Darwinian formulations of evolution such as Lamarckism, were “firmly linked to materialism, atheism, and radical politics.”<sup>69</sup>

After the publication of Darwin’s *Origin of Species* in 1859, the link between anti-religious activities and evolution became stronger. Larson observes that “[b]y replacing a divine Creator with a survival-of-the-fittest process as the immediate designer of species, Darwin’s theory undermined natural theology.”<sup>70</sup> Physicist Taner Edis explains that “[e]volutionary theory immediately caused religious turmoil.”<sup>71</sup> Richard Dawkins applauds this intellectual shift, noting that “although atheism might have been logically tenable before Darwin, Darwin made it possible to be an intellectually fulfilled atheist.”<sup>72</sup>

The writings of leading 19th century intellectuals reflect the influence of Darwin’s revolution on thought. Karl Marx wrote that Darwin’s work dealt “a death blow” to “[t]eleology’ in the natural sciences.”<sup>73</sup> Nietzsche biographer Curtis Cate explains that “it had dawned on [Nietzsche] that Darwin, with this theory of biological evolution stretched out over an enormous passage of time, had dealt to all forms of anthropomorphic religion a blow far more deadly than the one Copernicus had dealt to medieval Christianity.”<sup>74</sup> Cate continues: “What Nietzsche liked about Darwin’s theory was its . . . calm annihilation of the fairy-tale fable of the Creation of the World . . . [m]an, according to this theory, was as

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<sup>68</sup> EDWARD J. LARSON, *EVOLUTION: THE REMARKABLE HISTORY OF A SCIENTIFIC THEORY* 107 (2004).

<sup>69</sup> Peter J. Bowler, *Evolution, in THE HISTORY OF SCIENCE AND RELIGION IN THE WESTERN TRADITION: AN ENCYCLOPEDIA* 459 (Gary B. Ferngren ed., 2000).

<sup>70</sup> LARSON, *supra* note 68, at 90.

<sup>71</sup> TANER EDIS, *SCIENCE AND NONBELIEF* 18 (2006).

<sup>72</sup> RICHARD DAWKINS, *THE BLIND WATCHMAKER* 6 (1986).

<sup>73</sup> JAMES RACHELS, *CREATED FROM ANIMALS: THE MORAL IMPLICATIONS OF DARWINISM* 110 (1990).

<sup>74</sup> CURTIS CATE, *FRIEDRICH NIETZSCHE* 354 (Overlook Press, 2005) (2002).

much the product of fortuitous accidents as were any of the ‘lower’ species.”<sup>75</sup>

In 1911, the influential embryologist Ernst Haeckel wrote a short booklet explaining his reasons for leaving organized religion, boasting that, “for fifty years I have fearlessly and without regard to consequences defended the true modern teachings of evolution, and have furthered its most important result: that from the vertebrate animals the human species have descended.”<sup>76</sup> He cited, “the utter impossibility of reconciling Christian beliefs about ‘creation,’ etc. with the important facts of evolution now established.”<sup>77</sup> Margaret Sanger, an early 20th century intellectual who founded Planned Parenthood notes, “The heaven of the traditional theology had been shattered by Darwinian science . . . .”<sup>78</sup>

Modern scholars also asserted that there were unmistakable theological implications drawn from Darwin’s theory. Prominent evolutionary biologist and textbook author Douglas Futuyma asserts that “Darwin’s dangerous idea” made belief in a designing God “superfluous”:

The philosopher Daniel Dennett called natural selection “Darwin’s dangerous idea” for a good reason: it is a very simple natural mechanism that explains the appearance of design in living things. Before Darwin, the adaptations and exquisite complexity of organisms were ascribed to creation by an omnipotent, beneficent designer, namely God, and indeed were among the major arguments for the existence of such a designer. Darwin’s (and Wallace’s) concept of natural selection made this “argument from design” completely superfluous. . . . It made the features of organisms explicable by processes that can be studied by science instead of ascribing them to miracles.<sup>79</sup>

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<sup>75</sup> *Id.* at 355.

<sup>76</sup> ERNST HAECKEL, THE ANSWER OF ERNST HAECKEL TO THE FALSEHOODS OF THE JESUITS CATHOLIC AND PROTESTANT 34 (1911).

<sup>77</sup> *Id.* at 29.

<sup>78</sup> MARGARET SANGER, THE PIVOT OF CIVILIZATION 159 (Humanity Books, 2003) (1922).

<sup>79</sup> Douglas Futuyma, *Natural Selection: How Evolution Works*, ACTIONBIOSCIENCE (Dec. 2004), <http://www.actionbioscience.org/evolution/futuyma.html>.



The eminent evolutionary biologist, the late Ernst Mayr, who was an architect of the modern neo-Darwinian paradigm of biology, summarizes the influence of Darwin by explaining that “the finalistic or teleological worldview” was an “impending ideology Darwin had to refute in order to be able to adopt natural selection.”<sup>80</sup> Mayr asserts that “[e]very modern discussion of man’s future . . . the purpose of man and the universe, and man’s place in nature rests on Darwin.”<sup>81</sup> He summarizes the broad anti-religious implications of Darwin’s work perceived by 19th century thinkers:

The intellectual revolution generated by Darwin went far beyond the confines of biology, causing the overthrow of some of the most basic beliefs of his age.

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What Darwin pointed out again and again was that any given phenomenon for which special creation had been invoked could be explained much better by his theory . . . .

.....

The adoption of evolution by natural selection necessitated a complete ideological upheaval. The “hand of God” was replaced by the working of a natural process. God was “dethroned,” as one of Darwin’s critics formulated it. Indeed, God did not play any role in Darwin’s explanatory schemes.<sup>82</sup>

Mayr further recounts that Darwin’s scientific theory of evolution by natural selection turned into “Darwinism,” wherein many of Darwin’s scientific postulates had philosophical implications that opposed reigning religious concepts of Darwin’s day:

[T]here are scientific theories that have become important pillars of ideologies, as is the case in Newtonianism, and this is certainly true for Darwinism. Some of Darwin’s important

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<sup>80</sup> ERNST MAYR, ONE LONG ARGUMENT: CHARLES DARWIN AND THE GENESIS OF MODERN EVOLUTIONARY THOUGHT 50 (1991).

<sup>81</sup> *Id.* at 7.

<sup>82</sup> *Id.* at 1, 94–95, 96.

new concepts, like variational evolution, natural selection, the interplay of chance and necessity, the absence of supernatural agents in evolution, the position of man in the realm of life, and others, are not only scientific theories but are at the same time important philosophical concepts, and characterize worldviews that have incorporated these concepts. Thus, as far as several of Darwin's most basic scientific theories are concerned, they have a legitimate standing in both science and in philosophy.

The rejection of special creation signified the destruction of a previously ruling worldview.<sup>83</sup>

Mayr goes on to explain that Darwinism faced an "uphill battle" in its fight for acceptance in society because it challenged "pillars of Christian dogma."<sup>84</sup> Princeton bioethicist Peter Singer puts it this way:

All we are doing is catching up with Darwin. He showed in the 19th century that we are simply animals. Humans had imagined we were a separate part of Creation, that there was some magical line between Us and Them. Darwin's theory undermined the foundations of that entire Western way of thinking about the place of our species in the universe.<sup>85</sup>

Forceful behind this intellectual shift were Darwin's dysteleological arguments that natural evil could not have been created by a loving God.<sup>86</sup> Darwin wrote: "I cannot persuade myself that a beneficent and omnipotent God would have designedly created the *Ichneumonidae* [a family of parasitic wasps] with the express intention of their feeding within the living bodies of caterpillars."<sup>87</sup> Darwin scholar George Levine explains that Darwin saw in biology "so much that goes awry, so much that is distorted,

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<sup>83</sup> *Id.* at 102.

<sup>84</sup> *Id.* at 38.

<sup>85</sup> Johann Hari, *Peter Singer: Some People Are More Equal Than Others*, THE INDEPENDENT (Oct. 9, 2011), <http://www.independent.co.uk/news/people/profiles/peter-singer-some-people-are-more-equal-than-others-551696.html>.

<sup>86</sup> See LARSON *supra* note 68, at 90-92. See also CORNELIUS G. HUNTER, *DARWIN'S GOD: EVOLUTION AND THE PROBLEM OF EVIL* (2001).

<sup>87</sup> Letter from Charles Darwin to Asa Gray (May 22, 1860), in 2 LIFE AND LETTERS OF CHARLES DARWIN 104 (Francis Darwin ed., Basic Books 1959) (1901).

cruel, violent,” that this led to deep “resentment against the beneficent, omniscient Creator who might be thought to have produced such horrors.”<sup>88</sup> Darwin himself viewed natural selection as a solution to the problem of evil which could replace theological explanations.<sup>89</sup> According to Darwin, “[t]here seems to be no more design in the variability of organic beings and in the action of natural selection, than in the course which the wind blows. Everything in nature is the result of fixed laws.”<sup>90</sup> (This topic of dysteological arguments will be discussed further in Section F.)

Historian Neil C. Gillespie likewise observes that “Darwin clearly rejected Christianity and virtually all conventional arguments in defense of the existence of God and human immortality.”<sup>91</sup> For example, in his *Autobiography*, Darwin argued that the Old Testament gives a “manifestly false history of the world” and asserted that he could not accept the miracles of Christianity because “the more we know of the fixed laws of nature the more incredible do miracles become—that the men at that time [of Christ] were ignorant and credulous to a degree almost incomprehensible by us.”<sup>92</sup>

After a lifetime studying evolution, Darwin’s personal views shifted from Christianity to a deistic or agnostic position. According to Gillespie, “[m]any scholars, even those who acknowledge the theism of the *Origin* period, agree that he became a conventional agnostic who rejected religion during his last twenty years.”<sup>93</sup> Gillespie observes that Darwin “was aware that such views as he called materialism tended toward atheism.”<sup>94</sup> Mayr declares that “[w]hether one wants to call him a deist, an agnostic, or an atheist, this much is clear, that in the *Origin* Darwin no longer required God as an explanatory factor. Creation as described in the Bible was contradicted by almost every aspect of the natural world.”<sup>95</sup>

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<sup>88</sup> GEORGE LEVINE, *DARWIN LOVES YOU: NATURAL SELECTION AND THE RE-ENCHANTMENT OF THE WORLD* 237–38 (2006).

<sup>89</sup> See HUNTER, *supra* note 86.

<sup>90</sup> CHARLES DARWIN, *THE AUTOBIOGRAPHY OF CHARLES DARWIN* 87 (Nora Barlow ed., W.W. Norton 1993) (1958).

<sup>91</sup> NEAL C. GILLESPIE, *CHARLES DARWIN AND THE PROBLEM OF CREATION* 141 (1979).

<sup>92</sup> DARWIN, *supra* note 90, at 85–86.

<sup>93</sup> GILLESPIE, *supra* note 91, at 141.

<sup>94</sup> *Id.* at 140.

<sup>95</sup> MAYR, *supra* note 80, at 15.

One passage from *Origin of Species* is often cited to promote the view that Darwin intended his ideas to be friendly towards religion. It reads: “There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed laws of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.”<sup>96</sup> However, when commenting on this passage, science-writer Chris Mooney, an atheist and an ardent promoter of evolution, explains why Darwin’s work was not necessarily intended to be favorable towards religion:

[L]ater in life Darwin explicitly disavowed this view of nature’s grandeur. Furthermore, the words “by the Creator” only showed up in the second edition of the *Origin*, released several weeks after the first. Why this change? Because after Darwin came under vicious attack for his views . . . he went back and stuck in references to God as a form of appeasement [of religious critics]. . . .

. . . .

After the publication of the *Origin*, Darwin steadily grew even more skeptical. In his autobiography, begun in 1876, he puzzled through various arguments for the existence of God, but finally concluded, “I for one must be content to remain an Agnostic.” . . . [T]his passage . . . puts Darwin far closer to Daniel Dennett and Richard Dawkins than rare theistic evolutionists like Kenneth Miller.<sup>97</sup>

Darwin’s personal views may have ultimately had little impact upon societal perceptions of his theory, but his own struggles exemplify the anti-religious implications that many drew and promoted from his theory. Bear in mind that the question is not whether Darwin and other writers are correct in their arguments and viewpoints regarding the proper religious and philosophical implications of evolution. The question is whether their

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<sup>96</sup> CHARLES DARWIN, *ORIGIN OF SPECIES* (6th ed. 1872) (1859), <http://literature.org/authors/darwin-charles/the-origin-of-species-6th-edition/chapter-15.html> (last visited Dec. 3, 2015).

<sup>97</sup> Chris Mooney, *Darwin’s Sanitized Idea*, SLATE MAG. (Sept. 24, 2001), [http://www.slate.com/articles/arts/culturebox/2001/09/darwins\\_sanitized\\_idea.html](http://www.slate.com/articles/arts/culturebox/2001/09/darwins_sanitized_idea.html).

statements exhibit an historical association between anti-religious activism and the advocacy of evolution.

In the decades following the publication of *Origin of Species*, leading scholars increasingly promoted a “warfare model” of science and religion that became “ingrained into the received wisdom of many secular Americans.”<sup>98</sup> Two books in the late nineteenth century played a major role in the crystallization of this “warfare” mindset: John William Draper’s *History of the Conflict Between Religion and Science* and Andrew Dickson White’s *A History of The Warfare of Science With Theology*. These books caricatured religion as historically at war with science and “fostered the impression that religious critics of Darwinism threatened to rekindle the Inquisition.”<sup>99</sup>

In particular, Draper saw Catholicism as a threat to the advancement of science, where “Roman Christianity and Science are recognized by their respective adherents as being absolutely incompatible,” and thus “mankind must make its choice—it cannot have both.”<sup>100</sup> Historian J. B. Russell observes that White’s book “is of immense importance, because it was the first instance that an influential figure had explicitly declared that science and religion were at war. It fixed the idea that ‘science’ stood for freedom and progress against the superstition and repression of ‘religion.’”<sup>101</sup> Importantly, Russell observes that “[White’s] viewpoint became conventional wisdom.”<sup>102</sup> While controversial, this “Draper-White thesis has been routinely employed in popular-science writing, by the media, and in a few older histories of science.”<sup>103</sup>

This “warfare model” was also employed by those promoting Darwinism in the early days of the debate over evolution. Thomas Henry

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<sup>98</sup> EDWARD J. LARSON, *SUMMER FOR THE GODS* 22 (1997).

<sup>99</sup> *Id.* at 21. See also Claude Welch, *Dispelling Some Myths About The Split Between Theology and Science in the Nineteenth Century*, in *RELIGION AND SCIENCE HISTORY, METHOD, DIALOGUE* 73 (W. Mark Richardson & Wesley J. Wildman eds., 1996).

<sup>100</sup> JOHN WILLIAM DRAPER, *HISTORY OF THE CONFLICT BETWEEN RELIGION AND SCIENCE* 363 (Cambridge Library Collections, photo. reprint 2009) (1898).

<sup>101</sup> JEFFREY BURTON RUSSELL, *INVENTING THE FLAT EARTH: COLUMBUS AND MODERN HISTORIANS* 38 (1991).

<sup>102</sup> *Id.*

<sup>103</sup> Colin A. Russell, *The Conflict of Science and Religion*, in *THE HISTORY OF SCIENCE AND RELIGION IN THE WESTERN TRADITION: AN ENCYCLOPEDIA* 12 (Gary B. Ferngren ed., 2000).

Huxley, a British naturalist contemporary with Darwin who was known as “Darwin’s Bulldog,” exhibits this fact:

Extinguished theologians lie about the cradle of every science as the strangled snakes beside that of Hercules; and history records that wherever science and orthodoxy have been fairly opposed, the latter have been forced to retire from the lists, bleeding and crushed if not annihilated; scotched if not slain.<sup>104</sup>

Peter Bowler contends that Huxley’s enthusiasm for evolution was motivated by a desire to pose a “challenge to religion . . . based upon the desire to present science as a source of authority to supplant the church.”<sup>105</sup> Many beyond Huxley shared this motive, as Bowler observes that in the decades following Darwin, “[o]pponents of religion openly rejoiced at the prospect of replacing ancient superstition with a philosophy based on a scientific understanding of human nature.”<sup>106</sup> By the 1909 celebration of the publication of *Origin of Species*, Marsha L. Richmond explains that for many of the attendees, “‘Darwinism’ connote[d] a certain naturalistic and materialistic worldview . . . .”<sup>107</sup> During this period, “evolution was widely perceived as a component of the rationalist campaign against organized religion.”<sup>108</sup> The perception that evolution opposed religion was becoming crystallized within society, as the warfare model became “[d]eeply embedded in the culture of the west, [and] has proven extremely hard to dislodge.”<sup>109</sup> Taner Edis suggests that the decades following Darwin’s work into the early twentieth century were “a golden age of nonbelief.”<sup>110</sup>

After the Scopes trial of 1925, the controversy over evolution died down as both sides entered a “thirty-year truce.”<sup>111</sup> The controversy was revived in 1959 when prominent evolutionists gathered at the University of

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<sup>104</sup> *Id.* at 15.

<sup>105</sup> PETER J. BOWLER, *EVOLUTION: THE HISTORY OF AN IDEA* 184 (3d ed. 2003) (1983).

<sup>106</sup> *Id.* at 274.

<sup>107</sup> Marsha L. Richmond, *The 1909 Darwin Celebration: Re-examining Evolution in the Light of Mendel, Mutation, and Meiosis*, 97 *ISIS* 447, 462 (2006).

<sup>108</sup> BOWLER, *supra* note 105, at 323.

<sup>109</sup> Russell, *supra* note 103, at 12.

<sup>110</sup> EDIS, *supra* note 71, at 21.

<sup>111</sup> EDWARD J. LARSON, *TRIAL AND ERROR: THE AMERICAN CONTROVERSY OVER CREATION AND EVOLUTION* 81 (2d ed. 1989) (1985).

Chicago to celebrate the centennial of the publication of *Origin of Species* in what has been called the pinnacle of America's acceptance of Darwinian thought.<sup>112</sup> Julian Huxley, the grandson of T. H. Huxley, proclaimed that "Darwinianism has come of age so to speak. We are no longer having to bother about establishing the fact of evolution."<sup>113</sup> *Time* magazine had previously reported Huxley's view that "Darwin . . . made it possible and necessary to dispense with the idea of God,"<sup>114</sup> and Huxley now declared at the centennial of *Origin of Species* that evolution spelled the death of religion:

In the evolutionary pattern of thought there is no longer either need or room for the supernatural. The earth was not created: it evolved. So did all the animals and plants that inhabit it, including our human selves, mind and soul as well as brain and body. So did religion. . . .

. . . .

Evolutionary man can no longer take refuge from his loneliness in the arms of a divinized father figure whom he himself created, nor escape from the responsibility of making decisions by sheltering under the umbrella of Divine Authority, nor absolve himself from the hard task of meeting his present problems by relying on the will of an omniscient but unfortunately inscrutable Providence. . . .

. . . .

Finally, the evolutionary vision is enabling us to discern, however incompletely, the lineaments of the new religion that we can be sure will arise to serve the needs of the coming era.<sup>115</sup>

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<sup>112</sup> THOMAS WOODWARD, DOUBTS ABOUT DARWIN: A HISTORY OF INTELLIGENT DESIGN 33 (2003).

<sup>113</sup> *Id.* at 34.

<sup>114</sup> *Books: Gloomy Debate*, TIME, June 19, 1944, at 101 (reviewing JULIAN HUXLEY, ON LIVING IN A REVOLUTION (1944)).

<sup>115</sup> Julian S. Huxley, *The Humanist Frame*, in THE HUMANIST FRAME 18, 19, 26 (Julian Huxley ed., 1961), <https://ia801405.us.archive.org/32/items/humanistframe000717mbp/humanistframe000717mbp.pdf>.

Peter Bowler explains that soon thereafter, the modern creationist movement began as a response to anti-religious evolution advocacy:

The more materialistic implications of Darwin's thinking became widely accepted only in the twentieth century, when biologists at last became convinced that natural selection was the driving force of evolution. As scientists began to insist that we must learn to live with the idea that we are the products of a purposeless, and hence, morally neutral natural world, so the modern creationist backlash began.<sup>116</sup>

As previously noted, Francis Collins makes a similar observation, casting the "creationist" movement as a direct response to evolutionary scientists who "are using the platform of science to say, 'We don't need God anymore, that was all superstition, and you guys should get over it.'"<sup>117</sup> Thus, while the "modern creationist backlash" is often criticized by legal scholars as purely religious opposition to evolution, jurists must take note of the fact that many view it as a direct response to anti-religious advocacy associated with the promotion of Darwinian evolution.

The early history of Darwin's theory demonstrates that it has long been associated with anti-religious advocacy. This has created a widespread perception within Western culture that evolution is at "war" with religion. Whether or not this perception is always deserved, it is difficult to dispute that this perception exists.

## **B. Evolution Advocacy by Prominent Scientists and Academics**

Many leading figures in the scientific and academic communities advocate to the public close connections between evolution and anti-theistic ideas. This section is the largest portion of this article, documenting statements and positions of many such individuals. Nonetheless, due to space limitations this section is only a small sampling of scientists and academic who publicly advocate evolution alongside anti-religious rhetoric. Again, the question is not whether these authors are correct in their interpretations of the proper relationship between evolution and religion.

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<sup>116</sup> Peter Bowler, *Evolution*, in THE HISTORY OF SCIENCE AND RELIGION IN THE WESTERN TRADITION: AN ENCYCLOPEDIA, *supra* note 103, at 524.

<sup>117</sup> Duncan, *supra* note 58.



The question is whether they are promoting evolution alongside advocacy that would be perceived as anti-religious.

A 2007 editorial by the editors of the world's most prestigious scientific journal, *Nature*, stated that "the idea that human minds are the product of evolution" is "unassailable fact," and concluded, "the idea that man was created in the image of God can surely be put aside."<sup>118</sup> Eugene Koonin, a leading biologist with the National Center for Biotechnology Information at the National Institutes of Health, wrote in the journal *Cell Cycle* that evolution has "far-reaching biological and philosophical implications" because "Darwin demonstrated that man emerged not by a special act of creation in God's image, but as a regular result of biological evolution, his ancestors being decidedly nondivine creatures."<sup>119</sup> This section is the most expansive of this article, as it documents many scientists who have promoted evolution alongside anti-religious advocacy.

A 1995 article in the journal *The Scientist* reported "some very prominent scientists belong to organized humanist groups that promote scientific explanations about the origin of the universe and fight for greater separation of church and state."<sup>120</sup> As an example, the article cited the "prestigious nontheist organization, the 80-member Amherst, N.Y.-based Academy of Humanism" which "boasts a membership" that includes leading evolutionary scientists such as "Harvard's [Edward O.] Wilson and evolutionary biologist Stephen Jay Gould, Nobel laureate physicist Murray Gell-Mann of the Santa Fe Institute, Nobelist Francis Crick of the Salk Institute, and Cornell University astronomer Carl Sagan."<sup>121</sup>

Crick and his scientific partner James Watson are two of the most eminent scientists of the 20th century; they shared the Nobel Prize in 1962

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<sup>118</sup> *Evolution and the Brain*, 447 NATURE 753 (2007).

<sup>119</sup> Eugene V. Koonin, *A Non-Adaptationist Perspective on Evolution of Genomic Complexity or the Continued Dethroning of Man*, 3 CELL CYCLE 280, 284 (2004).

<sup>120</sup> Steven Benowitz, *Irreligious Researchers Differ In Their Views On Faith*, THE SCIENTIST (Apr. 17, 1995) <http://www.the-scientist.com/?articles.view/articleNo/17360/title/Irreligious-Researchers-Differ-In-Their-Views-On-Faith/>.

<sup>121</sup> *Id.*

for co-discovering the double-helical structure of DNA.<sup>122</sup> A 2003 article in the *Telegraph* explained that the scientists had “both used the anniversary” of their discovery “to mount an attack on religion.”<sup>123</sup> They have plainly admitted their intent to use evolutionary science to oppose religion.

