

# ***Darwin and Design: Exploring a Debate***

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An intense passion for truth, especially religious truth, is often regarded as a key source of intolerance and civil conflict in pluralistic societies. Exploring this issue in his essay, "Truth and Human Fellowship," Maritain argues at length in support of the conclusion that "genuine human fellowship is not jeopardized—quite the contrary!—it is fostered by zeal for truth, *if only love is there.*"<sup>1</sup> The addition of love is a vital qualification, and, as his essay makes clear, at the heart of his notion of love is the divine Word sought in humility.<sup>2</sup> Interestingly, this essay is followed immediately by "God and Science," an essay of comparable importance. In the latter essay Maritain observes that the modern scientific approach to truth and reality has taken center stage in Western culture, although the "old notion of a basic opposition between science and religion is progressively passing away."<sup>3</sup> He adds: "[T]he relation of modern science to man's knowledge of God—demands a rather delicate, sometimes complicated analysis."<sup>4</sup>

It is certainly true that the putatively necessary conflict between religion and science is a myth no longer as commonly promulgated in academic

1. Jacques Maritain, "Truth and Human Fellowship," *On the Use of Philosophy* (Princeton, New Jersey: Princeton University Press, 1961), p. 43 (emphasis added.)

2. *Ibid.*, pp. 17, 41.

3. *Ibid.*, pp. 44-45.

4. *Ibid.*, p. 45. Considering Maritain's scientific background, he was in a position to appreciate the complexity of the analysis involved. On Maritain's background in science, see Stanley Jaki, "Maritain and Science," *Chance or Reality and Other Essays* (Lanham, Maryland: University Press of America, 1986), pp. 41-62.

circles as it once was,<sup>5</sup> although the myth is far from dead.<sup>6</sup> Today the scholarly debate has shifted to the question of whether the genesis of modern science depended essentially on Judeo-Christian revelation. For instance, according to David Lindberg and Ronald Numbers,

the exact relationship between ... Christianity and science [remains elusive]. All too often those who have argued that Christianity gave birth to modern science—most notably the Protestant historian Reijer Hooykaas and the Catholic priest-scientist Stanley L. Jaki—have sacrificed careful history for scarcely concealed apologetics. From the fact that modern science developed in Christian Europe they have tended to conclude, without further demonstration, that there was a causal connection between Christianity and science. ... [A new breed of scholars] demonstrated that neither 'conflict' nor 'harmony' adequately captured the complex interaction between Christianity and science.<sup>7</sup>

A similar view informs two works by John Hedley Brooke.<sup>8</sup> Inasmuch as shades of historicism color Brooke's stimulating analyses, one may wonder whether his historiographical assessment of prior conceptions of the origin and development of science vis-à-vis religion is any less applicable to his own historical narrative. And Lindberg and Numbers's *ad hominem* dismissal of Jaki's contribution to the history of science may elicit doubts as to whether the purity of the motives inspiring their own historical vision of the genesis of modern science surpasses the integrity of Jaki's scholarly endeavors.<sup>9</sup>

Recently, however, a number of prominent Christian and non-Christian thinkers have been waging a rather contentious battle of words over whether natural science can disclose and identify in a definitive way the unique

5. Compare Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues* (New York: HarperCollins Publishers, 1997); Gary B. Ferngren, ed., *Science & Religion: A Historical Introduction* (Baltimore, Maryland: Johns Hopkins University Press, 2002); John F. Haught, *Science & Religion: From Conflict to Conversation* (Mahwah, New Jersey: Paulist Press, 1995).

6. See Ronald L. Numbers, *The Creationists: The Evolution of Scientific Creationism* (Berkeley: University of California Press, 1992), pp. 158-83, *passim*.

7. David C. Lindberg and Ronald L. Numbers, eds., *God and Nature: Historical Essays on the Encounter between Christianity and Science* (Berkeley: University of California Press, 1986), pp. 5-6.

8. John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (New York: Cambridge University Press, 1991); John H. Brooke and Geoffrey Cantor, *Reconstructing Nature: The Engagement of Science and Religion* (New York: Oxford University Press, 1998).