Crick explains his view that “[u]ntil Charles Darwin and Alfred Wallace independently hit on the basic mechanism driving biological evolution—the process of natural selection—the ‘Argument from Design’ appeared to be unanswerable. How could an organism as complex and well designed as man have arisen without the help of an all-wise Designer? . . . [T]his argument has collapsed completely.”<sup>124</sup> He writes that the “compelling argument” for “a Designer” was “shattered by Charles Darwin,”<sup>125</sup> and recounts that his “loss of faith in Christian religion and my growing attachment to science played a dominant part in my scientific career.”<sup>126</sup> Indeed, in his book on the origin of life on earth, Crick finds that those who oppose evolution are a “nuisance” and “cling to outmoded religious beliefs” since “man is a biological animal who has evolved largely by natural selection.”<sup>127</sup> He displays a staunchly materialistic viewpoint, writing “‘You,’ your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules. As Lewis Carroll’s Alice might have phrased it: ‘You’re nothing but a pack of neurons.’”<sup>128</sup> Crick contends that “[t]he record of religious beliefs in explaining scientific phenomena has been so poor in the past that there is little reason to believe that the conventional religions will do much better in the future.”<sup>129</sup>

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<sup>122</sup> Maurice Wilkins was a third recipient of this prize. See *The Nobel Prize in Physiology or Medicine 1962*, [http://nobelprize.org/nobel\\_prizes/medicine/laureates/1962/](http://nobelprize.org/nobel_prizes/medicine/laureates/1962/) (last visited Dec. 1, 2015).

<sup>123</sup> Roger Highfield, *Do Our Genes Reveal the Hand of God?*, TELEGRAPH (Mar. 20, 2003), <http://www.telegraph.co.uk/news/science/science-news/3306329/Do-our-genes-reveal-the-hand-of-God.html>.

<sup>124</sup> FRANCIS CRICK, *THE ASTONISHING HYPOTHESIS: THE SCIENTIFIC SEARCH FOR THE SOUL* 5 (1994).

<sup>125</sup> FRANCIS CRICK, *WHAT MAD PURSUIT: A PERSONAL VIEW OF SCIENTIFIC DISCOVERY* 25 (1988).

<sup>126</sup> *Id.* at 11.

<sup>127</sup> FRANCIS CRICK, *LIFE ITSELF: ITS ORIGIN AND NATURE* 163–64 (1981).

<sup>128</sup> CRICK, *supra* note 124, at 3.

<sup>129</sup> *Id.* at 258.

Crick's scientific partner, James D. Watson, similarly believes that "evolution represents science's most direct incursion into the religious domain."<sup>130</sup> He states that "[e]very time you understand something, religion becomes less likely . . . [o]nly with the discovery of the double helix and the ensuing genetic revolution have we had grounds for thinking that the powers held traditionally to be the exclusive property of the gods might one day be ours."<sup>131</sup> Richard Dawkins quotes Watson stating, "I don't think we're *for* anything. We're just products of evolution."<sup>132</sup>

Dawkins himself is perhaps the most widely known evolutionary biologist who uses evolution to oppose religion. His most famous line has already been mentioned, where he contends that "Darwin made it possible to be an intellectually fulfilled atheist."<sup>133</sup> But Dawkins is no armchair atheist: *Wired Magazine* reports that Dawkins is part of a new "crusade against religion" and is "the leading light of the New Atheism movement," a movement reportedly contending that "[r]eligion is not only wrong, it's evil."<sup>134</sup> Dawkins' views are also not simply those of an obscure academic: he is an influential evolutionary biologist and for years was Chair for the Public Understanding of Science at Oxford University.<sup>135</sup> Anthropologist Jonathan Marks calls him "a leading spokesman for science,"<sup>136</sup> and Campbell's popular college biology textbook praises Dawkins as one of "the very few scientists" who can "engag[e] and challeng[e] nonscientists."<sup>137</sup>

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<sup>130</sup> JAMES D. WATSON & ANDREW BERRY, *DNA: THE SECRET OF LIFE* 404 (2006).

<sup>131</sup> Highfield, *supra* note 123.

<sup>132</sup> RICHARD DAWKINS, *THE GOD DELUSION* 100 (2006). Additionally, Watson reportedly believes that "Africans less intelligent than Westerners." See Cahal Milmo, *Fury at DNA Pioneer's Theory: Africans Less Intelligent than Westerners*, *THE INDEPENDENT* (Oct. 16, 2007), <http://www.independent.co.uk/news/science/fury-at-dna-pioneers-theory-africans-are-less-intelligent-than-westerners-394898.html>.

<sup>133</sup> DAWKINS, *supra* note 72.

<sup>134</sup> Gary Wolf, *The Church of the Non-Believers*, *WIRED* (Nov. 1, 2006), <http://www.wired.com/2006/11/atheism/>.

<sup>135</sup> *Previous Holders of the Simonyi Professorship*, *THE SIMONYI PROFESSORSHIP*, <http://www.simonyi.ox.ac.uk/previous-holders-simonyi-professorship.html> (last visited Nov. 27, 2015).

<sup>136</sup> JONATHAN MARKS, *WHAT IT MEANS TO BE 98% CHIMPANZEE: APES, PEOPLE, AND THEIR GENES* 266 (2002).

<sup>137</sup> NEIL A. CAMPBELL, ET AL., *BIOLOGY 412* (Addison Wesley Longman 5th ed. 1999).

Indeed, Dawkins is probably the most widely read popular promoter of Darwinian evolution in the world today. His views on evolutionary biology are perhaps most succinctly explained in his widely acclaimed and aptly titled book, *The Blind Watchmaker*:

[T]he only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way. A true watchmaker has foresight: he designs his cogs and springs, and plans their interconnections, with a future purpose in his mind's eye. Natural selection, the blind, unconscious automatic process which Darwin discovered, and which we now know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind. It has no mind and no mind's eye. It does not plan for the future. It has no vision, no foresight, no sight at all. If it can be said to play the role of watchmaker in nature, it is the blind watchmaker.<sup>138</sup>

In *River Out of Eden: A Darwinian View of Life*, Dawkins argues that our universe merely has “blind physical forces and genetic replication,” and thus “[t]he universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind, pitiless indifference.”<sup>139</sup> He concludes that Darwinian evolution effectively eliminates “the god hypothesis”:

We explain our existence by a combination of the anthropic principle and Darwin's principle of natural selection. That combination provides a complete and deeply satisfying explanation for everything that we see and know. Not only is the god hypothesis unnecessary. It is spectacularly unparsimonious. Not only do we need no God to explain the universe and life. God stands out in the universe as the most glaring of all superfluous sore thumbs. We cannot, of course, disprove God, just as we can't disprove Thor, fairies, leprechauns and the Flying Spaghetti Monster. But, like

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<sup>138</sup> DAWKINS, *supra* note 72, at 5.

<sup>139</sup> RICHARD DAWKINS, *RIVER OUT OF EDEN: A DARWINIAN VIEW OF LIFE* 133 (1995).

those other fantasies that we can't disprove, we can say that God is very very improbable.<sup>140</sup>

Evolution plays a central role in Dawkins' fight against religion. He endorses the view that "Darwinism is the story of humanity's liberation from the delusion that its destiny is controlled by a power higher than itself"<sup>141</sup> and believes that invoking God as a cause is "self-indulgent, thought-denying skyhookery."<sup>142</sup> He consistently provides an anti-religious interpretation of evolution:

Darwinian evolution, specifically natural selection . . . shatters the illusion of design within the domain of biology, and teaches us to be suspicious of any kind of design hypothesis in physics and cosmology as well. I think the physicist Leonard Susskind had this in mind when he wrote, "I'm not an historian but I'll venture an opinion: Modern cosmology really began with Darwin and Wallace. Unlike anyone before them, they provided explanations of our existence that completely rejected supernatural agents . . . Darwin and Wallace set a standard not only for the life sciences but for cosmology as well."<sup>143</sup>

Many similar quotes could be given to show Dawkins' prominent opposition to religion while supporting evolution. A spokesperson for the NCSE once asserted that ID-proponents "invent enemies," and speculated that, "if Dawkins didn't exist, [ID proponents] would invent him anyway."<sup>144</sup> Yet innumerable other examples could be given of scientists and academics who similarly use evolution to oppose religion. To give a sampling:

Cornell evolutionary biologist and historian William Provine believes that "[e]volution is the greatest engine of atheism ever

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<sup>140</sup> Richard Dawkins, *Why There Almost Certainly Is No God*, THE HUFFINGTON POST (Oct. 23, 2006), [http://www.huffingtonpost.com/richard-dawkins/why-there-almost-certainl\\_b\\_32164.html](http://www.huffingtonpost.com/richard-dawkins/why-there-almost-certainl_b_32164.html).

<sup>141</sup> DAWKINS, *supra* note 132, at 5.

<sup>142</sup> *Id.* at 155.

<sup>143</sup> *Id.* at 118.

<sup>144</sup> Nicholas Matzke, *Episode 66*, THE INOCULATED MIND (Mar. 21, 2007) <http://www.inoculatedmind.com/?p=168> (on file with author).

invented,”<sup>145</sup> and sees clear anti-religious implications from evolution: “Naturalistic evolution has clear consequences that Charles Darwin understood perfectly. 1) No gods worth having exist; 2) no life after death exists; 3) no ultimate foundation for ethics exists; 4) no ultimate meaning in life exists; and 5) human free will is nonexistent.”<sup>146</sup> Provine recounts that evolution played a major role in his own personal loss of faith: “Evolution exhibited no sign whatsoever of purpose. Evolution just happens. I can remember the pain of loss lasted less than a week. As the creationists claim, belief in modern evolution makes atheists of people.”<sup>147</sup> In his view, “[o]ne can have a religious view that is compatible with evolution only if the religious view is indistinguishable from atheism.”<sup>148</sup>

Nobel laureate physicist Steven Weinberg testified in support of teaching only the evidence supporting evolution before the Texas State Board of Education.<sup>149</sup> Weinberg has described evolution as “natural selection acting on random undirected inheritable variations.”<sup>150</sup> Yet Weinberg says that his scientific career is motivated by a desire to disprove religion:

I personally feel that the teaching of modern science is corrosive of religious belief, and I’m all for that! One of the things that in fact has driven me in my life, is the feeling that this is one of the great social functions of science—to free people from superstition.<sup>151</sup>

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<sup>145</sup> William Provine, Keynote Address at the University of Tennessee, Knoxville Darwin Day 1998, *Evolution: Free Will and Punishment and Meaning in Life* (Feb. 12, 1998), [http://fp.bio.utk.edu/darwin/1998/provine\\_abstract.html](http://fp.bio.utk.edu/darwin/1998/provine_abstract.html) (on file with author).

<sup>146</sup> *Id.*

<sup>147</sup> William B. Provine, *No Free Will*, in *CATCHING UP WITH THE VISION: ESSAYS ON THE OCCASION OF THE 75TH ANNIVERSARY OF THE FOUNDING OF THE HISTORY OF SCIENCE SOCIETY*, 90 (SUPP.) *ISIS* S117, 123 (1999).

<sup>148</sup> *Id.*

<sup>149</sup> Michael King, *In Search of Intelligent Life at the SBOE*, *AUSTIN CHRONICLE* (Sept. 19, 2003), <http://www.austinchronicle.com/news/2003-09-19/178247/>.

<sup>150</sup> Stephen Weinberg, *Living in the Multiverse*, in *UNIVERSE OR MULTIVERSE?* (Bernard Carr ed., 2009) 40.

<sup>151</sup> Stephen Weinberg, Address to the 22nd Annual Freedom From Religion Foundation (November 1999), abstract in *Free People from Superstition*, *FREETHOUGHT TODAY* (Apr. 2000), <http://ffrf.org/legacy/fttoday/2000/april2000/weinberg.html>.

Weinberg praises the work of Dawkins in this effort, writing: “Given the battering that traditional religion has taken from the theory of evolution, it is fitting that the most energetic, eloquent and uncompromising modern adversaries of religion are biologists who helped us to understand evolution: first Francis Crick, and now Richard Dawkins.”<sup>152</sup>

Evolutionary biologist and science-writer Massimo Pigliucci explains that he “does not think there is any good reason to believe in a supernatural entity that created and somehow supervises the universe” and therefore he “relegate[s] God to the same realm as Santa Claus.”<sup>153</sup> Pigliucci also runs a secular humanist organization, whose website houses a presentation where he writes that “[m]ysticism and religion are not helpful in understanding the natural world.”<sup>154</sup> In another presentation opposing skeptics of Darwin entitled “Denying Evolution,” Pigliucci promotes materialism over religion: “Realism and naturalism are, of course, leaps of faith, but very small ones compared to those required by any religion or other method of inquiry proposed so far.”<sup>155</sup>

University of Exeter biologist and philosopher John Dupré asserts in *Darwin’s Legacy: What Evolution Means Today* that evolution delivers a “death blow” to “theocentric cosmologies” stating that “the growth of evolutionary theory that [Darwin] launched has provided a fatal injury to the pretension of religion.”<sup>156</sup> Dupré argues that “the religiously minded are right to be fearful of the general acceptance of evolutionary thought,” asserting in light of “the development of a convincing theory of evolution” we now have “no good reason for belief in God.”<sup>157</sup> In his view, “science,

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<sup>152</sup> STEVEN WEINBERG, *A Deadly Certitude*, in LAKE VIEWS: THIS WORLD AND THE UNIVERSE 211 (2009).

<sup>153</sup> Massimo Pigliucci, *Personal Gods, Deism, & the Limits of Skepticism*, 8 SKEPTIC, no. 2, 2000, at 38.

<sup>154</sup> Massimo Pigliucci, *How We Try to Understand the World: Science, Philosophy and Mysticism*, RATIONALLY SPEAKING, <http://life.bio.sunysb.edu/~massimo/rationallyspeaking/files/science-philos-myst.pdf> (on file with author).

<sup>155</sup> Massimo Pigliucci, *Denying Evolution*, RATIONALLY SPEAKING, <http://life.bio.sunysb.edu/~massimo/rationallyspeaking/files/denying-evolution.pdf> (on file with author).

Accord Massimo Pigliucci, *Creationism vs. Scientism: the Twin Dangers of Religious and Scientific Fundamentalism*, FREE INQUIRY, Summer 2003, at 32, 33.

<sup>156</sup> JOHN DUPRÉ, *DARWIN’S LEGACY: WHAT EVOLUTION MEANS TODAY* 41–42 (2003).

<sup>157</sup> *Id.* at 3, 46.

especially in the guise of Darwinism, has undermined any plausible grounds for believing that there are any gods or other supernatural beings.”<sup>158</sup>

Paul (P.Z.) Myers, a biologist at the University of Minnesota, Morris, is best known for his blog, *Pharyngula*, which *Nature* stated in 2006 was the *most popular* science blog on the internet.<sup>159</sup> Myers regularly uses his blog to support evolution and oppose religion.<sup>160</sup> *Pharyngula*’s official description on each of its pages boasts of its offering “[e]volution, development, and random biological ejaculations from a godless liberal.”<sup>161</sup> Myers believes that “[w]e need widespread *social* stigmatization of religion to eradicate religion . . . .”<sup>162</sup> In one instance, the *Pharyngula* blog was used to design an official “logo for the godless.”<sup>163</sup> Myers asserts when discussing evolution that “science is a threat to religion” and holds that “there is a very strong conflict between religion and science, and if you’re doing religion, you’re not thinking scientifically.”<sup>164</sup> His book *The Happy Atheist* promotes evolution while making comments like “religion is a parasite of the mind that makes people do stupid things and think stupid thoughts,” further stating, “religion is a clown circus.”<sup>165</sup> Elsewhere Myers calls federal payment for military chaplains “[w]elfare for the intellectually deficient”<sup>166</sup> and expresses his hope that “[w]hen we achieve post-theism, the question of what god is will be regarded as as [*sic*] a string of nonsense

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<sup>158</sup> *Id.* at 57.

<sup>159</sup> See *Top Five Science Blogs*, 442 NATURE 9 (2006). See also *Best Science Blog*, THE 2006 WEBLOG AWARDS: BEST SCIENCE BLOG (Dec. 7, 2006), [http://2006.weblogawards.org/2006/12/best\\_science\\_blog.php](http://2006.weblogawards.org/2006/12/best_science_blog.php).

<sup>160</sup> See e.g. P.Z. Myers, *More on that Miller guy*, PHARYNGULA (Sept. 9, 2006), <http://scienceblogs.com/pharyngula/2006/09/09/more-on-that-miller-guy/>.

<sup>161</sup> P.Z. Myers, PHARYNGULA, <http://freethoughtblogs.com/pharyngula> (last visited November 28, 2015).

<sup>162</sup> P.Z. Myers, RAVING ATHEISTS FORUM, (Sept. 20, 2007, 5:56 PM), <http://ravingatheists.com/forum/showthread.php?t=13602&page=2>.

<sup>163</sup> P.Z. Myers, *A Logo for the Godless: An Impossible Assignment?*, PHARYNGULA (Oct. 28, 2006)

<http://scienceblogs.com/pharyngula/search/pharyngula+a+logo+for+the+godless>.

<sup>164</sup> Reginald V. Finley Sr., Interview with P.Z. Myers, [www.infidalguy.com/index.php/component/commedia/popup/6888/673/6888/component](http://www.infidalguy.com/index.php/component/commedia/popup/6888/673/6888/component) (on file with author).

<sup>165</sup> P.Z. MYERS, THE HAPPY ATHEIST 8, 135 (2013).

<sup>166</sup> P.Z. Myers, RAVING ATHEISTS FORUM (Sept. 20, 2007, 5:58 PM), <http://ravingatheists.com/forum/showthread.php?t=13602&page=2>.



syllables.”<sup>167</sup> Myers concludes that “the only way we can resolve” conflicts between science and religion “is for someday religion to be reduced to little more than a hobby or a little eccentricity that certain people practice.”<sup>168</sup>

Physicist Victor Stenger wrote a book chapter entitled, “The Menace of Darwinism,” contending that Darwinism is antithetical to religious belief. He first quotes Dawkins saying, “The universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind, pitiless indifference.”<sup>169</sup> Stenger affirmatively cites Andrew Dickson White’s *A History of Warfare of Science and Theology in Christendom* as saying, “If the Darwinian theory is true, Genesis is a lie, the whole framework of the book of life falls to pieces, and the revelation of God to man, as we Christians know it, is a delusion and a snare.”<sup>170</sup>

Taner Edis contends: “evolution does, in fact, directly challenge commonly held religious views. Evolution says a lot more about the place of humans in the universe than, say, modern physical ideas about microscopic randomness. If there is anything at all to widely shared human intuitions about spiritual realities, it would seem life and creativity should be the responsibility of supernatural forces. Yet, according to Darwinian evolution, this is not so. And there is more. Not only does evolution motivate religious skepticism due to its uncompromising naturalism, but it also very easily leads into some traditional arguments for nonbelief.”<sup>171</sup> He further explains how Darwinism supports atheism:

Darwinian evolution combines chance and necessity. And the effect of evolution is to place creativity squarely within the natural world. So unsurprisingly, Darwin has become an icon among naturalistic nonbelievers. Moreover, evolution more directly relates to religious concerns. Biological evolution is greeted enthusiastically by skeptics and treated with suspicion by conservative believers, more so than any

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<sup>167</sup> P.Z. Myers, RAVING ATHEISTS FORUM (Sept. 20, 2007, 6:47 PM), <http://ravingatheists.com/forum/showthread.php?t=13602&page=3>.

<sup>168</sup> Finley, *supra* note 164.

<sup>169</sup> VICTOR J. STENGER, HAS SCIENCE FOUND GOD? 43 (2003).

<sup>170</sup> *Id.* at 46.

<sup>171</sup> EDIS, *supra* note 71, at 73.

of the challenges to spiritual views arising from modern physics.<sup>172</sup>

Writing in the journal, *Federation of American Societies for Experimental Biology*, editor-in-chief Gerald Weissmann argues that “much of society at large is beating a hasty retreat to the dark ages” because “superstition threatens our schools and Bible-thumpers preach that Darwin got it wrong.”<sup>173</sup> Weissman envisions winning a war against “zealots of all stripes [that] are chipping away at evolutionary science” and calls on scientists to mount a “defense—against humbug and the Endarkenment.”<sup>174</sup>

Ernst Mayr wrote in *Scientific American* that “Darwinism rejects all supernatural phenomena and causations” because “[t]he theory of evolution by natural selection explains the adaptedness and diversity of the world solely materialistically.”<sup>175</sup> He explains that “[t]he truly outstanding achievement of the principle of natural selection is that it makes unnecessary the invocation of ‘final causes’—that is, any teleological forces leading to a particular end” and therefore, “nothing is predetermined.”<sup>176</sup>

Niles Eldredge, a curator at the American Museum of Natural History and a prominent evolutionary paleontologist and author, writes that Darwin “stands among the giants of Western thought because he . . . taught us that we can understand life’s history in purely naturalistic terms, without recourse to the supernatural or divine.”<sup>177</sup>

Gregory Petsko, president of the American Society for Biochemistry and Molecular Biology (ASBMB), published editorials in the scientific journals *ASBMB Today* and *Genome Biology* asserting “there is no controversy” within science over evolution, while attacking religion,

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<sup>172</sup> *Id.* at 68.

<sup>173</sup> Gerald Weissmann, *The Facts of Evolution: Fighting the Endarkenment*, 19 THE FASEB J. 1581, 1581 (2005).

<sup>174</sup> *Id.* at 1581–82.

<sup>175</sup> Ernst Mayr, *Darwin’s Influence on Modern Thought*, SCI. AM., Nov. 24, 2009, at 79, 81 (emphasis added).

<sup>176</sup> *Id.* at 80

<sup>177</sup> NILES ELDRIDGE, TIME FRAMES: THE RETHINKING OF DARWINIAN EVOLUTION AND THE THEORY OF PUNCTUATED EQUILIBRIA 13 (1985).

maintaining that people believe in religion due to “insecurity and need for certainty.”<sup>178</sup>

Harvard professor Stephen Pinker writes that “we are outcomes of natural selection” and says that as opposed to religious explanations, “[t]his momentous fact explains our deepest strivings.”<sup>179</sup> Pinker boldly explains that “evolution challenges the literal truth of the creation story in the Bible and thus the authority that religion draws from it”<sup>180</sup> and suggests that religion is therefore untrustworthy: “As one creation minister put it, ‘If the Bible gets it wrong about biology, then why should I trust the Bible when it talks about morality and salvation?’”<sup>181</sup> Pinker also frames “monotheistic religions” as being opposed to evolution, claiming they have “persecuted . . . the theory of evolution.”<sup>182</sup> Pinker wrote in *Time*, “[t]he brain is a product of evolution, and just as animal brains have their limitations, we have ours,”<sup>183</sup> while also taking aim at traditional religious explanations of consciousness.

In his book *Darwin Loves You: Natural Selection and the Re-enchantment of the World*, Rutgers English professor George Levine imagines a “secular enchantment” of the world, building a secular culture upon Darwin wherein the world is “mindless and godless . . . without gods and traditional forms of consolation.”<sup>184</sup> Levine sees Darwin as “as an apostle of secularism” and seeks to use Darwin “as a model for the way science and the secular can inhabit the enchanted world.”<sup>185</sup>

Michael Shermer, psychologist and founder of *Skeptic Magazine*, asserts that “[t]here is no God, intelligent designer, or anything resembling

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<sup>178</sup> Gregory A Petsko, *It Is Alive*, ASBMB TODAY, August 2008, at 3, 3–4, <http://www.asbmbtoday-digital.com/asbmbtoday/200808/>; Gregory A. Petsko, *It is alive*, GENOME BIOLOGY (June 23, 2008), <http://www.genomebiology.com/2008/9/6/106>.

<sup>179</sup> STEVEN PINKER, *THE BLANK SLATE: THE MODERN DENIAL OF HUMAN NATURE* 52 (2002).

<sup>180</sup> *Id.* at 128.

<sup>181</sup> *Id.*

<sup>182</sup> Steven Pinker, *Introduction* to *WHAT IS YOUR DANGEROUS IDEA*, at xxiii, xxiv (John Brockman ed., 2007).

<sup>183</sup> Steven Pinker, *The Brain: The Mystery of Consciousness*, TIME (Jan. 29, 2007), <http://www.time.com/time/magazine/article/0,9171,1580394,00.html>.