9. Compare Stanley Jaki, *The Savior of Science* (Grand Rapids, Michigan: William B. Eerdmans, 1988; reprint, 2000), pp. 215-16.

fingerprints of a divine Architect.<sup>10</sup> This issue is more complex than might initially appear, as one finds Christians and non-Christians on both sides. Indeed, some of the more caustic quarrels obtain among Christians who are otherwise united in their opposition to philosophical materialism.<sup>11</sup> William Dembski provides an example of what I have in mind:

*Design theorists are no friends of theistic evolution.* As far as design theorists are concerned, theistic evolution is American evangelicalism's ill-conceived accommodation to Darwinism. ... When boiled down to its scientific content, theistic evolution is no different from atheistic evolution. ... As far as design theorists are concerned, theistic evolution is an oxymoron.<sup>12</sup>

The Van Till-Johnson exchange offers another illustration:

If biological evolution is, as far as Johnson can see, inextricable from the presuppositions of naturalism, and if evolutionary naturalism is radically opposed to the existence of a supernatural Creator, then how is it possible for a person to be what Johnson calls a 'theistic naturalist'? How could one possibly be an authentic Christian theist—one whose worldview is built on belief in the Creator God—and at the same time a proponent of naturalism? Isn't 'theistic naturalism' an oxymoron of the highest order? It would seem so, and this appears to be precisely the kind of conclusion that Johnson would have the readers of *First Things* reach. As he defines it, theistic naturalism is a transparently incoherent stance that no rational or intelligent Christian could possibly take. Hence, to be a proponent of such (Johnson offers Diogenes Allen, Ernan McMullin, and myself as prime examples), it would appear that one must give up either rationality, or intelligence, or authentic Christian faith.<sup>13</sup>

Johnson's "apologetic" reply includes the following: "Obviously I offended Van Till with that phrase 'theistic naturalism.' In a way I am sorry for that." Johnson, however, stresses that "theistic naturalism is ultimately incoherent," and he is evidently convinced that theistic evolutionists endorse theistic naturalism, which "limits God's freedom by the dictates of naturalistic philosophy." Battles

10. See Richard F. Carlson, ed., *Science and Christianity: Four Views* (Illinois: InterVarsity Press, 2000); Phillip E. Johnson, "The Rhetorical Problem of Intelligent Design," *Rhetoric & Public Affairs* 1, no. 4 (1998), pp. 587-91; Robert T. Pennock, ed., *Intelligent Design Creationism and Its Critics* (Cambridge, Massachusetts: MIT Press, 2001).

11. See Phillip E. Johnson, Denis O. Lamoureux, et al., *Darwinism Defeated? The Johnson-Lamoureux Debate on Biological Origins* (Vancouver, Canada: Regent College Publishing, 1999); Edward T. Oakes, S.J., et al., "Edward T. Oakes and His Critics: An Exchange," *First Things* 112 (April 2001), pp. 5-13.

12. William A. Dembski, "What every theologian should know about creation, evolution, and design," [http://www.origins.org/articles/dembski\\_theologn.html](http://www.origins.org/articles/dembski_theologn.html).

13. Howard J. Van Till and Phillip Johnson, "God and Evolution: An Exchange," *First Things* 34 (June/July 1993), pp. 32-41.

of this sort do not tend to promote human fellowship over social discord.

From a Thomistic standpoint, it seems fair to say that these debates touching on “the relation of modern science to man’s knowledge of God” accentuate the need for more penetrating philosophic analyses in an age dominated by modern science. In what follows, I explore the conflict-ridden topic of design theory vs. evolutionism and underscore some theoretical difficulties in the positions advanced by writers on each side. We will hardly find ourselves in a situation conducive to fruitful dialogue unless these philosophic lacunae are properly understood and overcome.

### Genesis vs. Evolution?

In the PBS eight-hour television documentary, *Evolution*, an impressive array of today’s most outspoken neo-Darwinists, including Dr. Kenneth Miller, a Roman Catholic and professor of biology at Brown University, were featured. Billed as “one of the most important series in PBS history,” the documentary was aired originally in September 2001, and its central idea is explored further in Carl Zimmer and Stephen Jay Gould’s 384-page companion book—*Evolution: The Triumph of an Idea*.

Evolutionary theory, which touches on fundamental anthropological and theological questions, is often presented in public schools as if it were an absolutely indisputable scientific fact. And the PBS documentary, regarded by some as an example of thinly disguised propaganda, reinforces this doctrinaire view. In the eyes of many, such presentations suggest an antireligious bias in public education. The question of God, often declared to be a private matter of conscience, is excluded from the curriculum, while the apparent conflict between evolutionary theory and religious faith is “resolved” by asserting that natural science is agnostic with respect to the question of God’s existence, or by distinguishing between the realm of empirical facts (science) and the realm of personal values (religion). But the mere assertion that natural science can neither prove nor disprove God’s existence does not explain *how* evolutionary theory and biblical faith are to be reconciled. Likewise, the fact/value distinction stressed in Stephen J. Gould’s NOMA (nonoverlapping magisteria) principle seems to exclude God from the realm of extramental reality, an exclusion no orthodox Christian would countenance.<sup>14</sup>

14. See Stephen J. Gould, “Nonoverlapping Magisteria,” *Intelligent Design Creationism and Its Critics*, pp. 737-49. In a note (p. 749), Gould asserts that Pope Pius XII violated the NOMA principle if he actually rejected polygenism as “incompatible with the doctrine of original sin. ... I would declare him out of line for letting the magisterium of religion dictate