<sup>184</sup> LEVINE, *supra* note 88, at 25–26 (2006).

<sup>185</sup> *Id.* at 205, 250.

the divinity as proffered by the world's religions,"<sup>186</sup> and believes that with the acceptance of Darwinism, "[t]he theory of top-down intelligent design of all life by or through a supernatural power was replaced with the theory of bottom-up natural design through natural forces."<sup>187</sup>

Tufts philosopher Daniel Dennett describes natural selection as "Darwin's dangerous idea" and a "universal acid" which "eats through just about every traditional concept"—including religion, because Darwin taught that life arose due to a "mindless and mechanical . . . algorithm" that is the result of "blind chance—coin flips if you like—and nothing else."<sup>188</sup> His book *Breaking the Spell: Religion as a Natural Phenomenon* not only staunchly promotes evolution and evolutionary explanations for the origin of religion, but seeks to strip its readers of their religious beliefs. Dennett declares "a moral imperative to spread the word of evolution"<sup>189</sup> and argues that "[e]verything we value—from sugar and sex and money to music and love and religion—we value for . . . evolutionary reasons, free-floating rationales that have been endorsed by natural selection."<sup>190</sup> According to Dennett, "Religious practices can be accounted for in the austere terms of evolutionary biology."<sup>191</sup> He compares belief in God to "the lore about Santa Claus or Wonder Woman" or an "imaginary friend," and compares religion to an ant whose "brain has been commandeered by a tiny parasite. . . ."<sup>192</sup> Dennett realizes that such arguments have implications for religious persons, for he expressly admits his intent to convert people away from their religious belief:

I appreciate that many readers will be profoundly distrustful of the tack I am taking here. They will see me as just another liberal professor trying to cajole them out of some of their

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<sup>186</sup> Michael Shermer, *Michael Shermer*, in *WHAT WE BELIEVE BUT CANNOT PROVE: TODAY'S LEADING THINKERS ON SCIENCE IN THE AGE OF CERTAINTY* 37, 38 (John Brockman ed., 2006).

<sup>187</sup> MICHAEL SHERMER, *WHY DARWIN MATTERS: THE CASE AGAINST INTELLIGENT DESIGN*, at xxii (2006).

<sup>188</sup> DANIEL C. DENNETT, *DARWIN'S DANGEROUS IDEA: EVOLUTION AND THE MEANINGS OF LIFE* 59, 63 (1995).

<sup>189</sup> DANIEL C. DENNETT, *BREAKING THE SPELL: RELIGION AS A NATURAL PHENOMENON* 268 (2006).

<sup>190</sup> *Id.* at 93.

<sup>191</sup> *Id.*

<sup>192</sup> *Id.* at 3, 210, 216.

convictions, and they are dead right about that—that’s what I am, and that’s exactly what I’m trying to do.<sup>193</sup>

Dennett further admits that his goal is to increase the political power of atheists, writing that “in the future, if more of us brights [a term for atheists] will just come forward and calmly announce that of course we no longer believe in any of those Gods, it will be possible to elect an atheist to some office higher than senator.”<sup>194</sup>

In a collection of writings by scientists who emphatically promote evolution, neuroscientist and best-selling author Sam Harris writes that “Science Must Destroy Religion” because misplaced “religious tolerance” has “obliged us to lie to ourselves—repeatedly and at the highest levels—about the compatibility between religious faith and scientific rationality.”<sup>195</sup> Harris decries the “ignorance”<sup>196</sup> of those who doubt evolution while protesting “the absurdity of most of our religious beliefs”<sup>197</sup> and stating that “[r]eligion persuades otherwise intelligent men and women to not think, or to think badly.”<sup>198</sup> Harris’s views have even been presented in the world’s top scientific journal. In a 2007 op-ed by Harris published in *Nature*, he argues that “Scientists should unite against [the] threat from religion,”<sup>199</sup> and laments that Francis Collins, a Christian and evolutionist, engaged in “high-minded squeamishness”<sup>200</sup> when asserting that religion and evolution are compatible. Harris castigates *Nature* for praising Collins’ book which sought to reconcile evolution with religion, asking “What does the ‘mode of thought’ displayed by Collins have in common with science? *The Language of God* should have sparked gasping outrage from the editors at *Nature*.”<sup>201</sup>

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<sup>193</sup> *Id.* at 53.

<sup>194</sup> *Id.* at 245.

<sup>195</sup> Sam Harris, *Science Must Destroy Religion*, in *WHAT IS YOUR DANGEROUS IDEA?*, *supra* note 182, at 148, 148.

<sup>196</sup> SAM HARRIS, *THE END OF FAITH: RELIGION, TERROR, AND THE FUTURE OF REASON* 230 (paperback ed., 2005) (2004).

<sup>197</sup> *Id.* at 48.

<sup>198</sup> *Id.* at 236–37.

<sup>199</sup> Sam Harris, Letter to the Editor, *Scientists Should Unite Against Threat from Religion*, 448 *NATURE* 864 (2007).

<sup>200</sup> *Id.*

<sup>201</sup> *Id.*

With so many major media sources discussing the “crusade against religion” by Dawkins and other scientists who are promoting evolution, a reasonable person observing such cultural trends would perceive an anti-religious association with the advocacy of evolution. And the public is well aware of these trends. *Newsweek* covered Dawkins as an “evolutionary biologist” fighting against religion, explaining that Dawkins views evolution as antithetical to faith because “Darwin appears to rob God of credit for his crowning achievement, which is us.”<sup>202</sup> *Wired* stated that “Dawkins is openly arguing that evolution must lead to atheism”<sup>203</sup> and *Time* quoted Dawkins saying that “Darwin provided a simpler explanation” than the view that God created life.<sup>204</sup> P.Z. Myers portrayed the *Time* article as with a graphic depicting God and Darwin in a fight and asking “Who will survive this debacle of biblical proportions?”<sup>205</sup> After reporting on a conference where Eugenie Scott, Dawkins, Sam Harris, and others spoke, a news article entitled, “Religion Must Be Destroyed, Atheist Alliance Declares,” reported that the message at the conference was that “[s]cience must ultimately destroy organized religion.”<sup>206</sup>

While not all evolutionary scientists would publicly join Dawkins et al.’s crusade for atheism, many leading proponents of evolution have maintained that under evolution, our species arose via accidental and unpredictable mechanisms that operated without divine oversight. As the influential biologist Jacques Monod wrote, with “the understanding of the random physical basis of mutation that molecular biology has provided, the mechanism of Darwinism is at last securely founded, and man has to realize that he is a mere accident.”<sup>207</sup> This view is commonly associated with advocacy of evolution, but many reasonable informed observers would consider it atheistic and antithetical to traditional religious viewpoints.

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<sup>202</sup> Jerry Adler, *The New Naysayers*, NEWSWEEK (Sept. 10, 2006), <http://www.newsweek.com/new-naysayers-109697>.

<sup>203</sup> Wolf, *supra* note 134.

<sup>204</sup> David Van Biema, *supra* note 61.

<sup>205</sup> P.Z. Meyrs, *Time Should Have Used This for Their Cover*, PHARYNGULA (NOV. 6, 2006), <http://scienceblogs.com/pharyngula/2006/11/06/time-should-have-used-this-for/>.

<sup>206</sup> Matt Purple, *Religion Must Be Destroyed, Atheist Alliance Declares*, CNSNEWS.COM (July 7, 2008), <http://www.cnsnews.com/news/article/religion-must-be-destroyed-atheist-alliance-declares>.

<sup>207</sup> HORRACE F. JUDSON, *THE EIGHTH DAY OF CREATION* 192 (expanded ed. 1996) (1979).

In 2005, 39 Nobel Laureates wrote the Kansas State Board of Education backing the teaching of evolution. They framed evolution in terms that most religious persons would find objectionable, explaining that “evolution is understood to be the result of an unguided, unplanned process of random variation and natural selection.”<sup>208</sup> Indeed, numerous articles in scientific journals have explained the processes behind Darwinian evolution as being “random,” “chance,” “unplanned,” or “undirected.”<sup>209</sup> But no

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<sup>208</sup> Letter from Alexi A. Abrikosov et al., to Kansas State Board of Education (Sept. 9, 2005), [http://media.ljworld.com/pdf/2005/09/15/nobel\\_letter.pdf](http://media.ljworld.com/pdf/2005/09/15/nobel_letter.pdf) (on file with author). See Scott Rothschild, *Nobel Laureates Urge Rejection of Intelligent Design*, LAWRENCE J. WORLD (Sept. 15, 2005), [http://www2.ljworld.com/news/2005/sep/15/nobel\\_laureates\\_urge\\_rejection\\_intelligent\\_design/?breaking#comments](http://www2.ljworld.com/news/2005/sep/15/nobel_laureates_urge_rejection_intelligent_design/?breaking#comments).

<sup>209</sup> See *Darwin's Detractors*, 358 NATURE 698 (1992) (supporting the view that evolution is “undirected”); Crispin J. Miller & Teresa K. Attwood, *Bioinformatics Goes Back to the Future*, 4 NATURE REVS. MOLECULAR CELL BIOLOGY 157, 157 (2003) (“Underpinning this idea is the assumption that genes that have similar functions have often diverged from a common ancestor (that is, they are related by homology), and that this divergence occurs by a process of random mutation that results in evolutionarily more distant sequences becoming progressively less similar to one another.”); T.H. Morgan, *Chance or Purpose in the Origin and Evolution of Adaptation*, 31 SCI. 201, 202 (1910) (“To the majority of evolutionists accepting the theory of natural selection, evolution is the result of accidental variation; it is haphazard or due to chance. By taking this ground the selectionist feels that he stands on the evidence of facts, for ‘chance’ variations he holds can be demonstrated to occur, and secondly that he escapes the onus of explaining how the adaptive variations arise, for he believes that there is no relation between the creation of something new and the part it subsequently plays in the welfare of the species.”); Russel Lande, *Genetics and Demography in Biological Conservation*, 241 SCI. 1455, 1455 (1988) (describing a process of evolution as “random genetic drift” and “random fluctuations in gene frequencies”); Jerry A. Coyne, *Genetics and Speciation*, 355 NATURE 511, 514 (1992) (describing a process of evolution as “random genetic drift”); H. Allen Orr, *The Genetic Theory of Adaptation: A Brief History*, 6 NATURE REVS. GENETICS 119, 122 (2005) (“The essence of Darwinian evolution is that populations must attempt this return by producing mutations that are random with respect to the organism’s need, that is those that have random direction in phenotypic space.”); Stephen Jay Gould, *Darwinism and the Expansion of Evolutionary Theory*, 216 SCI. 380, 381 (1982) (“The claim for creativity has important consequences and prerequisites that also become part of the Darwinian corpus. Most prominently, three constraints are imposed on the nature of genetic variation (or at least the evolutionarily significant portion of it). . . . It must be undirected”; “The essence of Darwinism lies in a claim that natural selection is the primary directing force of evolution, in that it creates fitter phenotypes by differentially preserving, generation by generation, the best adapted organisms from a pool of random variants . . . that supply raw material only, not direction itself.”); James E. Darnell, Jr., *Implications of RNA · RNA Splicing in Evolution of Eukaryotic Cells*, 202 SCI. 1257, 1259 (1978) (“When a polypeptide that could perform a specific function first arose, association with other randomly evolved peptides might have resulted in enhancement,

scientific article laid out these views better than Francisco J. Ayala's article, "Darwin's greatest discovery: Design without designer," published in *Proceedings of the National Academy of Sciences USA* in 2007.

Ayala, who is a leading evolutionary biologist and former president of the American Association for the Advancement of Science, explained that "[c]hance is . . . an integral part of the evolutionary process" because "[t]he mutations that yield the hereditary variations available to natural

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extension, or regulation of that function."); *In Brief*, 4 NATURE REVS. GENETICS 405, 405 (2003) ("Lenski *et al.* show that digital organisms—computer programs that replicate, mutate and compete in a computational environment—can model the origin of traits through random mutation and natural selection."); Benjamin Prud'homme & Sean B. Carroll, *Monkey See, Monkey Do*, 38 NATURE GENETICS 740, 741 (2006) ("Evolution results from the interplay between chance (random mutations) and necessity (directional selection."); Elizabeth Pennisi, *Nature Steers a Predictable Course*, 287 SCI. 207, 207 (2000) ("Some evolutionary theorists have argued that 'genetic drift,' random gene changes that accumulate over time, underlies the evolution of new species. Thus, even with natural selection, evolution's course should be rather unpredictable and not likely to be repeated time, and time again, they concluded."); Jack L. King & Thomas H. Jukes, *Non-Darwinian Evolution*, 164 SCI. 788, 792 (1969) ("Once again, generation of evolutionary changes appears to originate primarily from random point mutations."); Nicholas H. Barton & Peter D. Keightley, *Understanding Quantitative Genetic Variation*, 3 NATURE REVS. GENETICS 11, 11, 18 (2002); Gina Bari Kolata, *Paleobiology: Random Events over Geological Time*, 189 SCI. 625, 660 (Aug. 22, 1975) ("Randomness in evolution is not unexpected, Boucot points out."); Tomoko Ohta & Motoo Kimura, *Amino Acid Composition of Proteins as a Product of Molecular Evolution*, 174 SCI. 150, 150, 153 (1971) ("The average amino acid composition of proteins is determined by the genetic code and by random base changes in evolution" and "the amino acid composition is determined largely by the existing genetic code and the random nature of base changes in evolution."); Marilyn J. Roosinck, *Symbiosis Versus Competition in Plant Virus Evolution*, 3 NATURE REVS. MICROBIOLOGY 917, 917 (2005) ("The Darwinian model of evolution by natural selection states that evolution is a gradual process of change that is produced by the accumulation of random mutations followed by competitive selection."); Robert L. Carroll, *Between Water and Land*, 437 NATURE 38, 39 (2005) ("Random mutations in one or the other of these developmental pathways could have led to alternative directions of evolutionary change."); J.T. Cunningham, *Hormones and Evolution*, 130 NATURE 915, 915 (1932) (calling evolution the result of "random mutation[s]"); Mark Ridley, *In His Own Time*, 338 NATURE 26, 26 (1989) (reviewing PETER J. BOWLER, *THE NON-DARWINIAN REVOLUTION: REINTERPRETING A HISTORICAL MYTH* (1988)) (calling "the darwinian sort" of evolution "contingent, unplanned"); C.H. Waddington, *Evolutionary Systems—Animal and Human*, 183 NATURE 1634, 1634-35 (1959) ("One of the most firmly based doctrines of modern genetics is that mutation is a random process. . . . In present-day biology, evolution is envisaged as resulting from the interaction between, on one hand, the genetic system characterized by random mutation, and on the other, natural selection.").



selection arise at random.”<sup>210</sup> He contends that by finding that “the design of living organisms can be accounted for as the result of natural processes,” Darwin completed a “conceptual revolution” that “is nothing if not a fundamental vision that has forever changed how mankind perceives itself and its place in the universe.”<sup>211</sup> His article concludes that “[n]atural selection does not have foresight; it does not anticipate the environments of the future,” and thus “[i]n evolution, there is no entity or person who is selecting adaptive combinations.”<sup>212</sup> Ayala concludes that “evolution conveys chance and necessity jointly enmeshed in the stuff of life; randomness and determinism interlocked in a natural process . . . .”<sup>213</sup>

Stephen Jay Gould was a leading evolutionary scientist of the 20th century who was called “America’s best-known champion of evolution.”<sup>214</sup> According to Gould, “Darwin developed an evolutionary theory based on chance variation and natural selection imposed by an external environment: a rigidly materialistic (and basically atheistic) version of evolution.”<sup>215</sup> In his book *Ever Since Darwin*, Gould explains that, “[b]efore Darwin, we thought that a benevolent God had created us,”<sup>216</sup> but because of Darwin’s ideas, “biology took away our status as paragons created in the image of God.”<sup>217</sup> In 2001, Gould echoed these views by writing that “[e]volution substituted a naturalistic explanation of cold comfort for our former conviction that a benevolent deity fashioned us directly in his own image . . . .”<sup>218</sup> He also explains that according to evolution, humans ultimately arose due to haphazard chance:

We are here because one odd group of fishes had a peculiar fin anatomy that could transform into legs for terrestrial creatures; because the earth never froze entirely during an

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<sup>210</sup> Francisco J. Ayala, *Darwin’s Greatest Discovery: Design Without Designer*, 104 (suppl. 1) PROC. OF THE NAT’L ACAD. OF SCI. 8567, 8573 (2007), [http://www.pnas.org/content/104/suppl\\_1/8567.full.pdf](http://www.pnas.org/content/104/suppl_1/8567.full.pdf).

<sup>211</sup> *Id.*

<sup>212</sup> *Id.* at 8572–73.

<sup>213</sup> *Id.* at 8573.

<sup>214</sup> GIBERSON & YERXA, *supra* note 54, at 49 (2002).

<sup>215</sup> STEPHEN JAY GOULD, *EVER SINCE DARWIN: REFLECTIONS IN NATURAL HISTORY* 33 (1977).

<sup>216</sup> *Id.* at 267.

<sup>217</sup> *Id.* at 147.

<sup>218</sup> Stephen Jay Gould, *Introduction to CARL ZIMMER, EVOLUTION: THE TRIUMPH OF AN IDEA* at ix, xi (2001).

ice age; because a small and tenuous species, arising in Africa a quarter of a million years ago, has managed, so far, to survive by hook and by crook. We may yearn for a “higher” answer—but none exists.<sup>219</sup>

One of Gould’s most celebrated arguments contends that under the random character of evolutionary processes, there is no reason to expect that humanity had to exist. Yet many theists would perceive this very argument as opposing the traditional view that God foreknew and planned the existence of the human species. Gould writes:

[W]e are the accidental result of an unplanned process . . . it’s all accident in a larger sense. We are the fragile result of an enormous concatenation of improbabilities, not the predictable product of any definite process. . . . There’s no reason to think that if the dinosaurs hadn’t become extinct, we and other mammals would have evolved as we did. . . . The impact of a large extraterrestrial body, that greatest of all improbabilities, may well have been the *sine qua non* of our existence. And hundreds of other historically contingent improbabilities were also essential parts of human evolution.<sup>220</sup>

Gould is very clear that there are “radical implications” of Darwinian evolution because natural selection is “deterministic,” and “chance in any form was anathema to many nineteenth-century thinkers, both then and now.”<sup>221</sup> He further argues that “consciousness would not have evolved on our planet if a cosmic catastrophe had not claimed the dinosaurs,” and therefore “we owe our existence, as large and reasoning mammals, to our lucky stars.”<sup>222</sup>

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<sup>219</sup> DAVID FRIEND & EDITORS OF LIFE, THE MEANING OF LIFE: REFLECTIONS IN WORDS AND PICTURES ON WHY WE ARE HERE 33 (1991).

<sup>220</sup> Stephen Jay Gould, *Extemporaenous Comments on Evolutionary Hope and Realities*, in DARWIN’S LEGACY 95, 101–02 (Charles L. Hamrum ed., 1983).

<sup>221</sup> Stephen Jay Gould, *In Praise of Charles Darwin*, in DARWIN’S LEGACY, *supra* note 220, at 1, 4–5.

<sup>222</sup> STEPHAN JAY GOULD, WONDERFUL LIFE: THE BURGESS SHALE AND THE NATURE OF HISTORY 318 (1989).

Additionally, Gould contends that the “philosophical content” of Darwin’s theory poses a “challenge to a set of entrenched Western attitudes”:

First, Darwin argues that evolution has no purpose. Individuals struggle to increase the representation of their genes in future generations, and that is all. If the world displays any harmony or order, it arises only as an incidental result of individuals seeking their own advantage—the economy of Adam Smith transferred to nature. Second, Darwin maintained that evolution has no direction; it does not lead inevitably to higher things. Organisms become better adapted to their local environments, and that is all. The “degeneracy” of a parasite is as perfect as the gait of a gazelle. Third, Darwin applied a consistent philosophy of materialism to his interpretation of nature. Matter is the ground of all existence; mind, spirit and God as well, are just words that express the wondrous results of neuronal complexity.<sup>223</sup>

Like Dawkins, Gould’s views do not represent those of an obscure academic. Gould was a celebrated Harvard professor, prolific author, and eminent paleontologist, and various humanist groups have called him “America’s unofficial evolutionist laureate.”<sup>224</sup> But Gould’s views are shared by many other scientists.

Gould’s Harvard colleague, the eminent sociobiologist Edward (E.) O. Wilson, is also a prolific author who sees evolutionary history as random and undirected. In his Pulitzer-prize winning book *On Human Nature*, Wilson explains that “[i]f humankind evolved by Darwinian natural selection, genetic chance and environmental necessity, not God, made the species.”<sup>225</sup> In his widely acclaimed book *Consilience*, Wilson argues that

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<sup>223</sup> GOULD, *supra* note 215, at 12–13.

<sup>224</sup> See *Stephen Jay Gould Papers, 1942–2004*, STANFORD UNIV. LIBRARIES, <https://lib.stanford.edu/notable-acquisitions/stephen-jay-gould-papers-1942-2004> (last visited Nov. 29, 2015).

<sup>225</sup> EDWARD O. WILSON, *ON HUMAN NATURE* 1 (2d ed. 2004) (1978).

“evolution by natural selection proceeds, as the French biologist Jacques Monod once put it (rephrasing Democritus), by chance and necessity.”<sup>226</sup>

In an article in *Harvard Magazine* subtitled, “The consequences of Charles Darwin’s ‘one long argument,’” Wilson further expounds a lack of purpose behind evolution:

[L]ife has diversified on Earth autonomously without any kind of external guidance. Evolution in a pure Darwinian world has no goal or purpose: the exclusive driving force is random mutations sorted out by natural selection from one generation to the next.<sup>227</sup>

Wilson writes that the “evolutionary epic . . . is as intrinsically ennobling as any religious epic. Material reality discovered by science already possesses more content and grandeur than all religious cosmologies combined.”<sup>228</sup> He maintains that “the idea of a biological God, one who directs organic evolution and intervenes in human affairs (as envisioned by theism), is increasingly contravened by biology,” and envisions a showdown between religion and evolution-based science where the “eventual result of the competition between the two world views . . . will be the secularization of the human epic and of religion itself.”<sup>229</sup> He also believes that a final account of human origins lies in evolution:

[L]ife as we know it has arisen by evolution. . . . [T]he human brain and all its activities have arisen from the same earthbound, autonomous process. Hence no more complicated explanation is needed to account for human existence, either scientifically or spiritually.<sup>230</sup>

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<sup>226</sup> EDWARD O. WILSON, *CONSCIENCE: THE UNITY OF KNOWLEDGE* 140 (Vintage Books 1999) (1998).

<sup>227</sup> Edward O. Wilson, *Intelligent Evolution: The Consequences of Charles Darwin’s “One Long Argument”*, HARV. MAG. (Nov.–Dec. 2005), <http://harvardmagazine.com/2005/11/intelligent-evolution.html>.

<sup>228</sup> Edward O. Wilson, *The Biological Basis of Morality*, THE ATLANTIC (Apr. 1998), <http://www.theatlantic.com/magazine/archive/1998/04/the-biological-basis-of-morality/377087/>.

<sup>229</sup> WILSON, *supra* note 226, at 290.

<sup>230</sup> FRIEND ET AL., *supra* note 219, at 33.

Echoing these views, leading paleoanthropologist Richard Leakey explains that “evolution is not here to produce us. We are fortunate to be here.”<sup>231</sup> The famous evolutionary paleontologist from Harvard, George Gaylord Simpson wrote in his book, *The Meaning of Evolution*, that if evolution is true, then “[m]an is the result of a purposeless and natural process that did not have him in mind.”<sup>232</sup> Simpson goes on to say that “[t]here is neither need nor excuse for postulation of nonmaterial intervention in the origin of life, the rise of man or any other part of the material cosmos.”<sup>233</sup> John Maynard Smith, another prominent evolutionary biologist of the 20th century, writes that “[t]he universe doesn’t seem to me to be like the kind of entity that could have a higher purpose.”<sup>234</sup>

Oxford University chemist Peter Atkins is a noted public activist in favor of evolution<sup>235</sup> who promotes similar views in his expositions of science to the public. He writes that “[s]cience is almost totally incompatible with religion” for “[s]cience reveals where religion conceals.”<sup>236</sup> While advocating evolution, Atkins sharply contends that humanity is without purpose:

Darwin effectively swept purpose aside in the living world. . . . All reimpositions of purpose are artifices of the religious to feed their faith. Humanity should accept that

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<sup>231</sup> Richard Leakey, *African Origins: A Review of the Road, in DARWIN’S LEGACY*, *supra* note 220, at 30.

<sup>232</sup> GEORGE GAYLORD SIMPSON, *THE MEANING OF EVOLUTION* 179 (Yale University Press 1949) (Simpson goes on to say that it is “a gross misrepresentation to say we are just an accident or nothing but an animal.” However, it is clear that his view that “[p]lan, purpose, goal, all absent in evolution to this point, enter with the coming of man and are inherent in the new evolution, which is confined to him” is at odds with the outlook many traditional theists have on life.).

<sup>233</sup> *Id.* at 135.

<sup>234</sup> Robert Wright interviews John Maynard Smith on science and religion, MEANINGOFLIFE.TV, <http://meaningoflife.tv/video.php?speaker=maynard%20smith&topic=scirel> (last visited Oct. 19, 2015).

<sup>235</sup> Michael Gross, *US-style creationism spreads to Europe*, 12 *CURRENT BIOLOGY* R265, R265–66 (2002). Peter Atkins, *Review of Darwin’s Black Box*, THE SECULAR WEB, [http://www.infidels.org/library/modern/peter\\_atkins/behe.html](http://www.infidels.org/library/modern/peter_atkins/behe.html) (last visited Sept. 22, 2015).

<sup>236</sup> Peter Atkins, *Who Really Works Hardest to Banish Ignorance?*, COUNCIL FOR SECULAR HUMANISM, [https://web.archive.org/web/20060910183042/http://www.secularhumanism.org/index.php?section=library&page=atkins\\_18\\_2](https://web.archive.org/web/20060910183042/http://www.secularhumanism.org/index.php?section=library&page=atkins_18_2) (last visited Sep. Nov. 18, 2015).

science has eliminated the justification for believing in cosmic purpose, and that any survival of purpose is inspired solely by sentiment.<sup>237</sup>

Stanford mathematician Keith Devlin likewise writes, “Living creatures capable of reflecting on their own existence are a freak accident, existing for one brief moment in the history of the universe. . . . There is no God, no Intelligent Designer, no higher purpose to our lives.”<sup>238</sup>

Robert Shapiro, a chemist and leading origin of life theorist at New York University, contends that understanding the natural chemical evolution of life is “dangerous” to religion because it leaves less room for God: “A successful scientific theory in this area would leave one less task for God to accomplish. The origin of life would be a natural . . . result of the physical laws that govern the universe. This latter thought falls directly in line with the idea of cosmic evolution[.] . . . No miracle or immense stroke of luck was needed to get it started.”<sup>239</sup> Likewise, astronomer Carl Sagan states: “Were the Earth to be started over again with all its physical features identical, it is extremely unlikely that anything closely resembling a human being would ever again emerge. There is a powerful random character to the evolutionary process.”<sup>240</sup> In Sagan’s view, “[t]he fossil record implies trial and error, an inability to anticipate the future, features inconsistent with an efficient Great Designer.”<sup>241</sup>

Ohio State University anthropologist Jeffrey McKee writes that,

The links of the human evolutionary chain were riddled with chance, coincidence, and chaos, and we cannot fit the links together without a full appreciation of these factors. . . . Natural selection merely ensures nothing more than the coincidence of the survival of survivors . . . . There is no

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<sup>237</sup> Peter Atkins, *Will science ever fail?*, 135 NEW SCI. 32, 32–35 (Aug. 8, 1992).

<sup>238</sup> Keith Devlin, *We Are Entirely Alone*, in WHAT IS YOUR DANGEROUS IDEA?, *supra* note 182, at 33, 33.

<sup>239</sup> Robert Shapiro, *We Will Understand the Origin of Life Within the Next Five Years*, in WHAT IS YOUR DANGEROUS IDEA? 65, 67–68 (John Brockman ed., 2007).

<sup>240</sup> CARL SAGAN, COSMOS 233 (Ballantine Books 2013).

<sup>241</sup> *Id.* at 18–19.

external selecting entity, just an intrinsic force with no particular direction beyond survival and reproduction.<sup>242</sup>

University of Illinois Urbana-Champaign psychologist Gary Czikó argues in his book *Without Miracles: Universal Selection Theory and the Second Darwinian Revolution* that, “Darwin discovered an explanation for the emergence of adapted complexity in nature that required neither a supernatural provider nor an instructive environment,” for evolution works “without purpose either on the part of the organism or on the part of a supernatural provider.”<sup>243</sup> He explains that “variations are blindly and ignorantly produced” and are the result of “absolutely blind and ignorant luck,” meaning “Darwin’s account required no divine providence.”<sup>244</sup> For Czikó, this means the “most appealing” part of modern evolutionary science is that “it provides this explanation without miracles.”<sup>245</sup>

Following the lead of the scientific community, many popular authors have advocated the view that evolution is random and blind, an idea which would be widely perceived as unfriendly to religion. National Geographic’s coffee table book *The Incredible Machine* explains that “we are children of chance” and that in light of our “evolutionary origins[,] . . . [h]uman life is indeed an accident, but it is a celestial accident, an accident so intricate that it will probably never be repeated[.]”<sup>246</sup> Writing for the popular science news website LiveScience.com, science journalist Ker Than contends that “Darwin’s truth can be a hard one to accept” because

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<sup>242</sup> JEFFREY K. MCKEE, THE RIDDLED CHAIN: CHANCE, COINCIDENCE, AND CHAOS IN HUMAN EVOLUTION 4, 18, 29 (2000) (Regarding Leonard’s thesis advisors, who are known scientific skeptics of evolution, McKee had harsh words: “DiSilvestro, Needham have become viewed as parasitic ticks hiding in the university’s scalp, who just got exposed by a close shave. I learned in Boy Scouts to twist the ticks when taking them out, so their heads don’t get embedded in the skin. Others prefer burning them off. What fate awaits OSU’s ticks remains to be seen.”). Robert Crowther, *In Ohio Darwinist Admits Plan to Burn Evolution Critics*, EVOLUTION NEWS AND VIEWS (Jan. 10, 2006, 5:17 PM), [http://www.evolutionnews.org/2006/01/in\\_ohio\\_darwinist\\_admits\\_plan.html](http://www.evolutionnews.org/2006/01/in_ohio_darwinist_admits_plan.html).

<sup>243</sup> GARY CZIKÓ, WITHOUT MIRACLES: UNIVERSAL SELECTION THEORY AND THE SECOND DARWINIAN REVOLUTION 20, 102–03, 190 (1995).

<sup>244</sup> *Id.* at 22, 283–84.

<sup>245</sup> *Id.* at 326.

<sup>246</sup> NAT’L GEOGRAPHIC SOC’Y, THE INCREDIBLE MACHINE 9, 11 (1994).

the “random” nature of evolution implies that “humans are not the products of special creation and that life has no inherent meaning or purpose.”<sup>247</sup>

Commenting on such viewpoints, the former president of the French Academie des Sciences, Pierre-Paul Grasse, observed that “[d]irected by all-powerful selection, chance becomes a sort of providence, which, under the cover of atheism, is not named but which is secretly worshipped.”<sup>248</sup> Likewise, historian Theodore Roszak argues that the chance component of Darwinism has been used to replace God:

Darwin had fashioned a doctrine of evolution that was objective and secular—meaning devoid of value and (above all) of God. . . . The main purpose of Darwinism was to drive every last trace of an incredible God from biology. But the theory replaces the old God with an even more incredible deity—omnipotent chance.<sup>249</sup>

Surveys and reports on the affiliations and viewpoints of leading scientists suggest that many of them view evolution as antithetical to religion. At the time of a 1996 survey, as at the turn of the century, about 40% of scientists believed in God,<sup>250</sup> but a related study of NAS scientists found “near universal rejection of the transcendent by NAS natural scientists.”<sup>251</sup> This was particularly acute among NAS biologists, where only 5.6% believed in God.<sup>252</sup> The authors contrasted the statements of NAS booklets on science and creationism and the realities of NAS membership:

The [NAS *Science and Creationism*] booklet assures readers, “Whether God exists or not is a question about which science is neutral.” NAS President Bruce Alberts said: “There are many outstanding members of this academy who

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<sup>247</sup> Ker Than, *Intelligent Design: An Ambiguous Assault on Evolution*, LIVESCIENCE (Sep. 22, 2005, 8:42 PM), [http://www.livescience.com/health/050922\\_ID\\_main.html](http://www.livescience.com/health/050922_ID_main.html) (on file with author).

<sup>248</sup> PIERRE-PAUL GRASSÉ, *EVOLUTION OF LIVING ORGANISMS* (1977).

<sup>249</sup> THEODORE ROSZAK, *UNFINISHED ANIMAL: THE AQUARIAN FRONTIER AND THE EVOLUTION OF CONSCIOUSNESS* 101–02 (1975) (Emphasis removed).

<sup>250</sup> See Edward J. Larson & Larry Witham, *Scientists and Religion in America*, 281 SCI. AM. 88, 89–93 (Sept. 1999).

<sup>251</sup> Edward J. Larson & Larry Witham, *Leading scientists still reject God*, 394 NATURE 313, 313 (July 23, 1998).

<sup>252</sup> Larson & Witham, *supra* note 250, at 88; Larson & Witham, *supra* note 251, at 313.



are religious people who believe in evolution, many of them biologists.” Our survey suggests otherwise.<sup>253</sup>

Richard Dawkins reports that the Fellows of the Royal Society of London were polled on their religious beliefs. Of those that responded to the poll, only 3.3% “agreed strongly with the statement that a personal god exists” while 78.8% “strongly disagreed.”<sup>254</sup> Dawkins commented that, “[w]hat is remarkable is the polar opposition between the religiosity of the American public at large and the atheism of the intellectual elite.”<sup>255</sup>

The results of the poll cited by Dawkins were confirmed by a poll conducted by William Provine and Gregory Graffin, published in *The Scientist*. Provine and Graffin surveyed 149 leading evolutionary biologists and found that 78% were “pure naturalists,” and strikingly, “[o]nly two out of 149 described themselves as full theists.”<sup>256</sup> One study in the *Journal of Experimental Social Psychology* found that when evolutionary explanations for the origin of life were presented as strongly correct, this “may automatically decrease positive evaluations of religion.”<sup>257</sup> Perhaps it is unsurprising that philosopher Michael Ruse compares evolution to a “secular religion” that “exclude[s] miracles:”

[F]or many evolutionists, evolution has functioned as something with elements which are, let us say, akin to being a secular religion . . . And it seems to me very clear that at some very basic level, evolution as a scientific theory makes a commitment to a kind of naturalism, namely, that at some level one is going to exclude miracles and these sorts of things come what may.<sup>258</sup>

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<sup>253</sup> Larson & Witham, *supra* note 252, at 313.

<sup>254</sup> DAWKINS, *supra* note 133, at 101–02.

<sup>255</sup> *Id.* at 100.

<sup>256</sup> Gregory W. Graffin & William B. Provine, *Evolution, Religion and Free Will*, AM. SCI. (July–Aug. 2007), <http://www.americanscientist.org/issues/Id.3747,y.0,no.,content.true,page.2,css.print/issue.aspx>.

<sup>257</sup> Jesse Preston & Nicholas Epley, *Science and God: An automatic opposition between ultimate explanations*, 45 J. EXP. SOCIAL PSYCH. 238, 239 (2009),

<sup>258</sup> Michael Ruse, Speech at the 1993 Annual Meeting of the American Association for the Advancement of Science symposium: The New Antievolutionism (Feb. 13, 1993), <http://www.arn.org/docs/orpages/or151/mr93tran.htm>.

Indeed, leading evolutionary scientists claim that that evolutionary biology itself is grounded in the assumption that there are no divine influences. Richard Lewontin explains how science must adopt a methodology which assumes materialism and excludes a “Divine Foot,” regardless of the state of the evidence:

[W]e have a prior commitment, a commitment to materialism. It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that we are forced by our a priori adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations... that materialism is absolute, for we cannot allow a Divine Foot in the door.<sup>259</sup>

These examples are not meant to imply that all evolutionary scientists are atheists or that evolution mandates atheism. Nor does this article intend to pass judgment on whether these commentators’ views on the relationship between evolution and religion are correct. Nonetheless, many scientists and scholars of religion believe that evolution has anti-religious implications and have advocated evolution alongside anti-religious activism. As seen, this can carry into both their communication of evolution to the public and their treatment of scientists who doubt Darwinism. There undoubtedly exists a trickle-down effect into how the public perceives evolution.

It seems clear that numerous leading scientists have promoted evolution in a fashion that many theists would find offensive. The vast majority of evolutionary biologists are atheists, and some have explicitly used evolution as a means of advocating atheism. Many scientists have claimed that evolution implies that humanity’s existence is ultimately the result of a purposeless and accidental processes—a claim that would be perceived as inimical to the fundamental tenets of most theistic religions. Still others have described evolution as a force that undermines religion, and have called their fellow scientists to join a fight against religious beliefs. There are numerous instances within the writings of modern evolutionary scientists where evolution is advocated alongside anti-religious activism.

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<sup>259</sup> Richard C. Lewontin, *Billions and Billions of Demons*, N.Y. REV. BOOKS, Jan. 9, 1997, at 28 (emphasis added).

Evolutionists cannot “uncouple” their theory from a history of advocacy alongside atheistic and other anti-religious messages.

### C. Evolution Advocacy in Biology Textbooks and by Educators

In 1995, the National Association of Biology Teachers (NABT) adopted a statement claiming that evolution means that life developed via an “unsupervised, impersonal, unpredictable and natural process.”<sup>260</sup> The NABT removed this language, but William Corben observes in the journal *Science and Education* that the removal provided an empty remedy because “[t]he problem is that ‘unsupervised and impersonal’ describes what many evolutionary biologists believe about the universe and they take this as a granted part of science.”<sup>261</sup> (Indeed, Giberson and Yerxa point out that the NABT board was reluctant to discard the theologically charged language.<sup>262</sup>)

In the wake of the NABT’s removal of the “unsupervised” and “impersonal” language, over 70 evolutionist biologists, including leading scientists such as Richard Lewontin, John Lynch, and Nial Shanks, sent a letter of protest to the NABT arguing that “evolution indeed is, to the best of our knowledge, an impersonal and unsupervised process.”<sup>263</sup> Also attacking theistic evolutionists, the letter claimed that the notion that an intelligence is “supervising evolution in a way to perfectly mimic an unsupervised, impersonal process” is a viewpoint “that has been repeatedly invalidated on philosophical grounds ever since David Hume and well before Darwin.”<sup>264</sup> They harshly criticized the NABT’s removal of the “unsupervised” descriptor for evolution:

Science is based on a fundamental assumption: that the world can be explained by recurring only to natural, mechanistic forces. . . . [T]his is a philosophical position. . . .

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<sup>260</sup> See *NABT Unveils New Statement on Teaching Evolution*, 58 AM. BIOLOGY TEACHER 61–62 (Jan. 1996).

<sup>261</sup> William W. Cobern, *The Nature of science and the Role of Knowledge and Belief*, 9 SCI. & EDUC. 219 (2000).

<sup>262</sup> KARL W. GIBERSON & DONALD A YERXA, SPECIES OF ORIGINS: AMERICA’S SEARCH FOR A CREATION STORY 6–7 (2002).

<sup>263</sup> David Oakley, *Open Letter to NABT, NCSE, and AAAS*, METANEXUS (Sep. 22, 2015), <http://www.metanexus.net/essay/open-letter-nabt-ncse-and-aaas>.

<sup>264</sup> *Id.*

[T]he NABT leaves open the possibility that evolution is in fact supervised in a personal manner. This is a prospect that every evolutionary biologist should vigorously and positively deny.<sup>265</sup>

This episode reveals that many evolutionary biologists adamantly maintain that evolution is “unsupervised.” Any student who believes that some personal, divine being actively supervised or directly intervened in life’s history would clearly perceive the NABT’s original statement, that evolution is “unsupervised” and “impersonal,” as directly conflicting with their religious beliefs.

### **Textbook Descriptions of Evolution**

A large number of mainstream biology textbooks have used theologically charged language to describe evolution in terms that many would find offensive towards religion. During the *Kitzmiller v. Dover* trial, the plaintiffs’ leadoff expert witness who opposed the teaching of intelligent design was Brown University evolutionary biologist Kenneth Miller. Miller is also the author of prominent high school biology textbooks that heavily promote evolution, and five editions of his textbook, *Biology*, described evolution as a purposeless, undirected process: “[E]volution works without either plan or purpose . . . . Evolution is random and undirected.”<sup>266</sup> At trial, Miller admitted during cross-examination that his popular textbook’s description of evolution would “requir[e] a conclusion about meaning and purpose that I think is beyond the realm of science.”<sup>267</sup> Other editions of Miller’s textbook have used even harsher anti-religious language. Both the 1991 and 1994 editions of Miller & Levine’s *Biology: The Living Science*

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<sup>265</sup> *Id.* (emphasis added) (Another archived version of the same letter instructs academics to contact Massimo Pigliucci, a widely known writer on evolution who now runs an evolutionary ecology lab at State University of New York, Stony Brook, in order to add their signature to the letter; *See An Open Letter*, <http://www.asa3.org/ASA/education/origins/openletter.htm>).

<sup>266</sup> KENNETH R. MILLER & JOSEPH S. LEVINE, *BIOLOGY* 658 (1991), (2nd ed. 1993), (3rd ed. 1995), (4th ed. 1998), (5th ed. 2000), (emphasis in original). For a detailed discussion of Miller’s testimony on this topic, see Casey Luskin, *Ken Miller’s “Random and Undirected” Testimony*, *EVOLUTION NEWS* (Sep. 18, 2015), [http://www.evolutionnews.org/2006/07/ken\\_millers\\_random\\_and\\_undirec.html](http://www.evolutionnews.org/2006/07/ken_millers_random_and_undirec.html).

<sup>267</sup> Transcript of Testimony at 4, *Kitzmiller v. Dover School District* (2005) (No. 4:04-CV-02688).

left readers with a starkly anti-theistic passage on the implications of evolution:

Darwin knew that accepting his theory required believing in *philosophical materialism*, the conviction that matter is the stuff of all existence and that all mental and spiritual phenomena are its by-products. Darwinian evolution was not only purposeless but also heartless—a process in which the rigors of nature ruthlessly eliminate the unfit. Suddenly, humanity was reduced to just one more species in a world that cared nothing for us. The great human mind was no more than a mass of evolving neurons. Worst of all, there was no divine plan to guide us.<sup>268</sup>

Multiple other textbooks have promoted evolution while asserting that there is no design, divine activity, or plan to the history of life:

- The textbook *Invitation to Biology* states that,

The real difficulty in accepting Darwin's theory has always been that it seems to diminish our significance. . . . [B]iology asked us to accept the proposition that, like all other organisms, we too are the products of a random process that, as far as science can show, we are not created for any special purpose or as part of any universal design.<sup>269</sup>

- The Cambridge University Press textbook *Evolutionary Psychology* emphasizes that “In evolution, there is no omnipotent being choosing which organism should survive and which should be consigned to oblivion, and there is no ultimate goal that the selection process is trying to achieve (see Dawkins, 1986).”<sup>270</sup>

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<sup>268</sup> JOSEPH S. LEVINE & KENNETH R. MILLER, *BIOLOGY: DISCOVERING LIFE* 152 (1992); JOSEPH S. LEVINE & KENNETH R. MILLER, *BIOLOGY: DISCOVERING LIFE* 161 (2nd ed. 1994) (emphasis in original).

<sup>269</sup> HELENA CURTIS & N. SUE BARNES, *INVITATION TO BIOLOGY* 474 (3rd ed. 1981).

<sup>270</sup> LANCE WORKMAN & WILL READER, *EVOLUTIONARY PSYCHOLOGY* 30 (2004).

- Strickberger’s *Evolution* similarly explains that “the variability by which selection depends may be random, but adaptations are not; they arise because selection chooses and perfects only what is adaptive. In this scheme a god of design and purpose is not necessary.”<sup>271</sup> Another edition states, “To Darwinians, all biology has had an accidental origin in the sense that hereditary variables arose at first randomly without purposeful foresight.”<sup>272</sup>
- *Discovery Biology* explains that “Darwin’s ideas on evolution and natural selection revolutionized biology and had a profound impact on many other fields, including literature, economics, religion” and explains “biological evolution is not guided by a ‘designer’ in nature.”<sup>273</sup>
- E. O. Wilson’s textbook states, “No forethought or master planning is implied here, only two different life patterns, both of which confer a high survival value on their species.”<sup>274</sup>

Perhaps the most blatant example of philosophical materialism in textbooks alongside the advocacy of evolution is found in Douglas Futuyma’s widely-used college text *Evolutionary Biology*:

By coupling undirected, purposeless variation to the blind, uncaring process of natural selection, Darwin made theological or spiritual explanations of life superfluous. . . . Darwin’s theory of evolution, followed by Marx’s materialistic (even if inadequate or wrong) theory of history and society and Freud’s attribution of human behavior to influences over which we have little control, that provided a crucial plank to the platform of mechanism and

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<sup>271</sup> MONROE W. STRICKBERGER, *EVOLUTION* 70 (3rd ed. 2000).

<sup>272</sup> BRIAN K. HALL & BENEDIKT HALLGRIMSSON, *STRICKBERGER’S EVOLUTION: THE INTEGRATION OF GENES, ORGANISMS, AND POPULATIONS* 60 (4th ed. 2008).

<sup>273</sup> MICHAEL L. CAIN, HANS DAMMAN, ROBERT A. LUE & CAROL K. YOON, *DISCOVER BIOLOGY* 320, 331 (Andrew D. Sinauer ed., 2nd ed. 2002).

<sup>274</sup> EDWARD O. WILSON ET AL., *LIFE ON EARTH* 9 (1973).

materialism—in short, to much of science—that has since been the stage of most Western thought.<sup>275</sup>

Futuyma explains how Darwin removed purpose and design from biology, making such a theological foundation “completely superfluous”:

The entire tradition of philosophical explanation by the purpose of things, with its theological foundation, was made completely superfluous by Darwin’s theory of natural selection. The adaptation of organisms—long cited as the most conspicuous evidence of intelligent design in the universe—could now be explained by purely mechanistic causes. . . . The profound, and deeply unsettling, implication of this purely mechanical, material explanation for the existence and characteristics of diverse organisms is that *we need not invoke, nor can we find any evidence for, any design, goal, or purpose anywhere in the world, except for human behavior.*<sup>276</sup>

Many other textbooks describe human existence as haphazard or unplanned. To give a few examples:

- Raven & Johnson’s 2000 edition of their popular high school text, *Biology*, contains an interview with Stephen Jay Gould stating that “[h]umans represent just one tiny, largely fortuitous, and late-arising twig on the enormously arborescent bush of life.”<sup>277</sup>
- Guttman’s *Biology* teaches that all species—including our own—arose “just by chance,” which is dictated by the “cosmic dice.”<sup>278</sup>
- Haviland’s *Anthropology* affirms “The Nondirectedness of Evolution,” and contends that human origins “was made possible only as a consequence of historical accidents” and

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<sup>275</sup> DOUGLAS J. FUTUYMA, *EVOLUTIONARY BIOLOGY* 5 (3rd ed. 1998).

<sup>276</sup> *Id.* at 8 (emphasis in original).

<sup>277</sup> PETER H. RAVEN & GEORGE B. JOHNSON, *BIOLOGY* 15 (5th ed. 1999); PETER H. RAVEN & GEORGE B. JOHNSON, *BIOLOGY* 16 (6th ed. 2000) (quoting Stephen Jay Gould).

<sup>278</sup> BURTON S. GUTTMAN, *BIOLOGY* 37 (1999).

claims an “essentially random event—the collision [of earth] with a comet or asteroid—made possible our own existence.”<sup>279</sup>

- Nicholas Barton *et al.*'s textbook *Evolution* repeatedly emphasizes the “random” nature of Darwinian evolution, noting that since “natural selection is based on random death and extinction” it has been “widely felt to be an unacceptable mechanism.”<sup>280</sup>
- Campbell, Reece, and Mitchell's popular text *Biology: Concepts & Connections* attributes life to a series of chance events: “Chance has affected the evolutionary process in the generation of genetic diversity through mutation. Chance has also played a role at every major milestone in the history of life. Before life began, over 3.5 billion years ago, the chance union of certain small organic molecules ignited a chain of events that led to the first genes. Much later—about 65 million years ago—a chance collision between Earth and an asteroid may have caused mass extinctions. . . . One of the great wonders of our existence and of life itself is that it has all arisen through a combination of evolutionary processes and chance events.”<sup>281</sup>

Stephen Jay Gould's textbook, *A View of Life*, teaches that “Darwin's theory of natural selection has disturbed many people and exhilarated others by its insistence that the path of evolution and the harmony of nature is ‘purposeless,’” since “Darwin held a strong allegiance to philosophical materialism—the notion that matter is the ground of all existence and that ‘spirit’ and ‘mind’ are the products or inventions of a material brain. Darwin advocated a thoroughly naturalistic account of life, thus denying one of the deepest traditions of Western thought...”<sup>282</sup> The textbook further explains how “biology demonstrated that we were not

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<sup>279</sup> William A. Haviland, *Anthropology* 123–24 (10th ed. 2003).

<sup>280</sup> NICHOLAS H. BARTON, DEREK E. G. BRIGGS, JONATHAN A. EISEN, DAVID B. GOLDSTEIN, & NIPAM H. PATEL, *EVOLUTION* 20–21, 413–15, 419, 435, 437, 475 (2007).

<sup>281</sup> NEIL A. CAMPBELL, LAWRENCE G. MITCHELL, & JANE B. REECE, *BIOLOGY: CONCEPTS AND CONNECTIONS*, 390 (1994); NEIL A. CAMPBELL, LAWRENCE G. MITCHELL, & JANE B. REECE, *BIOLOGY: CONCEPTS AND CONNECTIONS* 396 (2nd ed. 1997).

<sup>282</sup> SALVADOR EDWARD LURIA ET AL, *A VIEW OF LIFE* 584 (1981).



created in the image of an all-powerful God but had evolved from monkeys by the same process that regulates the history of all organisms. . . . No man has contributed more to this sequential retreat from our cosmic arrogance than Darwin. In arguing that we are but one product of a natural process without purpose or inherent direction, Darwin forced us to seek meaning within ourselves, not in nature.”<sup>283</sup>

Strickberger’s textbook *Evolution* also gives an account of why evolution has historically “replaced” and “contradicted” faith:

Many felt that evolutionary randomness and uncertainty had replaced a deity having conscious, purposeful, human characteristics. The Darwinian view that evolution is a historical process and present-type organisms were not created spontaneously but formed in a succession of selective events that occurred in the past, contradicted the common religious view that there could be no design, biological or otherwise, without an intelligent designer.<sup>284</sup>

The textbook specifically takes direct aim at religion, stating that evolution and science have “eroded” religion, which continues to survive only because it provides “solace” and “comfort”:

Religion has been bolstered by paternalistic social systems in which individuals depend on the beneficences of those more powerful than they are, as well as the comforting idea that humanity was created in the image of a god to rule over the world and its creatures. Religion provided emotional solace . . . . Nevertheless, faith in religious dogma has been eroded by natural explanations of its mysteries . . . .<sup>285</sup>

Thus, according to various leading evolution-promoting biology textbooks of the past few decades, evolution is variously a “random,” “blind,” “uncaring,” “heartless,” “undirected,” “purposeless,” “chance” process that acts “without plan” or “any ‘goals’” and requires accepting “materialism” because we are “not created for any special purpose or as part of any universal design” and “a god of design and purpose is not

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<sup>283</sup> *Id.* at 586–87.

<sup>284</sup> STRICKBERGER, *supra* note 272.

<sup>285</sup> *Id.* at 70–71 (Jones & Bartlett, 3rd ed. 2000).

necessary.”<sup>286</sup> Many students would obviously find such views antithetical to their religious beliefs, and would perceive an anti-religious message on the part of evolution advocacy in textbooks.

#### D. Evolution Advocacy by Atheist Organizations

Atheist organizations have played a significant role in organizing political activism and spurring public support for evolution. The Freedom From Religion Foundation boasts that it “protests the teaching of creation in schools and aims to teach the public about atheism and free thought.”<sup>287</sup> The Richard Dawkins Foundation for Reason and Science has founded the “Teacher Institute for Evolutionary Science,” to help teachers to better promote evolution.<sup>288</sup> One European atheist organization supports “developing the foundations of a naturalistic world-view as well as a secular, evolutionary-humanistic ethics and politics and sustainably bringing them into social debates.”<sup>289</sup> The American Humanist Association sees its mission as “correct[ing] false understanding of science by the public,” which includes “efforts to promote the teaching of evolution.”<sup>290</sup> It is therefore unsurprising to find that atheists and atheist organizations have a long history of evolution advocacy in the public sphere—a history that causes the public to associate anti-religious advocacy with the advocacy of evolution.

In Georgia, *Selman v. Cobb County* plaintiff Jeffrey Selman participated in a “Rally for Reason” sponsored by the Atheist Law

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<sup>286</sup> KENNETH R. MILLER & JOSEPH LEVINE, *BIOLOGY 658* (4th ed. 1998); BURTON S. GUTTMAN, *BIOLOGY 36–37* (1999); STRICKBERGER, *supra* note 272; DOUGLAS J. FUTUYMA, *EVOLUTIONARY BIOLOGY 2*, (2nd ed. 1986); NEIL A. CAMPBELL, ET AL., *BIOLOGY 412–13* (Benjamin Cummings, 5th ed. 2006); KENNETH R. MILLER & JOSEPH LEVINE, *BIOLOGY 161*, (2nd ed. 1994); WILLIAM K. PURVES, ET AL., *LIFE: THE SCIENCE OF BIOLOGY 3* (6th ed. 2001); CURTIS & BARNES, *supra* note 270, at 475.

<sup>287</sup> Steven Benowitz, *Irreligious Researchers Differ In Their Views On Faith*, *THE SCI. MAG.* (Apr. 17, 1995), <http://www.the-scientist.com/?articles.view/articleNo/17360/title/Irreligious-Researchers-Differ-In-Their-Views-On-Faith/>.

<sup>288</sup> See Bertha Vazquez, *Sharing the Passion for Evolution Education*, *NAT’L CTR. FOR SCIENCE ASS’N* (Aug. 13, 2015), <http://ncse.com/blog/2015/08/sharing-passion-evolution-education-0016580>.

<sup>289</sup> ATHEIST HELP & RESOURCES, <http://richarddawkins.net> (on file with author).

<sup>290</sup> *Id.*

Center.<sup>291</sup> In relation to that case, the Georgia Humanist Society called for its members to act “In Defense of Humanism” and requested that they sign a petition to the Cobb County School Board to oppose an evolution disclaimer and write letters to members of the Georgia House Education Committee opposing an anti-evolution bill.<sup>292</sup>

The Internet has provided vast resources for atheists to collaborate in support of evolution. AtheistParents.org helped organize opposition to the teaching of intelligent design in New York.<sup>293</sup> Internet Infidels is “a non-profit educational organization dedicated to defending and promoting a naturalistic worldview on the Internet” where “naturalism entails the nonexistence of all supernatural beings, including the theistic God.”<sup>294</sup> Their popular website has been used extensively to organize activism regarding the teaching of evolution in public schools.<sup>295</sup> Such activism is regularly peppered with epithets against religion, including statements such as “THERE IS NO GOD . . . IT’S JUST SUPERSTITION,”<sup>296</sup> “fundamentalist christians are no different than the Taliban,” “i heart roman lions,”<sup>297</sup> Christians are “ignorant cretins,” and claims that legislation to challenge evolution would “produce brain dead christian zombies (or is that redundant?).”<sup>298</sup> Such Internet collaboration, comments, and activism would clearly inspire perceptions of a close association between evolution advocacy, the promotion of atheism, and the denigration of religion.

Eugenie Scott was the longtime executive director for the leading pro-evolution activist organization, the National Center for Science Education, and according to the journal *Nature*, she is “perhaps the nation’s

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<sup>291</sup> See *Atheists to March Into Capitol May 6 to Protest Government Denial of Free Speech and Equal Access to Open Forum*, YAHOO GROUPS, <https://groups.yahoo.com/neo/groups/alabamaatheists/conversations/messages/813> (last visited December 3, 2015).

<sup>292</sup> In Defense of Humanism, <http://geocities.com/gahumanists/defense.htm> (on file with author).

<sup>293</sup> ATHEIST PARENTS, <http://www.atheistparents.org> (last visited Dec. 4, 2015).

<sup>294</sup> THE SECULAR WEB, <http://www.infidels.org> (last visited Sept. 22, 2015).

<sup>295</sup> *Id.*

<sup>296</sup> Vietnam Vet-BRIGHT, ATHEIST PARENTS (May 10, 2005, 11:10 AM), <http://www.atheistparents.org/forum/viewtopic.php?t=6289> and <http://www.atheistparents.org/forum/viewtopic.php?t=5695>.

<sup>297</sup> Nathan, ATHEIST PARENTS (May 10, 2005, 11:46 AM), <http://www.atheistparents.org/forum/viewtopic.php?t=6289> and <http://www.atheistparents.org/forum/viewtopic.php?t=5695>.

<sup>298</sup> THE SECULAR WEB, *supra* note 295.

most high-profile Darwinist.”<sup>299</sup> But Scott is a “philosophical naturalist”<sup>300</sup> and a Notable Signer of the Humanist Manifesto III, which is published by the American Humanist Association.<sup>301</sup> The Manifesto aspires to create a world with “a progressive philosophy of life . . . without supernaturalism” and makes broad metaphysical claims that “[h]umans are . . . the result of unguided evolutionary change. Humanists recognize nature as self-existing.”<sup>302</sup> Scott describes herself as an “evolution evangelist,”<sup>303</sup> and is extremely influential in public advocacy for evolution.

Other NCSE officials have similar anti-religious affiliations. Barbara Forrest, a member of the NCSE Board of Directors,<sup>304</sup> served as an expert witness in the *Kitzmiller v. Dover* trial and is on the Board of Directors of the New Orleans Secular Humanist Association (NOSHA), which describes itself as “an affiliate of American Atheists, and [a] member of the Atheist Alliance International.”<sup>305</sup> NOSHA is also an affiliate of the Council for Secular Humanism, which it describes as “North America’s leading organization for non-religious people,” and is an associate member of the American Humanist Association,<sup>306</sup> which publishes the Humanist Manifesto III.<sup>307</sup> In 1996, this American Humanist Association named Richard Dawkins as its “Humanist of the Year.”<sup>308</sup> To underscore the anti-religious mindset of these organizations, in his acceptance speech for the award before the American Humanist Association, Dawkins stated that “faith is one of the world’s great evils, comparable to the smallpox virus but

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<sup>299</sup> Geoff Brumfiel, *Who Has Designs on your Students’ Minds?*, 434 NATURE 1065 (2005).

<sup>300</sup> *Id.* (“Being a philosophical materialist myself, I take some lumps for being so conciliatory.”).

<sup>301</sup> *Notable Signers*, AM. HUMANIST ASS’N, <http://www.americanhumanist.org/3/HMsigners.htm>, (last visited Sept. 22, 2015).

<sup>302</sup> *Humanism And Its Aspirations*, AM. HUMANIST ASS’N, <http://aha-files.s3.amazonaws.com/2/238/HumanismAndItsAspirations.pdf> (last visited Nov. 1, 2015).

<sup>303</sup> RONALD L. NUMBERS, *THE CREATIONISTS: FROM SCIENTIFIC CREATIONISM TO INTELLIGENT DESIGN* 380 (expanded ed. 2006).

<sup>304</sup> *NCSE’s Board of Directors*, NAT’L CTR. FOR SCI. EDUC., <http://ncse.com/about/board> (last visited Nov. 1, 2015).

<sup>305</sup> NEW ORLEANS SECULAR HUMANIST ASSOCIATION, <http://nosha.secularhumanism.net>.

<sup>306</sup> *Id.*

<sup>307</sup> *Humanism And Its Aspirations*, AM. HUMANIST ASS’N, <http://aha-files.s3.amazonaws.com/2/238/HumanismAndItsAspirations.pdf>.

<sup>308</sup> Richard Dawkins, *Is Science A Religion?*, HUMANIST (Jan./Feb. 1997), <http://thehumanist.com/humanist/articles/dawkins.html>.

harder to eradicate.”<sup>309</sup> Forrest herself believes, “Philosophical naturalism is . . . the only reasonable metaphysical conclusion.”<sup>310</sup>

An organized annual celebration of Darwin’s birthday dubbed “Darwin Day” promotes public awareness about evolution. Taner Edis believes that Darwin Day is a good opportunity to advocate for non-religious ideas because “promoting public acceptance of Darwin would also nudge people toward dropping their supernatural beliefs, even if they hang on for a while to vague liberal conceptions of divinity.”<sup>311</sup> Darwin Day is organized by a group called “Darwin Day Celebration,” which has an advisory board boasting noted humanists and atheists such as Daniel Dennett, Eugenie Scott, Michael Shermer (founder of *Skeptical Magazine*), Richard Dawkins, and E. O. Wilson.<sup>312</sup> Edis recounts the close linkage between Darwin Day and atheist organizations:

[I]n the United States, there is a recent movement to celebrate February 12, Darwin’s birthday, as “Darwin Day.” This event is supported largely by humanist, freethought, and atheist-oriented groups, using slogans of science and humanity. Naturally, the scientific community responds positively, treating it as a public outreach . . . . Occasionally, university science departments cosponsor larger public events put on for Darwin Day, alongside atheist and humanist organizations.<sup>313</sup>

The Darwin Day Celebration website lists events held on Darwin Day, revealing that vast support of evolution advocacy comes from dozens of atheistic or humanistic organizations.<sup>314</sup> Cambridge University paleontologist Simon Conway Morris observes that Darwin-Day celebrations “conveniently serve as a love-in, with much mutual self-congratulation, for atheism.”<sup>315</sup> When commenting on a Darwin Day

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<sup>309</sup> *Id.*

<sup>310</sup> *Id.*

<sup>311</sup> EDIS, *supra* note 72, at 92.

<sup>312</sup> *Notable Signers*, AM. HUMANIST ASS’N, <http://www.americanhumanist.org/3/HMsigners.htm>, (last visited Sept. 22, 2015, 9:46 PM).

<sup>313</sup> EDIS, *supra* note 312.

<sup>314</sup> *See* INT’L DARWIN DAY, <http://darwinday.org/>.

<sup>315</sup> Simon Conway Morris, *Darwin was right. Up to a point.*, U.K. Guardian, Feb. 12, 2009, <http://www.guardian.co.uk/global/2009/feb/12/simon-conway-morris-darwin>.

celebration, the director of Ithaca's Museum of the Earth stated that his hometown is "filled with a lot of what might be called secular humanists, who are often some of Darwin's biggest fans."<sup>316</sup> One such fan is a writer who goes by the name of "Agnostic Mom" and seeks to teach people how to "raise a healthy family without religion." She reports that Darwin Day is a "humanist holiday" for her family.<sup>317</sup>

To give some examples of what can occur at Darwin Day celebrations sponsored by universities, in 2007 the University of California at San Diego's Medical School booked a band, Dr. Stephen Baird & Opossums of Truth,<sup>318</sup> whose website is called "Scientific Gospel," and attacks religion while stating that "EVOLUTION IS THE WAY and RANDOMNESS ITS SOURCE."<sup>319</sup> One song played by the group entitled "Charlie Darwin" states that Darwin "showed there was no plan," and the song "Randomness is Good Enough for Me" sings of their preference for "Random evolution" over a "godly plan."<sup>320</sup> Another website devoted to celebrating Darwin Day observes that one celebration sings "carols" with harshly anti-religions language: "*Natural selection, No maker required; / The little life forms passed on traits they'd acquired. / Darwin showed us how animals, fungi and plants, / Arose from nature's laws —Not from God, nor from chance.*"<sup>321</sup>

Harvard University's "Humanist Chaplaincy" celebrates Darwin Day, stating,

The Darwin Day Celebration was founded on the premise that science, like music, is an international language that

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<sup>316</sup> Giselle Phelps, *Ithaca honors Darwin*, TIME WARNER CABLE NEWS (Feb. 9, 2007), [http://news10now.com/content/all\\_news/tompkinscortland\\_county/?ArID=94663&SecID=111](http://news10now.com/content/all_news/tompkinscortland_county/?ArID=94663&SecID=111)(on file with author).

<sup>317</sup> Noell Hyman, *Agnostic Mom: How to Have a Week-Long Darwin Celebration with Your Children*, AM. HUMANIST ASS'N, <http://americanhumanist.org/hnn/archives/?id=285&article=5>.

<sup>318</sup> *Darwin, Art, & Genealogy by Dr. Baird in 2007*, SCI. GOSPEL PRODS. (Jan. 30, 2007), [http://www.scientificgospel.com/cgi-bin/drbaired/redBlogReader.pl?action=readArticle&article=article\\_57&section=press](http://www.scientificgospel.com/cgi-bin/drbaired/redBlogReader.pl?action=readArticle&article=article_57&section=press).

<sup>319</sup> SCIENTIFIC GOSPEL, <http://www.scientificgospel.com/cgi-bin/showpage.pl?page=home> (emphasis in original).

<sup>320</sup> Dr. Stephen Baird and the Opossums of Truth, SCI. GOSPEL PRODS., <http://www.scientificgospel.com/WaterOnMarsLyrics.pdf>.

<sup>321</sup> *Id.*

speaks to all people in very similar ways. Charles Darwin is a worthy symbol on which to focus, in order to build a Global Celebration of Science and Humanity that is intended to promote solidarity among all people of the earth.<sup>322</sup>

Campus atheist groups also commonly oppose religion alongside evolution advocacy. For example, the Campus Atheists, Skeptics & Humanists (CASH) at the University of Minnesota praises a letter by a CASH member stating that “Evolution by natural selection is a natural force, based on the simple fact that those things that are able to survive and reproduce tend to do so. . . . It is a scientific fact.”<sup>323</sup> Individuals for Freethought (IF) at Kansas State University a “non-theistic” group which supports “Evolution education, genial assassinations of Creationism.”<sup>324</sup> Their links page directs people to groups such as Secular Students Alliance (SSC) and Campus Freethought (CFA).<sup>325</sup> The TalkOrigins Archive is a widely-used pro-evolution website that is recommended by various textbooks, universities, and major scientific organizations as a resource for learning about evolution.<sup>326</sup> Yet the website has various pages that specifically oppose certain common forms of Christianity or Judeo-Christian theism.<sup>327</sup> One article argues that that Judeo-Christian God causes “the greatest form of evil possible” and is guilty of “petty cruelty.”<sup>328</sup>

These represent merely a sample of a nearly endless supply of examples of evolution activism conducted by atheism-oriented

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<sup>322</sup> THE HUMANIST CHAPLAINCY AT HARVARD, <http://www.harvardhumanist.org/2008/01/18/a-toast-to-darwin-darwin-day-celebration-feb-12/> (on file with author).

<sup>323</sup> CAMPUS ATHEISTS, SKEPTICS, AND HUMANISTS, [http://cashumn.org/index.php?option=com\\_content&task=view&id=45&Itemid=1](http://cashumn.org/index.php?option=com_content&task=view&id=45&Itemid=1).

<sup>324</sup> KANSAS STATE UNIV. INDIVIDUALS FOR FREETHOUGHT, <http://www.k-state.edu/freethought/>.

<sup>325</sup> *Links*, KANSAS STATE UNIV. INDIVIDUALS FOR FREETHOUGHT, <http://www.k-state.edu/freethought/links.htm>.

<sup>326</sup> The Talk Origins Archive, *Awards, Honors, and Favorable Notices for The Talk*, THE TALK ORIGINS ARCHIVE, (Oct. 9, 2006), <http://www.talkorigins.org/faqs/awards/>.

<sup>327</sup> Mark Isaac, *Claim CH100*, THE TALK ORIGINS ARCHIVE (Aug. 10, 2003), <http://www.talkorigins.org/indexcc/CH/CH100.html>; Mark Isaac, *Claim CH130*, THE TALK ORIGINS ARCHIVE (Aug. 10, 2003), <http://www.talkorigins.org/indexcc/CH/CH130.html>; Mark Isaac, *Claim CH190*, THE TALK ORIGINS ARCHIVE (Aug. 10, 2003), <http://www.talkorigins.org/indexcc/CH/CH190.html>; Mark Isaac, *Claim CH110*, THE TALK ORIGINS ARCHIVE (Aug. 10, 2003), <http://www.talkorigins.org/indexcc/CH/CH110.html>.

<sup>328</sup> Mark Isaac, *Claim CH030*, THE TALK ORIGINS ARCHIVE (Aug. 10, 2003), <http://www.talkorigins.org/indexcc/CH/CH030.html>.

organizations. There is no question that atheist or humanist organizations use Darwin to promote nonbelief and to oppose religion. Such groups also support activism for evolution education, often accompanied by the outright denigration of religion. An objective observer knowledgeable about these events would clearly perceive a close association between those who oppose religion and the advocacy of evolution.

### **E. Evolution Advocacy in the Popular Media**

Many media sources have advocated for evolution while portraying religion in a negative light. But perhaps no other media force has promoted an anti-religious message in society alongside evolution advocacy more successfully than the famous play *Inherit the Wind*. A dramatization of the Scopes trial that was turned into a movie, *Inherit the Wind* is regularly studied by high school and college students.<sup>329</sup> Eugenie Scott recounts that the play positively portrays its evolutionist protagonist as a “freethinker,” while “Antievolutionists and Fundamentalists in general were portrayed as foolish, unthinking, religious zealots,” with the leading anti-evolutionary minister depicted as a “bombastic . . . religious bigot.”<sup>330</sup> She admits the anti-religious message of the film has “contributed to the negative public image of Fundamentalists.”<sup>331</sup> Evolution historian Edward J. Larson concurs, writing that various theatrical retellings of the Scopes trial have promoted the view that “[t]he light of reason had banished religious obscurantism.”<sup>332</sup>

One of the main spokespersons for science in the late 20th century, Carl Sagan, was a prolific expositor of science to the public. One of his most famous statements is from his book *Cosmos* and the eponymous 1980 television series watched by millions where Sagan promotes evolution and proclaims, “the Cosmos is all that there is or ever was or ever will be.”<sup>333</sup>

The exact same statement—“the Cosmos is all that there is or ever was or ever will be”—was repeated in the opening scene of the 2014 reboot

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<sup>329</sup> EUGENIE SCOTT, *EVOLUTION VS. CREATIONISM: AN INTRODUCTION* 97–98 (2004).

<sup>330</sup> *Id.* at 96–97.

<sup>331</sup> *Id.* at 96.

<sup>332</sup> EDWARD J. LARSON, *SUMMER FOR THE GODS: THE SCOPES TRIAL AND AMERICA’S CONTINUING DEBATE OVER SCIENCE AND RELIGION* 246 (1997).

<sup>333</sup> Robin Guest, *Cosmos*, YOUTUBE, (May 29, 2013), <https://www.youtube.com/watch?v=uLulcTKBspl>.



of *Cosmos* which aired on Fox.<sup>334</sup> Astrophysicist Neil deGrasse Tyson, the series's host, strongly promotes evolution, explaining that life is the result of "unguided" and "mindless evolution." Knowing Tyson's personal views, this is unsurprising. Bill Moyers described Tyson as the "unabashed defender of knowledge over superstition and clearly the rightful heir to Carl Sagan's curiosity and charisma." When asked by Moyers whether faith and reason are compatible, Tyson answered, "I don't think they're reconcilable," and later stated, "God is an ever-receding pocket of scientific ignorance."<sup>335</sup> A Tyson fansite condenses his worldview into the following mission—taken from an apparent Tyson quote: "The more I learn about the universe, the less convinced I am that there's any sort of benevolent force that has anything to do with it, at all."<sup>336</sup>

Other creators of the 2014 edition of *Cosmos* expressed their desire to use the series to attack what they view as religion. In an interview with the *Los Angeles Times* titled "Seth MacFarlane Hopes 'Cosmos' Counteracts 'Junk Science,' Creationism," executive producer MacFarlane acknowledged the series' intent to oppose "a resurgence of creationism and intelligent design quote-unquote theory."<sup>337</sup> Elsewhere MacFarlane has stated, "There have to be people who are vocal about the advancement of knowledge over faith."<sup>338</sup>

Another executive producer of *Cosmos* is former *Star Trek* writer Brannon Braga. At an atheist conference in 2006, Braga described his involvement in *Star Trek* as creating "atheist mythology," and his "conviction that religion sucks, isn't science great, and how the hell can we get the other 95% of the population to come to their senses?" He said *Star Trek* provides a "template for a world" where "religion has been

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<sup>334</sup> *Cosmos: A Spacetime Odyssey: Standing Up In The Milky Way*, (21st Century Fox broadcast March 9, 2014), [http://www.disclose.tv/action/viewvideo/168516/Cosmos\\_A\\_Spacetime\\_Odyssey\\_Episode\\_1\\_Standing\\_up\\_in\\_the\\_Milky\\_Way/](http://www.disclose.tv/action/viewvideo/168516/Cosmos_A_Spacetime_Odyssey_Episode_1_Standing_up_in_the_Milky_Way/).

<sup>335</sup> Bill Moyers, *Neil deGrasse Tyson Tells Bill Moyers Why Faith and Reason Are Irreconcilable*, ALTERNET (March 11, 2014), <http://www.alternet.org/news-amp-politics/neil-degrasse-tysons-new-show-cosmos-and-why-faith-and-reason-are-irreconcilable>.

<sup>336</sup> Tysonism, *Mission*, FACEBOOK, <https://m.facebook.com/Tysonism?v=info&expand=1> (last visited Oct. 26, 2015).

<sup>337</sup> Meredith Blake, *Seth MacFarlane Hopes 'Cosmos' Counteract 'Junk Science,' Creationism*, L.A. TIMES, March 7, 2014, <http://www.darwinday.org/englishL/home/2003.html>.

<sup>338</sup> Stacey Grenrock Woods, *Hungover with Seth MacFarlane*, ESQUIRE (Aug. 18, 2009, 5:00 AM), <http://www.esquire.com/features/tht-screen/seth-macfarlane-interview-0909>.

vanquished, and reason drives our hearts”—a future he “longs for.”<sup>339</sup> *Cosmos* is apparently an attempt to achieve these goals, as Braga stated the series aims to combat “dark forces of irrational thinking,” since “religion doesn’t own awe and mystery. Science does it better.”<sup>340</sup> It comes as no surprise, therefore, that the 2014 *Cosmos* series repeatedly attacked religion while advocating for evolution.<sup>341</sup>

Another one of the media’s most expensive forays into promoting evolution was the 2001 multi-million dollar, seven-part series, PBS’s *Evolution*. The series itself declares that, “For all of us, the future of religion, science and science education are at stake in the creation-evolution debate.”<sup>342</sup> Daniel Dennett’s book *Darwin’s Dangerous Idea* provides the title for the first episode of the series, and says that “natural selection feeds on randomness” because “there’s no predictability about what particular accidents are going to be exploited in this process.”<sup>343</sup> One critical review of the PBS’s *Evolution* series documents numerous the anti-religious insinuations of the series:

[I]f this series is any indication, evolution has a *lot* to say about “whether God did or did not have anything to do with it.” In Episode One, Stephen Jay Gould pooh-poohed the idea that “God had several independent lineages and they were all moving in certain pre-ordained directions which pleased His sense of how a uniform and harmonious world ought to be put together.” In the same episode, Kenneth Miller argued that the vertebrate eye was not designed by God, but produced by evolution. And in Episode Five, Geoffrey Miller assured us that “it wasn’t God, it was our

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<sup>339</sup> *Star trek as atheist mythology – Brannon Braga*, YOUTUBE, (March 13, 2012), <https://www.youtube.com/watch?v=iJm6vCs6aBA>.

<sup>340</sup> Marshall Honorof, *Rebooting ‘Cosmos’: Neil DeGrasse Tyson Explains Why Iconic TV Series Returns in 2014*, YAHOO.COM (Jan. 14, 2014), <http://news.yahoo.com/rebooting-39-cosmos-39-neil-degrasse-tyson-explains-131522449.html>.

<sup>341</sup> See Casey Luskin, *Cosmos: Materialism for the Masses*, 37 CHRISTIAN RES. J. at 33 (2014).

<sup>342</sup> *Getting the Facts Straight: A Viewer’s Guide to PBS’s Evolution 11* (2001), <http://www.reviewevolution.com/viewersGuide/viewersGuide.pdf>.

<sup>343</sup> *Id.*

ancestors” that produced the modern human brain by “choosing their sexual partners.”<sup>344</sup>

Nonetheless, PBS’s *Evolution* series did try to mask anti-religious implications of evolution. Science writer Chris Mooney explains in *Slate Magazine* that “[PBS] *Evolution*’s attempt to divorce Darwinian science from atheism, though well intentioned, is finally naive.”<sup>345</sup> According to Mooney, the natural implications of evolution are unavoidably anti-religious:

Darwinism presents an explanation for life’s origins that lacks any supernatural element and emphasizes a cruel and violent process of natural selection that is tough to square with the notion of a benevolent God. Because of this, many students who study evolution will find themselves questioning the religions they have grown up with.<sup>346</sup>

Mooney concludes, “The series strives to present a charming picture of a scientific theory that leaves religion relatively unchallenged, but Darwin’s life itself suggests otherwise.”<sup>347</sup>

In *The God Delusion*, Richard Dawkins recounts how Darwinism helped convert the popular science-fiction author Douglas Adams, author of *The Hitchhiker’s Guide to the Galaxy*, to “radical atheism,” stating that Adams “insisted on the ‘radical’ in case anybody should mistake him for an agnostic.”<sup>348</sup> Adams concurs that Dawkins’ work was instrumental in his own journey to unbelief:

I stumbled upon evolutionary biology, particularly in the form of Richard Dawkins’s books . . . and suddenly . . . it all fell into place. It was a concept of such stunning simplicity, but it gave rise, naturally, to all of the infinite and baffling complexity of life. The awe it inspired in me made the awe that people talk about in respect of religious experience

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<sup>344</sup> *Id.*

<sup>345</sup> Mooney, *supra* note 98.

<sup>346</sup> *Id.*

<sup>347</sup> *Id.*

<sup>348</sup> DAWKINS, *supra* note 133, at 116.

seem, frankly, silly beside it. I'd take the awe of understanding over the awe of ignorance any day.<sup>349</sup>

Adams follows in the footsteps of an earlier champion of science-fiction, H.G. Wells, who contended that “Darwin and Huxley . . . will ultimately dominate the priestly and orthodox mind.”<sup>350</sup> Norman and Jeanne Mackenzie’s biography of Wells recounts that he was “impressed and influenced” by Darwin, leading him to experience a conflict of religious faith that “was characteristic of the time, when the new science had dealt telling blows at revealed religion but offered no spiritually rewarding alternative to it.”<sup>351</sup> Soon thereafter, Wells turned away from organized religion.<sup>352</sup>

Dan Barker, author of *Losing Faith in Faith: From Preacher to Atheist* and co-president of the Freedom from Religion Foundation, regularly promotes evolution while opposing religion, and has spoken publicly in many venues, including *Good Morning America* and *Oprah*.<sup>353</sup> He believes, “Life is the result of the mindless ‘design’ of natural selection” and argues that under natural selection, “[h]umans, for example, did not have to evolve—any one of billions of viable possibilities could have adapted, making it quite likely that something would survive the ruthlessness of natural selection.”<sup>354</sup>

Popular “new atheist” author Christopher Hitchens likewise promotes evolution alongside arguments for atheism and harsh criticisms of religion. Hitchens’ book *God is Not Great: How Religion Poisons Everything* asserts that the “most devastating” criticism of religion is that “[r]eligion is man-made.”<sup>355</sup> Hitchens strenuously argues for evolution and against alternatives to evolution. He calls intelligent design “tripe” and “a huge menacing lurch forward by the forces of barbarism.”<sup>356</sup> While

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<sup>349</sup> *Id.* at 116–17.

<sup>350</sup> H.G. WELLS, EXPERIMENT IN AUTOBIOGRAPHY: DISCOVERIES AND CONCLUSIONS OF A VERY ORDINARY BRAIN (SINCE 1866), 162–63 (1934).

<sup>351</sup> NORMAN MACKENZIE & JEANNE MACKENZIE, H.G. WELLS: A BIOGRAPHY 42 (1973).

<sup>352</sup> *Id.* at 43.

<sup>353</sup> DAN BARKER, LOSING FAITH IN FAITH: FROM PREACHER TO ATHEIST 10–11 (2006).

<sup>354</sup> *Id.* at 123, 124.

<sup>355</sup> CHRISTOPHER HITCHENS, GOD IS NOT GREAT: HOW RELIGION POISONS EVERYTHING 10 (Twelve 2009) (2007).

<sup>356</sup> *Id.* at 282.

supporting “[t]he evolution of humans,” he asserts that there is “[n]o divine plan” and that “[e]verything works without that assumption.”<sup>357</sup> Hitchens has harsh words for religion as he praises Darwinian science:

[I]n our hands and within our view is a universe of discovery and clarification, which is a pleasure to study in itself, gives the average person insights that not even Darwin or Einstein possessed . . . . Yet millions of people in all societies still prefer the myths of the cave and the tribe and the blood sacrifice.<sup>358</sup>

As for the future of humanity, Hitchens asserts that “[i]f our presence here, in our present form, is indeed random and contingent, then at least we can conspicuously look forward to the further evolution of our poor brains.”<sup>359</sup>

The notoriously anti-Christian band Bad Religion was co-founded in 1980 by Gregory Graffin, a Cornell-trained evolutionary biologist who studied under William Provine.<sup>360</sup> In 2008, Graffin received the “Outstanding Lifetime Achievement Award in Cultural Humanism” from the Humanist Chaplaincy at Harvard.<sup>361</sup> The website Secular Student Alliance announces this award while praising Graffin for his work as a musician, evolutionary biologist, and non-believer:

Harvard University’s prominent community of atheists and agnostics is poised to honor a rock star and scientist whom they argue is an ideal role model for the nation’s millions of non-religious youth . . . . Dr. Greg Graffin, frontman of the influential punk rock band Bad Religion. Graffin, whose ‘day job’ since 1980 has been recording and extensive worldwide touring with a band boasting such hits as “How

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<sup>357</sup> *Id.* at 95.

<sup>358</sup> *Id.* at 282.

<sup>359</sup> *Id.* at 94.

<sup>360</sup> See PRESTON JONES, IS BELIEF IN GOD GOOD, BAD OR IRRELEVANT?: A PROFESSOR AND A PUNK ROCKER DISCUSS SCIENCE, RELIGION, NATURALISM & CHRISTIANITY (2006).

<sup>361</sup> Tom Clark, *Connections to Atheism and Humanism*, NATURALISM, <http://www.naturalism.org/philosophy/worldview-naturalism-in-depth/worldview-naturalism-a-status-report/connections-to-atheism-and-humanism> (last visited Feb. 4, 2016).

Could Hell be Any Worse” and “American Jesus,” earned his Ph.D in Zoology at Cornell and is a member of the UCLA’s Faculty in Biology, teaching Life Sciences courses covering Darwin and natural selection.<sup>362</sup>

For over 25 years, Bad Religion has promoted the view that religion (Christianity in particular) is not only wrong, but also “bad” and harmful to society, while simultaneously promoting the view that humans are nothing more than the products of a blind evolutionary process. As the theme song for Bad Religion states: “See my body, it’s nothing to get hung about. I’m nobody except genetic runaround. Spiritual era’s gone, it ain’t comin’ back.”<sup>363</sup>

In a book discussing how his music interfaces with his scientific and philosophical beliefs, Graffin explains:

I am simply not interested in learning how modern knowledge can be reconciled with outdated theology. . . . God is an answer for people who have no idea how the physical world works. . . . Traditional religion offers nothing satisfying now because science explains such things better.<sup>364</sup>

Graffin explains his view of the religious implications of evolution:

Attempting to show that the universe is elaborately designed doesn’t discount evolution and it certainly doesn’t suggest to me that there is a God. It just means that some very elaborate things can materialize given enough time. . . . From what I do know of the big bang theory, the earth and everyone on it could have started on their own, without any outside help due to evolution and how nature works. So where does God come in on that?<sup>365</sup>

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<sup>362</sup> Old August, *Atheist Rocker / Scientist to be Honored at Harvard*, SECULAR STUDENT ALL. (Mar. 13, 2008), <http://www.secularstudents.org/node/2013>.

<sup>363</sup> *Bad Religion Lyrics*, AZ LYRICS, <http://www.azlyrics.com/lyrics/badreligion/badreligionthemesong.html> (last visited Nov. 3, 2015).

<sup>364</sup> *Quoted in* JONES, *supra* note 361, at 25, 33, 38.

<sup>365</sup> *Id.* at 57, 128.

He argues that evolution challenges theism because it invokes a process involving purposeless suffering.<sup>366</sup> One of Graffin's Bad Religion albums has a song echoing this sentiment:

*Tell me, where is the love? / In a careless creation / Where there's no "above" / There's no justice / Just a cause and a cure / And a bounty of suffering / It seems we all endure / And what I'm frightened of / Is that they call it "God's love"*<sup>367</sup>

In case there is any doubt that Graffin's lyrics have a real-world impact upon public beliefs about evolution and religion, consider these excerpts from a fan letter written to Graffin by a teenage girl who follows Bad Religion:

I just wanted to write you a letter explaining to you how much your music has really helped me. . . . I also looked at evolution. It's impossible to look at monkeys and not see the connection from one species to another. My junior year my mom said something to me about biology and evolution, so I told her I believed in evolution. . . . My faith is in science and nature and coincidence. . . . Right now my mission is to collect all of your CDs so I can get even more of what I crave—something to connect with.<sup>368</sup>

Bad Religion represents a compelling example of the close association between the advocacy of evolution and the denigration of religion within the mind of popular American culture.

Another pop-culture phenomenon that illustrates organized efforts to use media to attack religion using evolution is the "Blasphemy Challenge," a campaign "challenging people to forsake God by sending a video to them, showing how creative they can be while denying God's existence." Donald Shedd, biology professor at Randolph College in Lynchburg, Virginia, was quoted saying that he is "not at all" surprised this is happening because "[a]n increasing number of people are prepared to

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<sup>366</sup> *Id.* at 74.

<sup>367</sup> Greg Graffin, *God's Love*, on BAD RELIGION, THE EMPIRE STRIKES FIRST (Epitaph 2004), *quoted in* JONES, *supra* note 361, at 74.

<sup>368</sup> *Id.* at 119–23.

verbalize” their rejection of God. One news article reported that “Shedd is a follower of Richard Dawkins, who he calls the ‘Pope’ of atheism,” and states that “[t]he blasphemy challenge’ says it’s largely based on Dawkins’ teachings.”<sup>369</sup>

To give a taste of the mindset behind some involved with the “Blasphemy Challenge,” consider the defense given by HIV researcher Abigail Smith, a prominent advocate for evolution on the Internet:

I don’t care if you paint a picture of the Virgin Mary and shit on it. I don’t care if you take your dogs to your old church and let them shit all over their parking lot (as long as you pick it up). I dont care if you act like a stereotypical ‘teenage atheist’ dress in all black and write songs about fucking Jesus in the ass. I dont care if you jump out of an airplane with ‘GOD IS DEAD’ written on your parachute. I dont care if you plant a garden of tulips in the shape of a pentagram. I dont care if you put an Evolve Fish on your car and wear an Atheist Atom on your jacket lapel. Im not going to call someone an idiot for expressing their views and frustrations in a way thats appropriate for them, especially when they are doing nothing wrong.<sup>370</sup>

It seems unsurprising that one undergraduate student summarized the Blasphemy Challenge in a news article as follows: “Anti-Darwinists claim that you’re killing God and pro-Darwinists claim he’s already dead.”<sup>371</sup>

Perhaps the most widely known pop-culture phenomena that has mocked and opposed religion while promoting evolution is the “Flying Spaghetti Monster” (FSM), which, according to the *London Guardian*, “Flying Spaghetti Monsterism” is “a satirical ‘religion’ created by Bobby

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<sup>369</sup> *Blasphemy Challenge Targets Youngsters*, WSLs NEWSCHANNEL 10, (Jan. 5, 2007) [http://wsls.com/servlet/Satellite?pagename=WSLs%2FMGArticle%2FSLS\\_BasicArticle&c=MGArticle&cid=1149192509040&path=!news!localnews](http://wsls.com/servlet/Satellite?pagename=WSLs%2FMGArticle%2FSLS_BasicArticle&c=MGArticle&cid=1149192509040&path=!news!localnews) (on file with author).

<sup>370</sup> ERV, *Dawkins was only half right.*, ERV (MAR. 2, 2007), <http://endogenousretrovirus.blogspot.com/2007/03/dawkins-was-only-half-right.html>.

<sup>371</sup> Liz Kemmerer, *The evolution of intelligent design*, FREE REPUBLIC (Apr. 27, 2006), <http://freerepublic.com/focus/f-news/1623767/posts>.



Henderson, a physics graduate of Oregon State University.”<sup>372</sup> The website reports that FSM began when Henderson “wrote to the Kansas Board of Education in June 2005, alerting them to the many people who believe that a Flying Spaghetti Monster created the universe, and demanding that science lessons be split three-ways: ‘One third time for intelligent design, one third time for Flying Spaghetti Monsterism, and one third time for logical conjecture based on overwhelming observable evidence.’” The FAQ then explains that “Henderson’s point is that the concept of a Flying Spaghetti Monster is every bit as rational a concept as intelligent design.”

FSMism is becoming part of mainstream pop-culture. A January, 2007 article in the *Toronto Star* covered FSMism and reported that the website gets over 30,000 unique visitors per day, with about 400,000 hits per day when including “links to other sites.”<sup>373</sup> In 2006, Henderson published *The Gospel of the Flying Spaghetti Monster*, sold on the FSM website,<sup>374</sup> mocking the New Testament of Christianity as well as the names of holy books of many religions:

[T]hat’s why we [FSM] need a book. (Doesn’t every religion have a book?) The Jews have the Bible (The Old Testicle), the Christians have ditto (The New Testicle), and Muslims have the Q-tip or whatever, the Jains have Fun with Dick and Jain, the Suffis have Sufis Up!, the Buddhists have the Bananapada, and the Hindus have the Ten Little Indians . . . .<sup>375</sup>

In a news article, NCSE deputy director Glenn Branch defends FSMism, saying it is merely “enjoying light hearted fun at the opposition’s expense” that is “probably healthy.”<sup>376</sup> But if the “opposition” of the NCSE includes those who are mocked by FSMist materials, then it follows that opposition includes members of nearly every major world religion.

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<sup>372</sup> Donald Macleod, *Q&A: Intelligent Design*, LONDON GUARDIAN (June 1, 2007), <http://education.guardian.co.uk/schools/story/0,,1582042,00.html>.

<sup>373</sup> Leslie Scrivener, *In Praise of an Alternate Creation Theory: From the Department of one Scientific Theory is a Good as Another, Comes the Flying Spaghetti Monster*, TORONTO STAR (Jan. 7, 2007), <http://www.thestar.com/sciencetech/article/168629>.

<sup>374</sup> CHURCH OF THE FLYING SPAGHETTI MONSTER, <http://www.venganza.org/worship/fsm-book/> (last visited Oct. 24, 2015).

<sup>375</sup> Bobby Henderson, *THE GOSPEL OF THE FLYING SPAGHETTI MONSTER* xiii (2006).

<sup>376</sup> Scrivener, *supra* note 374.

Branch's comments supporting FSMism were endorsed by a writer with People for the American Way.<sup>377</sup>

Others have followed Henderson's example in writing books endorsing FSM's promotion of evolution and denigration of religion. Jonathan C. Smith, professor of psychology at Roosevelt University, wrote a book entitled *God Speaks! The Flying Spaghetti Monster in His Own Words*. He promotes evolution through FSM while mocking Judeo-Christian beliefs:

One day I decided to take the first six words of the Biblical creation story and, just for fun, look for anagrams. . . . Astonishingly, the very first anagram that emerged for "In the beginning was the word" was: "Then God threw in a big sin." Confused and hoping for further edification, I searched for more anagrams, and found the equally disconcerting recombination: "Intertwined benign hogwash." Now desperate, I tried the final words "and the word was God." One emerged: "Warthogs now added."<sup>378</sup>

Ignoring that Smith cites a verse from the Gospel of John in the New Testament, not the "Biblical creation story," clearly both Smith's and Henderson's FSM books contain language mocking and denigrating both Western and Eastern religions.

The FSM website is no different. It promotes evolution while denigrating Christianity and other traditional forms of theism. The site sells cards "[f]or the Holiday season" which portray a dead Christian fish symbol on one side, and on the other side show Michaelangelo's *Creation of Adam* painting, where God is replaced by the Flying Spaghetti Monster.<sup>379</sup> This image has been repeatedly used on websites, including the blog of *Wired*

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<sup>377</sup> *Creationists Ramp up War on Satire*, RIGHT WING WATCH (Jan.17, 2007), [http://rightwingwatch.org/2007/01/creationists\\_ra.html](http://rightwingwatch.org/2007/01/creationists_ra.html).

<sup>378</sup> JONATHAN C. SMITH, *GOD SPEAKS! THE FLYING SPAGHETTI MONSTER IN HIS OWN WORDS* 7–8 (Janice M. Frum ed., 2006).

<sup>379</sup> CHURCH OF THE FLYING SPAGHETTI MONSTER GREETING CARDS, <http://www.venganza.org/greetcards.htm> (Dec. 24, 2006).

Magazine.<sup>380</sup> Another graphic promoted on the site shows a nativity scene where an baby Jesus is replaced by the Flying Spaghetti Monster.<sup>381</sup>

Promotion of the Flying Spaghetti Monster is sometimes found alongside the denigration of religion in the media. For example in an op-ed in the *Hattiesburg American*, Bo Alawine explains that, “[e]volutionary theory is the foundation for all biological sciences and meets the tenets of the scientific method[,]” and also explains why that FSM is his “favorite” religion:

There are numerous mono-theistic religions, such as Judaism, Christianity, Islam and, my personal favorite, Flying Spaghetti Monsterism (whose followers are called “Pastafarians”), all of whom have their own cosmogony.<sup>382</sup>

Wikipedia reported that even Richard Dawkins commonly discusses the Flying Spaghetti Monster in media appearances,<sup>383</sup> but Dawkins is not the only scientist to embrace the Flying Spaghetti Monster. The FSM website boasts many “Academic Endorsements” of the site, many which are derogatory towards religion, including Steve Lawrence, PhD who writes:

He has created the fundamental subatomic particles that form all matter in this universe in His own quivering image! You, me, the Earth, the stars . . . everything in the universe . . . are all built of trillions of tiny jigging noodles, microscopic copies of our Divine Saucy Maker. Truly He is everywhere and in all things!<sup>384</sup>

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<sup>380</sup> See Brandon Keim, *Evolution Beats Intelligent Design in Florida*, WIRED BLOGS (Dec. 27, 2007),

<sup>381</sup> FSM Nativity, CHURCH OF THE FLYING SPAGHETTI MONSTER, <http://www.venganza.org/2006/12/12/fsm-nativity.htm> (Nov. 25, 2007).

<sup>382</sup> Bo Alawine, *Intelligent Design Equals Creationism*, HATTIESBURG AM. (Dec. 19, 2006), <http://www.hattiesburgamerican.com/apps/pbcs.dll/article?AID=/20061219/OPINION01/612190312>.

<sup>383</sup> Cited in The Cerebral Assassin, *Can someone explain FSM to me?*, YAHOO ANSWERS, <https://answers.yahoo.com/question/index?qid=20070130150325AAjUJ3y> (“The Flying Spaghetti Monster has been used by Richard Dawkins to demonstrate ideas from his book *The God Delusion* on several media appearances, including *The Colbert Report* and *Talk of the Nation - Science Friday*.”).

<sup>384</sup> *Academic Endorsements—page 1*, CHURCH OF THE FLYING SPAGHETTI MONSTER, <http://www.venganza.org/evidence/endorsements1/>. (last visited Oct. 24, 2015).

Chris Westbury writes, “Flying Spaghetti Monsterism may well provide the solid basis on which the good children of Kansas can build a just, rational, and virtuous life.”<sup>385</sup> Alison Bernstein writes that “FSM is as good a set of beliefs as any religion.”<sup>386</sup> Charles E. M. Dunlop, Ph.D, heaps praise upon FSM in a fashion which mocks traditional theistic religion: “Close observers of human behavior will note that Italians have long de facto recognized pastafarianism as a serious competitor to Catholicism, practicing the former more frequently and with even greater gusto” and mocks the Bible verse Phillipians 4:13: “With Him all things are pastable.”<sup>387</sup>

Taking a similar approach to FSM, Barrett Brown & Texas A&M University sociologist Jon P. Alston’s 2007 Cambridge House Press book, *Flock of Dodos: Behind Modern Creationism, Intelligent Design & the Easter Bunny*, promotes evolution while attacking fundamentalist and evangelical Christianity. One *Rolling Stone Magazine* author praised the book while attacking “born-again wackos”:

Here’s the problem with America’s born-again wackos: only a gifted comic is capable of describing them, but no one with a sense of humor can stomach being around them. That’s why there are so few books like *Flock of Dodos*. With their painstaking attention to historical detail and amusingly violent writing style, Brown and Alston have given the religious right exactly the righteous, merciless fragging it deserves. I wish I could tie James Dobson down and make him eat every page.<sup>388</sup>

They attack creationists and Christianity, stating, “Yahweh could do nothing more to discredit the creationist movement by creating its most well-known proponents, if not in His own image, then in the image of some moderately retarded, would-be con artist. Heck, I wouldn’t put it past

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<sup>385</sup> *Id.* at 3.

<sup>386</sup> *Id.*

<sup>387</sup> *Id.*

<sup>388</sup> Matt Taibbi, Book Review (2007) (reviewing BARRETT BROWN, *FLOCK OF DODOS: BEHIND MODERN CREATIONISM, INTELLIGENT DESIGN, AND THE EASTER BUNNY* (2007)), [http://www.amazon.com/Flock-Dodos-Behind-Creationism-Intelligent/dp/0978721306/ref=tag\\_ti\\_title/104-2244305-1988716](http://www.amazon.com/Flock-Dodos-Behind-Creationism-Intelligent/dp/0978721306/ref=tag_ti_title/104-2244305-1988716).

him.”<sup>389</sup> Likewise Joel Kilpatrick’s light-hearted book, *A Field Guide to Evangelicals and their Habitat*, states that evangelical Christians “think evolution is a federally sponsored lie.”<sup>390</sup> The book is devoted to mocking evangelical and fundamentalist Christians.

In his popular book, *Monkey Girl: Evolution, Education, Religion and the Battle for America’s Soul*, journalist Edward Humes retells the *Kitzmiller v. Dover* trial over the teaching of intelligent design. Humes purports to promote the view that religion and evolution are compatible in the book, however makes it clear that many have drawn anti-religious implications from evolution:

By the middle of the nineteenth century, scientific proof of the existence of God seemed achingly, gloriously within reach. And then Charles Darwin took all that away, too, delivering in its place a world built in part by accident, in part by the brute, blind drive to survive—a purpose, to be sure, and a direction, but not a design. Chance, adaptability, and good fortune ruled this new world, where each species could not be seen, after all, as a master composer’s symphony, but as a desperate mechanic’s jury-rig of used parts. . . . Made in God’s image [was] gone. . . . The logic of Darwin, notwithstanding his own invocation of a creator in his writings, suggested that man’s ascendance was nothing more than a happy accident. . . . Life, intelligence, consciousness, and love were not gifts from God; it was all just a lucky break, a roll of the dice.<sup>391</sup>

Humes’ book’s website features a review from a senior writer for *U.S. News and World Report* published in a Sunday edition of the *Los Angeles Times*. The reviewer claimed it is “a cruel twist to evolutionists” that “human beings are ‘genetically disposed to believe in mysteries, miracles, God, and faith’”,<sup>392</sup> attacking Christians and stating that he “only wish[ed]” he could “close” his eyes to the Christian “fundamentalism”

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<sup>389</sup> *Id.*

<sup>390</sup> JOEL KILPATRICK, *A FIELD GUIDE TO EVANGELICALS & THEIR HABITAT* 132 (2006).

<sup>391</sup> EDWARD HUMES, *MONKEY GIRL: EVOLUTION, EDUCATION, RELIGION AND THE BATTLE FOR AMERICA’S SOUL* 4–5 (2007).

<sup>392</sup> Kit R. Roane, *Intelligent Dissent*, *LOS ANGELES TIMES* (Feb. 4, 2007), <http://articles.latimes.com/2007/feb/04/books/bk-roane4>.

Humes recounts in his book.<sup>393</sup> That same day, secular humanist Chris Mooney also took aim at religious fundamentalists in the *Los Angeles Times*, stating that “the worst science abusers . . . [are] anti-evolution fundamentalists.”<sup>394</sup>

Such words are tame compared to the antireligious messages that accompany evolution advocacy on the Internet. To give one sample, on a popular science blog, “Dr. Joan Bushwell’s Chimpanzee Refuge,” where various professional scientists contribute, freelance writer Kevin Beck tells “faith-filled gasbag[s]” to “look up ‘arrogant.’”<sup>395</sup> Beck praises PZ Myers for “having the temerity to put to use his years of education and scholarship in exploding the stupid arguments of fundagelical Christians.”<sup>396</sup> He contends that those who believe in the Bible accept “horseshit that has no inherent meaning,” and calls a hypothetical mother who questions evolution as “the little lamb . . . who is supremely arrogant.”<sup>397</sup> Beck calls her a “thoroughly debunked shitslinger” and ends with a stinging attack upon religion: “It’s often struck me that religious belief is so arrantly fucked up that its adherents aren’t content to merely be wrong; they have to get things 100 percent backward most of the time as well. In fact, the whole house of cards seems to rely on this, especially in an increasingly skeptical world.”<sup>398</sup>

This sort of incendiary anti-religious rhetoric is extremely common in pro-evolution commentary on the Internet. As noted, these merely represent a sampling of popular writings and numerous other analogous examples could be found. But there are ample cases in the popular media to expect that many would perceive a history of attacking religion closely associated with the advocacy of evolution.

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<sup>393</sup> *Id.*

<sup>394</sup> Chris Mooney & Alan Sokal, *Taking the Spin Out of Science*, LOS ANGELES TIMES (Feb. 4, 2007), <http://www.latimes.com/news/opinion/la-op-mooney4feb04,0,7924177.story?coll=la-opinion-righttrail>.

<sup>395</sup> Kevin Beck, *Look up “arrogant,” you faith-filled gasbag!*, Scienceblogs (Feb. 15, 2007), [https://web.archive.org/web/20070307111304/http://scienceblogs.com/bushwells/2007/02/look\\_up\\_arrogant\\_you\\_faithfill.php?](https://web.archive.org/web/20070307111304/http://scienceblogs.com/bushwells/2007/02/look_up_arrogant_you_faithfill.php?)

<sup>396</sup> *Id.*

<sup>397</sup> *Id.*

<sup>398</sup> *Id.*

## F. Dysteleology in Evolution Advocacy

According to Michael Shermer and MIT social scientist Frank Sulloway, “the number-one reason people offer for their belief in God is evidence of good design of the world.”<sup>399</sup> For this reason, a common argument for evolution purports to show that the world is poorly designed or flawed, and therefore could not have been made by God. This form of argument, called “dysteleology,” purports stands in direct opposition to religious viewpoints. Because this form of pro-evolution argument depends directly upon attacking religious beliefs, and because it is common in scientific textbooks and popular media, it deserves special attention.

Teleology is the study of design or purpose in natural phenomena. Dysteleological arguments typically begin by arguing that “God or a creator would not create natural phenomenon x.” The argument concludes that if x could not have been created by God, it therefore must have been produced by blind, naturalistic evolutionary processes. Dysteleological arguments are often associated with claims that evolution is “sloppy,” “painful,” or simply “tinkers” with biological structures. Regardless of whether these arguments are logically compelling or factually correct, the fact is they are commonly associated with evolution advocacy, having even been articulated in PBS’s popular series *Evolution*.<sup>400</sup>

As noted earlier, dysteleological arguments trace back to Darwin, who thought that a good, loving God could not have been responsible for much of what Darwin observed. Darwin instead chose to explain his observations through natural selection, as he argued, “[s]uch suffering, is quite compatible with the belief in Natural Selection,” and claimed that the “argument from the existence of suffering against the existence of an intelligent First Cause seems to me a very strong one; and the abundant presence of suffering agrees well with the view that all organic beings have been developed through variation and natural selection.”<sup>401</sup>

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<sup>399</sup> MICHAEL SHERMER, *HOW WE BELIEVE: THE SEARCH FOR GOD IN AN AGE OF SCIENCE* 78 (2000).

<sup>400</sup> See PBS, *Life’s Grand Design* (Nov. 9, 2015), <http://www.pbs.org/wgbh/evolution/change/grand/page06.html>.

<sup>401</sup> CHARLES DARWIN, *THE AUTOBIOGRAPHY OF CHARLES DARWIN* 75 (W.W. Norton, 2005).

Francisco J. Ayala, a prominent evolutionary biologist who is also a former Catholic priest (he believes it is “blasphemy to try to understand the world of physics and biology by reading the Bible”<sup>402</sup>) promotes a similar dysteleological argument for evolution and against intelligent design. He explains that intelligent design must be false, and evolution true, because God would never have made the “painful” structures we see in biology:

[T]he ‘design’ of organisms is not ‘intelligent’, but rather quite incompatible with the design that we would expect of an intelligent designer or even of a human engineer, and so full of dysfunctions, wastes, and cruelties as to unwarrant its attribution to any being endowed with superior intelligence, wisdom, and benevolence. . . . The defective design of organisms could be attributed to the gods of the ancient Greeks, Romans, and Egyptians, who fought with one another, made blunders, and were clumsy in their endeavors. But, in my view, it is not compatible with the special action by the omniscient and omnipotent God of Judaism, Christianity, and Islam.<sup>403</sup>

Ayala even argued in *Proceedings of the National Academy of Sciences USA* that “[t]he design of organisms is not intelligent but imperfect and, at times, outright dysfunctional”<sup>404</sup> and concludes elsewhere that only “[e]volution gives a good account of this imperfection.”<sup>405</sup>

In his best-selling book *The End of Faith*, Sam Harris asserts that “Biological truths are simply not commensurate with a designer God, or

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<sup>402</sup> “‘Most mainstream theologians, and most people who have read the bible thoughtfully, realize that the Bible it is not an elementary book of biology, or an elementary book of cosmology or of physics,’ said Ayala, a former Roman Catholic priest who received the National Medal of Science in 2001. ‘It amounts to blasphemy to try to understand the world of physics and biology by reading the Bible. That was not the purpose of the Bible . . . . It is a travesty to interpret the Bible that way.’” *Hana and Francisco J. Ayala: Separate Careers, a Common Passion for Knowledge*, AAAS NEWS ARCHIVES (Mar. 31, 2006), <http://www.aaas.org/news/releases/2006/0331ayala.shtml>.

<sup>403</sup> Francisco J. Ayala, *Design Without Designer Darwin’s Greatest Discovery*, in *DEBATING DESIGN FROM DARWIN TO DNA* 55, 56, 71 (William A. Dembski and Michael Ruse eds., 2004).

<sup>404</sup> Francisco J. Ayala, *Darwin’s Greatest Discovery: Design Without Designer*, 104 *PROC. OF THE NAT’L ACAD. OF SCI. USA*, 8567, 8573 (2007).

<sup>405</sup> Ayala, *supra* note 404, at 70.



even a good one” because “The perverse wonder of evolution is this; the very mechanisms that create the incredible beauty and diversity of the living world guarantee monstrosity and death. The child born without limbs, the sightless fly, the vanished species—these are nothing less than Mother Nature caught in the act of throwing her clay. No perfect God could maintain such incongruities.”<sup>406</sup>

These types of arguments even exist in textbooks. Douglas Futuyma’s 2005 text *Evolution* claims that “Darwin and subsequent evolutionary biologists have described innumerable examples of biological phenomena that are hard to reconcile with beneficent intelligent design” and “are inconsistent with the notion that an omnipotent Creator.”<sup>407</sup> Barton *et al.*’s textbook *Evolution* teaches that “natural selection is an imperfect mechanism . . . evidence that natural selection is responsible for the appearance of design in the living world comes from characteristic imperfections in adaptation.”<sup>408</sup> They conclude by explicitly arguing that: “adaptations in the natural world show just the kinds of imperfections that we would expect from natural selection but not from an omnipotent designer.”<sup>409</sup> Stein & Rowe’s *Physical Anthropology* makes a similar argument that “[d]esign flaws can best be explained as the natural outcome of gradual modification through time through natural selection rather than as the handiwork of a divine force.”<sup>410</sup> Freeman and Herron’s textbook *Evolutionary Analysis* argues that “the presence of vestigial traits . . . is inexplicable under special creation.”<sup>411</sup>

Stephen Jay Gould also cites allegedly poor design in nature as an argument against God and in favor of evolution:

Orchids manufacture their intricate devices from the common components of ordinary flowers, parts usually fitted for very different functions. If God had designed a beautiful machine to reflect his wisdom and power, surely

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<sup>406</sup> SAM HARRIS, *THE END OF FAITH: RELIGION, TERROR AND THE FUTURE OF REASON* 172 (2004).

<sup>407</sup> DOUGLAS J. FUTUYMA, *EVOLUTION* 49, 530 (2005).

<sup>408</sup> NICHOLAS H. BARTON ET AL., *EVOLUTION* 75 (Alexander Gann et al. eds., 2007).

<sup>409</sup> *Id.* at 81.

<sup>410</sup> PHILIP L. STEIN & BRUCE M. ROWE, *PHYSICAL ANTHROPOLOGY* 25 (Carolyn Henderson Meier et al. eds., 8th ed. 2003).

<sup>411</sup> SCOTT FREEMAN & JON C. HERRON, *EVOLUTIONARY ANALYSIS* 32 (2nd ed. 2001).

he would not have used a collection of parts generally fashioned for other purposes. Orchids were not made by an ideal engineer; they are jury-rigged from a limited set of available components. Thus, they must have evolved from ordinary flowers.<sup>412</sup>

George Levine views Darwin's work as formulated to explain the origin of natural evil:

Natural theology, the explanation of 'adaptation' that Darwin was determined to displace, is a kind of theodicy: it justifies the ways of God to man by showing that the world answers, as the Bridgewater Treatises were to formulate it, to 'the Power, Wisdom, and Goodness of God.' It demonstrates that God must exist and that a careful look at his creation will show that the evil within it is part of a loving plan for mankind. Darwin's theory, on the other hand, is what I'll call a geodicy, a demonstration that the world in all its wonderful diversity and stark contrasts makes sense entirely on its own terms, although without taking the satisfactions of human desire as its primary goal.<sup>413</sup>

Levine believes that "natural selection helps explain, as religion never satisfactorily could, the suffering in the world that so disturbed Darwin," since "flaws in the mechanism . . . are clear evidence that there is no intelligent design behind construction of the eye."<sup>414</sup> He provides a scathingly anti-theistic interpretation of the film "March of the Penguins" on the grounds that God would never allow the pain experienced by the penguins, asking: "What designer with any competence and with any compassion at all would construct a mode of living and survival that entails so much pain, so much awkwardness, such clumsy reuse of organs and limbs apparently adapted for other purposes?"<sup>415</sup>

"Incompetent design" has even been celebrated at major meetings of scientific organizations. In 2005, Don Wise, professor emeritus of

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<sup>412</sup> STEPHEN JAY GOULD, *THE PANDA'S THUMB: MORE REFLECTIONS IN NATURAL HISTORY* 20 (1980).

<sup>413</sup> LEVINE, *supra* note 89, at 24–25.

<sup>414</sup> *Id.* at 28, 40.

<sup>415</sup> *Id.* at 256–57.

geosciences at the University of Massachusetts, Amherst, organized a public singing of a song against intelligent design at a Geological Society of America (GSA) meeting. The song, mocking what he believes is a religious belief that life was designed, was sung to the tune of traditional protestant hymn, Battle Hymn of the Republic:

*My bones proclaim a story of incompetent design. / My back still hurts, my sinus clogs, my teeth just won't align. / If I had drawn the blueprint, I would cer-tain-ly resign. / Incompetent Design! / Evo-Evo-Evo-lution! Design is but a mere illusion. / Darwin sparked our revolution. / Science SHALL prevail!*<sup>416</sup>

Contending that intelligent design is a religious belief, Wise boasts that he “had an audience of about 300 singing that lustily at the end of the GSA meeting. . . . Oh, it was *gloriously* terrible.”<sup>417</sup>

Such dysteleological arguments against the existence of a good, powerful God common to theistic religions are made not only by scientists in their scientific meetings, but also on the pages of the most prestigious journals. Writing in the journal *Gene*, Stanford biologist Emile Zuckerkandl, a founder of the field of molecular evolution, makes similar arguments that God would not produce the biological structures which have evolved:

The observations in question definitely do not suggest that living systems have been built up thanks to the insights and decisions of a master engineer. Rather, the observations testify to a vast amount of continuous tinkering by trial and error with macromolecular interactions. The results of this tinkering are often retained when they can be integrated into the organism's functional whole. But why would God tinker? Doesn't He know in advance the biological pathways

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<sup>416</sup> Maggie Wittlin, *The Other I.D.: An Interview with Don Wise, Creator of “Incompetent Design”*, SEED MAG. (Nov. 15, 2005), [http://www.seedmagazine.com/news/2005/11/the\\_other\\_Id.php](http://www.seedmagazine.com/news/2005/11/the_other_Id.php); A video of some GSA participants singing the song (a separate rendition from the incident where song was sung by over 300 participants in the GSA meeting) may be viewed at <http://seedmagazine.com/media/video/IDSong.wmv>.

<sup>417</sup> *Id.*

that work? Isn't a tinkering God one who loudly says "I am not"? And why would He say so if He existed?"<sup>418</sup>

Zuckerlandl's article eventually becomes an all-out attack upon "[t]heists" and belief in a "higher intelligence," which he says is "being peddled to the public," although evolution has showed us how "the intelligence, notably, of humans and other mammals, can be produced in the absence of intelligence."<sup>419</sup>

Many theists would perceive that these dysteleological arguments, which commonly accompany advocacy for evolution, oppose the common religious belief that a good God is responsible for nature.

### **G. Evolutionary Accounts of the Origin of Human Morality and Religion**

Another evolutionary argument deserving special consideration involves attempts to explain the origin of human behaviors like morality and religion in strictly evolutionary terms. These arguments have grown in prominence in recent decades, and are commonly perceived to directly conflict with many religious accounts of human morality and religion. As behavioral ecologist John Alcock argues in *The Triumph of Sociobiology*, "an evolutionary approach to human behavior really does threaten a great many religious, political, and academic positions."<sup>420</sup>

For example, E.O. Wilson argues that "much if not all religious behavior could have arisen from evolution by natural selection."<sup>421</sup> According to Wilson, such views are widely shared, since that "[m]ost [biologists] agree that ethical codes have arisen by evolution through the interplay of biology and culture."<sup>422</sup> Indeed, Wilson and Michael Ruse write that evolutionary accounts of the origin of morality first arose in order to oppose Christianity: "Attempts to link evolution and ethics first sprang up in the middle of the last century, as people turned to alternative foundations

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<sup>418</sup> Emile Zuckerkandl, *Intelligent Design and Biological Complexity*, 385 GENE, 2, 10 (2006).

<sup>419</sup> *Id.* at 7, 16.

<sup>420</sup> JOHN ALCOCK, *THE TRIUMPH OF SOCIOBIOLOGY* 129 (2001).

<sup>421</sup> EDWARD O. WILSON, *CONSILIENCE: THE UNITY OF KNOWLEDGE* 282 (1998).

<sup>422</sup> *Id.* at 275.

in response to what they perceived as the collapse of Christianity.”<sup>423</sup> They make the conflict between evolutionary and religious accounts of the origin of religion explicit, asking, “If God does not stand behind the Sermon on the Mount, then what does?”<sup>424</sup> They then ask, “Does the sociobiological scenario just sketched justify the same moral code that religious believe to be decreed by God?”<sup>425</sup> The answer, they would tell us, is “no.”

Ruse and Wilson argue that the “ultimate foundations” of morality are purely biological and human perceptions of an objective moral code are merely an “illusion”:

As evolutionists, we see that no traditional justification of the kind is possible. Morality, or more strictly our belief in morality, is merely an adaptation put in place to further our reproductive ends. Hence the basis of ethics does not lie in God’s will—or in the metaphorical roots of evolution or any other part of the framework of the Universe. In an important sense, ethics as we understand it is an illusion fobbed off on us by our genes to get us to cooperate. It is without external grounding.<sup>426</sup>

They suggest that evolutionary accounts of morality directly conflict with religious accounts of morality, claiming to “[see] morality for what it is, a legacy of evolution rather than a reflection of eternal, divinely inspired verities,” since “[i]f this perception of human evolution is correct” then there is a “new basis for moral reasoning,” and it is “not in divine guidance or pure moral imperatives.”<sup>427</sup> Gregory Graffin summarizes the implications of this viewpoint: “from some of E. O. Wilson’s writing, it is clear that morality can be understood from a biological perspective and need not be as sacred as the theologians once believed.”<sup>428</sup>

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<sup>423</sup> MICHAEL RUSE & EDWARD O. WILSON, *The Evolution of Ethics*, 108 NEW SCIENTIST 50–52 (1985).

<sup>424</sup> *Id.*

<sup>425</sup> *Id.*

<sup>426</sup> *Id.*

<sup>427</sup> *Id.*

<sup>428</sup> PRESTON JONES, IS BELIEF IN GOD GOOD, BAD, OR IRRELEVANT?: A PROFESSOR AND A PUNK ROCKER DISCUSS SCIENCE, RELIGION, NATURALISM & CHRISTIANITY 67 (2006).

Many religious persons would take these arguments that religion, morality, and belief in God stem ultimately from evolutionary processes and not from the divine as antithetical to the teachings of their religion. Indeed, an essay in the journal *Nature* recently found that the “cognitive evolutionary approach” to studying religion “challenge[s] two central tenets of most established religions”:

First, the notion that their particular creed differs from all other (supposedly misguided) faiths; second, that it is only because of extraordinary events or the actual presence of supernatural agents that religious ideas have taken shape. On the contrary, we now know that all versions of religion are based on very similar tacit assumptions, and that all it takes to imagine supernatural agents are normal human minds processing information in the most natural way.<sup>429</sup>

As *The Economist* concluded when reporting on this issue, “Evolutionary biologists tend to be atheists, and most would be surprised if the scientific investigation of religion did not end up supporting their point of view.”<sup>430</sup> Such evolutionary arguments for the origin of religion and morality would likely be perceived to conflict with the religious beliefs of many Americans.

### **Part III: Working Towards a Solution**

#### **A. Declaring Evolution Unconstitutional: A Failed, Unnecessary, and Undesirable Solution**

After such extensive (though necessarily incomplete) documentation, it seems difficult to seriously deny a close historical association between the advocacy of evolution and what many would perceive as anti-religious activism. As might be expected, this anti-religious advocacy has led many Americans to believe that teaching evolution establishes atheism or secular humanism. Multiple courts have held that, for constitutional purposes, atheistic or non-theistic viewpoints can be

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<sup>429</sup> Pascal Boyer, *Religion: Bound to Believe?*, 455 NATURE 1038, 1039 (2008).

<sup>430</sup> *The Science of Religion: Where Angels No Longer Fear to Tread*, THE ECONOMIST (Mar. 19, 2008), [http://www.economist.com/science/displaystory.cfm?story\\_id=10875666](http://www.economist.com/science/displaystory.cfm?story_id=10875666).

considered religious,<sup>431</sup> and various disgruntled theistic religious persons have filed lawsuits contending that teaching evolution unconstitutionally advances atheism. But courts have universally rebuffed these arguments, agreeing that government advocacy of evolution is legal. Indeed, one could hardly imagine a more forceful judicial statement supporting the teaching of evolution than a declaration from the Supreme Court that it is *illegal to stop teaching evolution*. Yet in the 1968 landmark case *Epperson v. Arkansas*, this is precisely what the U.S. Supreme Court ruled—that the *failure to teach evolution is likely to be unconstitutional* because courts will suspect that it stems from a religious motive to protect certain religious beliefs.<sup>432</sup>

Despite the U.S. Supreme Court’s clear stance on this issue, no fewer than five lawsuits in recent decades have argued that teaching evolution establishes atheism and must therefore either be prohibited or balanced with the teaching of creationism. In each case, the parties arguing that teaching the pro-evolution viewpoint was unconstitutional *lost*.<sup>433</sup>

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<sup>431</sup> Sch. Dist. of Abington Twp. v. Schempp, 374 U.S. 203, 225 (1963) (“the State may not establish a ‘religion of secularism’ in the sense of affirmatively opposing or showing hostility to religion, thus ‘preferring those who believe in no religion over those who do believe’”); United States v. Seeger, 380 U.S. 163, 187 (1965) (non-theistic viewpoints can qualify as religious when they “occupy the same place in [a person’s] life as the belief in a traditional deity holds”); Welsh v. United States, 398 U.S. 333, 340 (1970) (non-theistic viewpoints (“occupy . . . ‘a place parallel to that filled by God’ in traditional religious persons”)); McGowan v. Maryland, 366 U.S. 420, 461 (1961) (nontheistic viewpoints can comprise “an aspect of human thought and action which profoundly relates the life of man to the world in which he lives.”); Torcaso v. Watkins, 367 U.S. 488, 495 n.11 (1961) (“Secular Humanism” is listed as religious viewpoint); McCreary County, KY. v. ACLU, 545 U.S. 844, 879 (2005) (“[t]he dissent says that the deity the Framers had in mind was the God of monotheism, with the consequence that government may espouse a tenet of traditional monotheism. This is truly a remarkable view”); Kaufman v. McCaughtry, 419 F.3d 678, 682 (7th Cir. 2005) (“The Supreme Court has recognized atheism as equivalent to a ‘religion’ for purposes of the First Amendment on numerous occasions”); Reed v. Great Lakes Cos., 330 F.3d 931, 934 (7th Cir. 2003) (“If we think of religion as taking a position on divinity, then atheism is indeed a form of religion.”).

<sup>432</sup> See *Epperson v. Arkansas*, 393 U.S. 97 (1968).

<sup>433</sup> See *Wright v. Houston Indep. Sch. Dist.*, 366 F. Supp. 1208 (S.D. Tex 1972); *Crowley v. Smithsonian Inst.*, 462 F. Supp. 725 (D.C. 1978); *Segraves v. State of California*, Sacramento Superior Court #278978. This decision was unpublished, and thus the account here relies upon an opinion posted on the internet at [https://web.archive.org/web/20010414135303/http://www.geocities.com/Athens/1618/Segraves\\_vs\\_California.html](https://web.archive.org/web/20010414135303/http://www.geocities.com/Athens/1618/Segraves_vs_California.html); *Pelozo v. Capistrano Unified Sch. Dist.*, 37 F.3d 517, 519 (9th Cir. 1994), *cert. denied*,

However, to revisit Justice Black's concurring opinion in *Epperson*, courts should not "write off as pure nonsense the views of those who consider evolution an anti-religious doctrine." Until courts recognize the anti-religious implications many draw from neo-Darwinian evolution, this issue presents, as Black put it, "problems under the Establishment Clause far more troublesome than are discussed in the Court's opinion."<sup>434</sup>

How are courts to deal with these "troublesome" implications? Evolution should be taught as science without any religious or anti-religious agendas. But Justice Black is correct: even under the best circumstances, teaching evolution is probably not completely religiously neutral because it will conflict with the religious beliefs of some students. In *Kitzmiller v. Dover*, Judge Jones sought to resolve this controversy by simply declaring from the bench that it is "utterly false" to believe evolution conflicts with religion.<sup>435</sup> But this approach both violates cardinal rules of constitutional law<sup>436</sup> and exacerbates the feeling among the many Americans who do have

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515 U.S. 1173 (1995); *Moeller v. Schrenko*, 251 Ga. App. 151 (Ga. Ct. App. 1st Div. 2001).

<sup>434</sup> *Epperson*, 393 U.S. at 113.

<sup>435</sup> *Kitzmiller v. Dover*, 400 F.Supp.2d 707, 765 (M.D.Pa. 2005) ("Both Defendants and many of the leading proponents of ID make a bedrock assumption which is utterly false. 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.").

<sup>436</sup> *See*, *U.S. v. Ballard*, 322 U.S. 78, 86–87 (1944) ("The law knows no heresy, and is committed to the support of no dogma, the establishment of no sect. . . . Freedom of thought, which includes freedom of religious belief, is basic in a society of free men. It embraces the right to maintain theories of life and of death and of the hereafter which are rank heresy to followers of the orthodox faiths. Heresy trials are foreign to our Constitution. Men may believe what they cannot prove. They may not be put to the proof of their religious doctrines or beliefs. Religious experiences which are as real as life to some may be incomprehensible to others. Yet the fact that they may be beyond the ken of mortals does not mean that they can be made suspect before the law. . . . The religious views espoused by respondents might seem incredible, if not preposterous, to most people. But if those doctrines are subject to trial before a jury charged with finding their truth or falsity, then the same can be done with the religious beliefs of any sect. When the triers of fact undertake that task, they enter a forbidden domain. The First Amendment does not select any one group or any one type of religion for preferred treatment. It puts them all in that position.") (citations omitted); *West Virginia State Bd of Educ. v. Barnette*, 319 U.S. 624, 642 (1943) ("If there is any fixed star in our constitutional constellation, it is that no official, high or petty, can prescribe



religious objections to evolution that the government divisively disrespects their religious views and treats them as political outsiders.

There are also strong pedagogical reasons not to remove evolution from public schools. Neo-Darwinian evolution has been tremendously influential in modern biology, and students will lack a complete understanding of the biological sciences unless they learn about evolution. Moreover, Darwin's ideas have had a significant impact upon politics and culture, and evolution remains a hotly debated topic today. Failing to inform students about Darwinian thinking denies them a complete understanding of both Western society and modern science. Removing evolution from public schools would therefore severely harm science education and prevent students from becoming well-informed, scientifically literate citizens.

Evolution should still be taught, but its teaching must be justified under the appropriate legal doctrine which recognizes the anti-religious messages that some associate with the concept. As I will discuss in the next section, religious non-neutrality stemming from historical religious or anti-religious associations should not necessarily disqualify evolution, or any genuinely scientific theory from being taught as science.

### **B. The Antidote to Darwin's Poisoned Tree: Jettison Historical Analysis and Employ the "Incidental Effect" Doctrine**

This article has demonstrated that there is much historical anti-religious—particularly anti-theistic and anti-Christian—activism associated with advocacy for evolution. The public is aware of these historical associations. Under current legal tests, this poisons the tree from which Darwinian evolution grows, where informed, reasonable observers will perceive that pro-evolution advocacy is associated with anti-religious activism. When justifying the teaching of evolution, legal precedent mandates that courts may not ignore the history of anti-religious advocacy on the part of many of evolution's leading proponents.

A few courts have expressed sensitivity to the anti-religious implications of evolution, but none have squarely scrutinized its close historical relation to anti-religious activism. In *Wright v. Houston*, a federal

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what shall be orthodox in politics, nationalism, religion, or other matters of opinion or force citizens to confess by word or act their faith therein.”).

trial court acknowledged that “[s]cience and religion necessarily deal with many of the same questions, and they may frequently provide conflicting answers,” but upheld the teaching of evolution since, “it is not the business of government to suppress real or imagined attacks upon a particular religious doctrine.”<sup>437</sup> Likewise, in *Crowley v. Smithsonian Institution*, plaintiffs sued the Smithsonian Institution arguing that displays featuring evolution at the Smithsonian’s National Museum of Natural History established the religion of secular humanism and violated the constitutional mandate that the government remain neutral in matters of religion. The court found that the displays were not illegal and passed the *Lemon* test because the primary effect of the exhibit does not advance religion and any religious establishment is “at most incidental to the primary effect of presenting a body of scientific knowledge.” However, the court told the parties it was “sensitive to plaintiffs’ interpretation of the theory of evolution as religion and is aware that they do not stand alone.”<sup>438</sup>

Another example comes from *Segraves v. State of California*, where a parent of children in California public schools challenged the California State Board of Education’s Science Framework that mandated the teaching of evolution, alleging this prevented himself and his family from freely exercising their religion. Although the California Superior Court accepted that evolution was incompatible with the Segraves’ religious beliefs, the Court held that the California’s anti-dogmatism policy provided sufficient accommodation to their views.<sup>439</sup>

Various courts have also recognized that the community controversy caused by teaching evolution can justify special treatment of the subject. For example, in her dissent from a denial of rehearing of a case involving a textbook disclaimer in *Freiler v. Tangipahoa Parish Board of Education*, Fifth Circuit Judge Barksdale acknowledged:

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<sup>437</sup> *Wright v. Houston Indep. Sch. Dist.*, 366 F. Supp. 1208, 1211 (S.D. Tex 1972) (holding that the remedy for these religious conflicts was neither to teach the biblical story of creation nor to avoid the subject of origins altogether, but given no scientific alternative to evolution, the court simply let the lone teaching of evolution stand).

<sup>438</sup> *Crowley v. Smithsonian Inst.*, 462 F. Supp. 725, 727 (D.C. 1978).

<sup>439</sup> See *Segraves v. California*, No. 278978 (Sup. Ct. Sacramento Cnty.), [https://web.archive.org/web/20010414135303/http://www.geocities.com/Athens/1618/Segraves\\_vs.\\_California.html](https://web.archive.org/web/20010414135303/http://www.geocities.com/Athens/1618/Segraves_vs._California.html) (last visited Feb. 20, 2016).

The theory of evolution may be viewed by some as anti-religious. The disclaimer recognizes this historic tension between evolution (scientific concept) and other theories or concepts about the origin of life and matter, using the “Biblical version of Creation” as but *an example* of such other concepts.<sup>440</sup>

In that case, because “an estimated 95% of the parish students are adherents to the Biblical concept of creation,” it was not inappropriate for the parish “to give context to the message, but without promoting that concept or expressing intolerance for any other [viewpoint].”<sup>441</sup> The Fifth Circuit’s panel ruling in *Freiler* similarly held that the sticker had a legitimate secular purpose “to disclaim any orthodoxy of belief that could be inferred from the exclusive placement of evolution in the curriculum, and . . . to reduce offense to the sensibilities and sensitivities of any student or parent caused by the teaching of evolution.”<sup>442</sup>

Finally, in *Selman v. Cobb County*, plaintiffs argued that the school district inappropriately singled out evolution, exposing a religious purpose. But the court rejected this argument because “evolution is the only theory of origin being taught in Cobb County classrooms” and “evolution was the only topic in the curriculum, scientific or otherwise, that was creating controversy at the time of the adoption of the textbooks and Sticker,” and thus “[t]he School Board’s singling out of evolution is understandable in this context.”<sup>443</sup> The court then found two legitimate secular purposes for the sticker: “[f]ostering critical thinking is a clearly secular purpose . . . because [the disclaimer] tells students to approach the material on evolution with an open mind, to study it carefully, and to give it critical consideration,” and “presenting evolution in a manner that is not unnecessarily hostile” is legitimate for the secular purpose of “reduc[ing] offense to students and parents whose beliefs may conflict with the teaching of evolution.”<sup>444</sup>

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<sup>440</sup> *Freiler v. Tangipahoa Parish Bd. of Educ.*, 201 F.3d 602, 606 (5th Cir. 2000), *cert. denied*, 530 U.S. 1251 (2000).

<sup>441</sup> *Id.* at 607 (emphasis in original).

<sup>442</sup> *Freiler v. Tangipahoa Parish Bd. of Educ.*, 185 F.3d 337, 344 (5th Cir. 1999).

<sup>443</sup> *Selman v. Cobb County Sch. Dist.*, 390 F. Supp. 2d 1286, 1302–0– (N.D. Ga. 2005) (*vacated and remanded*, *Selman*, 390 F.Supp.2d. 1286).

<sup>444</sup> *Id.* at 1302, 1305.

These courts recognize that teaching evolution can impinge upon religion and cause controversy, and in some cases, they explicitly acknowledge that many religious persons see evolution as threatening to their religious beliefs. But no court has directly addressed the historical association between evolution and anti-religious activism. Nonetheless, these courts hint that a solution to any advancement or inhibition of religion resulting from the teaching of evolution is to consider such effects to be non-fatal secondary effects.

The *Lemon* test requires that the “primary effect” of a government policy neither “advance” nor “inhibit” religion.<sup>445</sup> A long-standing constitutional doctrine holds that “secondary” or “incidental” effects of a policy can touch upon religion (whether to advance or inhibit it), as long as the primary effect is secular. Thus, only “primary” effects which advance (or inhibit) religion—not “secondary” or “incidental” effects—can make a law unconstitutional. In the case of biological origins, teaching about any *bona fide* scientific theory will have a primary effect that advances scientific knowledge. If the scientific theory touches upon some theological claims or issues, any effects upon religion will be secondary or incidental. As one author writes:

[I]f a theory has scientific value and evidence to support it, its primary effect would be to advance knowledge of the natural world, not to advance religion. The ultimate goal of schools is to educate students. Where a theory has scientific value and supporting evidence, it provides a basis for knowledge. Whether it coincidentally advances religion should not matter.<sup>446</sup>

This methodology is employed when courts assess the constitutionality of teaching evolution. Courts typically focus on the scientific content of neo-Darwinism, *ignoring* the (a) religious or anti-religious motives of evolution proponents; (b) religious or anti-religious views of evolution proponents; (c) evolution’s religious or anti-religious implications; or (d) historical connections between evolution advocacy and anti-religious advocacy. If courts heed the warning of Justice Black and

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<sup>445</sup> *Lemon v. Kurtzman*, 403 U.S. 602, 612 (1971).

<sup>446</sup> Theresa Wilson, *Evolution, Creation, and Naturally Selecting Intelligent Design out of the Public Schools*, 34 U. TOL. L. REV. 203, 232 (2003).

acknowledge the existence of such “anti-religious” factors associated with evolution (such as the close association between anti-religious activism and the promotion of evolution), courts might simultaneously acknowledge the reality of factors (a)-(d), but consider them incidental effects of teaching the scientific concept of evolution, with the primary effect being the advancement of scientific knowledge.

Unfortunately, courts often apply a double standard when assessing the constitutionality of teaching *non*-evolutionary viewpoints of biological origins by taking criteria considered only applicable to secondary effects and treating those criteria as if they indicate primary effects. In such cases, courts ignore the scientific content of the non-evolutionary viewpoint and convert the (a) religious motives of proponents; (b) religious views of proponents; (c) religious implications of the concept; or (d) other religious associations (whether via people or groups, like fundamentalist Christians) connected to advocacy of that viewpoint, into primary effects. Thus, when non-evolutionary viewpoints are found to have a close historical relationship to religious advocacy, courts claim that there is a primary effect that advances religion, and the teaching of the viewpoint is ruled unconstitutional. But given that evolution is commonly found in close association with anti-religious advocacy, courts that will apply the law fairly and eschew double standards have two choices:

- (1) Declare the teaching of evolution unconstitutional.
- (2) Recognize that (a)-(d) represent “secondary” or “incidental” effects and thus are irrelevant to determining if a concept is constitutional for teaching in science classrooms. This applies whether the concept is the scientific theory evolution, or some non-evolutionary scientific viewpoint.

As discussed, courts must not strike down the teaching of evolution, and thus option (2) is the only viable solution for preserving the integrity of science education. Yet this option implies that courts can no longer objectively consider historical associations of non-evolutionary viewpoints with religious activism when assessing the constitutionality of teaching non-evolutionary scientific viewpoints. Indeed, such an approach would defeat common arguments against the constitutionality of teaching intelligent design in public schools. For this reason, many outcome-based jurists who oppose the teaching of ID will choose a third option: They will

continue to apply the double standard, employing fallacious criteria (a)–(d) to try to disbar ID from public school classrooms,, but will ignore (a)–(d) when evaluating the constitutionality of teaching evolution.

The just solution is to develop a jurisprudence that recognizes that a scientific theory can be taught in public schools even if it touches upon religious beliefs or has a history of anti-religious (or pro-religious) advocacy.<sup>447</sup> Such a model is implicit in other court decisions which recognize that the *primary* or direct effect of state action must be distinguished from incidental or secondary effects. As the Supreme Court has stated:

The Court has made it abundantly clear, however, that “not every law that confers and ‘indirect,’ ‘remote,’ or ‘incidental’ benefit upon [religion] is, for that reason alone, constitutionally invalid.” Here, whatever benefit there is to one faith or religion or to all religions, is indirect, remote, and incidental.<sup>448</sup>

State action that results in an indirect or secondary benefit (or harm) to religion is thus not unconstitutional. In *Agostini v. Felton*,<sup>449</sup> the Court added that it is not the magnitude of the benefit that matters; the question is whether the effects/benefits of a policy provided are direct or merely a consequence of implementing a religiously neutral or secular principle. If the latter, then the effect or benefit is merely incidental. Such reasoning has been used to uphold many programs which may have resulted in incidental benefits to religion but were implemented “generally without regard to the sectarian-nonsectarian, or public-nonpublic nature of the institution benefited” under criteria that are “in no way skewed towards religion.”<sup>450</sup> In *Zobrest v. Catalina Foothills School District*, the Court again upheld a program giving aid “neutrally to any child qualifying as ‘disabled’ under the [act], without regard to the ‘sectarian-nonsectarian, or public-nonpublic

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<sup>447</sup> See DAVID K. DEWOLF, JOHN G. WEST, & CASEY LUSKIN, *Intelligent Design Will Survive Kitzmiller v. Dover*, 68 MONT. L. REV. 7 (2007).

<sup>448</sup> *Lynch v. Donnelly*, 465 U.S. 668, 683 (1984) (citations omitted).

<sup>449</sup> *Agostini v. Felton*, 521 U.S. 203 (1997).

<sup>450</sup> *Witters v. Washington Dep’t of Servs. For the Blind*, 474 U.S. 481, 488 (1986) (*citing* *Committee for Public Ed. & Religious Liberty v. Nyquist*, 413 U.S. 756, 782–83, n.38) (citations and quotations omitted).

nature' of the school the child attends."<sup>451</sup> This principle was strengthened in *Mitchell v. Helms*:

We have consistently turned to the principle of neutrality, upholding aid that is offered to a broad range of groups or persons without regard to their religion. If the religious, irreligious, and a religious are all alike eligible for governmental aid, no one would conclude that any indoctrination that any particular recipient conducts has been done at the behest of the government.<sup>452</sup>

As the Court held in *Agostini*, a benefit to religion is thus merely incidental if it "is allocated on the basis of neutral, secular criteria that neither favor nor disfavor religion."<sup>453</sup>

Precisely such logic has permitted the courts to acknowledge the anti-religious implications of teaching neo-Darwinism and at the same time to sanction its teaching in unambiguous terms. As Justice Black asked in *Epperson v. Arkansas*, "If the theory [of evolution] is considered anti-religious, as the Court indicates, how can the State be bound by the Federal Constitution to permit its teachers to advocate such an 'antireligious' doctrine to schoolchildren?"<sup>454</sup> The answer to Justice Black's rhetorical question is clear: Courts must treat the larger religious implications of scientific theories such as neo-Darwinism as merely incidental to the primary effect of teaching students about a scientific theory.

Some courts have justified the teaching of evolution using this precise reasoning. For example, in *McLean*, Judge Overton found that if creation science were a scientific theory, then it could have been taught because any touching upon religion would have been secondary:

Secondary effects which advance religion are not constitutionally fatal. Since creation science is not science,

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<sup>451</sup> *Zobrest v. Catalina Foothills Sch. Dist.*, 509 U.S. 1, 10 (1993).

<sup>452</sup> *Mitchell v. Helms*, 530 U.S. 793, 809 (2000) (citations omitted).

<sup>453</sup> *Id.* at 813. (Because services to students in a religious school resulted in a benefit that had been distributed on a neutral, secular basis, the program was constitutional).

<sup>454</sup> *Epperson v. Arkansas*, 393 U.S. 97, 113 (Black, J., concurring).

the conclusion is inescapable that the only real effect of Act 590 is the advancement of religion.<sup>455</sup>

This approach was also followed in *Crowley v. Smithsonian Institution*, where a federal judge rejected arguments that Smithsonian exhibits on evolution established “secular humanism” because the “impact [on religion] is at most *incidental* to the primary effect of presenting a body of scientific knowledge.”<sup>456</sup> Similarly, in *Peloza v. Capistrano Valley School District*, high school biology teacher John Peloza objected to teaching evolution on the grounds that it conflicted with his religious beliefs, but the Ninth Circuit rejected his complaint because “[e]volution is a scientific theory based on the gathering and studying of data, and modification of new data.”<sup>457</sup> Because evolution is based upon science, any effects upon religion are not constitutionally fatal.

The “incidental effect” approach has also been applied in cases dealing with public school curricula outside of the teaching of evolution. In *Grove v. Mead School District*, fundamentalist Christians complained that a classroom reader established secular humanism. The court rejected the plaintiffs’ contentions because the curricular materials had only an “indirect, remote, or incidental”<sup>458</sup> effect upon religion due to the secular reasons for their inclusion in the curriculum and their lack of explicit endorsement of any religious viewpoint. In *Malnak v. Yogi*, Judge Adams’ concurrence called the Big Bang a teachable scientific “astronomical interpretation of the universe,” despite the fact that it deals with an “ultimate” answer.<sup>459</sup> Thus when a curricular subject, such as evolution or the Big Bang, is properly recognized as a scientific theory, courts treat the advancement of any religious beliefs as merely secondary or incidental effects.

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<sup>455</sup> McLean v. Arkansas Board of Education, 529 F. Supp 1255, 1272 (C.D. Ark. 1982).

<sup>456</sup> Crowley v. Smithsonian Inst., 462 F. Supp. 725, 727 (D.C. 1978) (emphasis added).

<sup>457</sup> Peloza v. Capistrano Valley Sch. Dist., 37 F.3d 517, 521 (9th Cir. 1994), *cert. denied*, 515 U.S. 1173 (1995).

<sup>458</sup> Grove v. Mead Sch. Dist., 753 F.2d 1528, 1539 (9th Cir. 1985) (citations and quotations omitted) (*aff’d in part, vacated in part, rev’d in part on other grounds by* Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg’l Planning Agency, 911 F.2d 1331 (9th Cir. 1990), *aff’d* Tahoe-Sierra Pres. Council v. Tahoe Reg’l Planning Agency, 535 U.S. 302 (2002)).

<sup>459</sup> Malnak v. Yogi, 592 F.2d 197, 209 (3d Cir. 1979) (Adams, J., concurring).



The same should be done for evolution. Under the incidental effects doctrine, a *bona fide* scientific theory like evolution can still be taught in public schools despite the widely known public history of anti-religious activism associated with the advocacy of evolution. Such a jurisprudential model allows a court to justify the teaching of evolution taught despite the long history of anti-religious activism surrounding the theory. Courts must recognize that such cultural perceptions of the historical associations between a scientific theory of origins and religion (or non-religion) are secondary or incidental effects, and not constitutionally fatal to the teaching of a legitimate scientific viewpoint. This is the best way to preserve the constitutionality of teaching of evolution in public schools, and it is the antidote to Darwin's poisoned tree.

Yet in employing such legal reasoning, courts must be impartial and must also abandon legal tests that consider cultural perceptions of the historical associations of *non*-evolutionary viewpoints on biological origins with religious activism. To put it plainly, if courts wish to preserve the constitutionality of teaching evolution in light of its long historical association with antireligious advocacy, they must not disbar the teaching of intelligent design because of any alleged history of religious activism associated with the latter concept.