Champions of design theory,<sup>15</sup> such as Phillip Johnson and William Dembski, deserve credit for their efforts in drawing attention to ambiguous aspects of evolutionary theory as presented in the typical biology course. For instance, it is often asserted that God need not be introduced to explain the origin and development of life, from the simplest life forms to the most complex organisms. Various writers<sup>16</sup> seem to believe that physical or natural laws alone suffice as the ultimate basis for the desired web of explanations.<sup>17</sup> This approach to the problem seems to render God superfluous as an explanatory principle.<sup>18</sup> Why turn to religion when science can supply the answers? Even the belief in miracles strikes many people today as a quaint survival of premodern cultures, a product of religious mythology. Yet design theorists maintain that science properly understood can reveal the existence of an intelligent Designer operating throughout the world of nature.<sup>19</sup> Unlike many of their opponents, design theorists have no reservations about bringing God into the science lab. Design theorists, like many others, are disturbed by the secularist policy of excluding God from the public square, including state-sponsored education. And this exclusionary policy typically assumes the form of a state-mandated silence imposed in the name of tolerance and cultural diversity, although,

a conclusion within the magisterium of science.” This indicates clearly that, for Gould, the domain of theological faith is subordinate to that of empirical science. Gould’s NOMA principle is discussed in Phillip Johnson, *The Wedge of Truth: Splitting the Foundations of Naturalism* (Illinois: InterVarsity Press, 2000), pp. 95-102.

15. Michael Denton, *Evolution: A Theory in Crisis* (Bethesda, Maryland: Adler and Adler, 1986), cited by Numbers, *The Creationists*, p. 435, n. 35, contributed in a significant way to the initial development of design theory, one of the more sophisticated branches of scientific creationism. Denton, however, is not an advocate of scientific creationism. Cf. Michael J. Denton, “The Intelligent Design Movement: Comments on Special Creationism,” in *Darwinism Defeated?*, pp. 141-54.

16. E.g., Richard Dawkins, “Science Discredits Religion,” in *Philosophy of Religion: Selected Readings*, 2/e, ed. Michael Peterson et al. (New York: Oxford University Press, 2001), pp. 509-12.

17. “[A]lthough atheism might have been *logically* tenable before Darwin, Darwin made it possible to be an intellectually fulfilled atheist.” Richard Dawkins, *The Blind Watchmaker* (New York: W. W. Norton and Company, 1986), p. 6. The views of a number of these authors are discussed in Kenneth R. Miller, *Finding Darwin’s God: A Scientist’s Search for Common Ground between God and Evolution* (New York: HarperCollins Publishers, 1999), chaps. 6 and 7; Robert T. Pennock, *Tower of Babel: The Evidence Against the New Creationism* (Cambridge, Massachusetts: MIT Press, 1999), pp. 171, 202, 245, 333-34, 336.

18. Compare Thomas Aquinas, *Summa theologiae*, I, q. 2, a. 3, obj. 2.

19. E.g., William A. Dembski, “Not Even False? Reassessing the Demise of British Natural Theology,” *Philosophia Christi*, Series 2, vol. 1, no. 1 (1999), pp. 17-43.

in effect, the imposed silence on religious matters favors a secularist mentality. In view of the widespread and openly hostile attitude toward religion in the public square—an attitude shared by agnostics and others in positions of political influence—various believers seek any available means to resist the tide of secularism.<sup>20</sup>

On October 10 Zenit News Agency reported that during a speech the previous day to the Synod of Bishops, Josef Cardinal Ratzinger pointed out that the “marginalization of God” helps to explain the crisis now confronting the Catholic Church.<sup>21</sup> And many are convinced that our society cannot but continue to decline culturally as long as it refuses to recognize the Creator’s absolute centrality. As some appreciation of the universality of divine providence seems essential to the sound moral and spiritual development of human souls, many would agree that our public schools should welcome, rather than exclude, references to God within the context of classroom instruction.<sup>22</sup> And some, including leading design theorists such as William Dembski, are of the opinion that genuine empirical science can definitively establish the reality of an intelligent cosmic Designer, whose unmistakable signature can be deciphered through an open-minded investigation of the extraordinary complexity of DNA, for example.

### **Design Theory: Boon or Bane?**

In “Not Even False? Reassessing the Demise of British Natural Theology,” Dembski maintains that design theory is empirically testable inasmuch as it possesses “empirical content.” For Dembski, a theory has empirical content “if it entails or renders probable a proposition *P* that has empirical content,” that is, a proposition that “rules out certain possible observations.”<sup>23</sup> Dembski maintains, moreover, that from the standpoint of eighteenth-century British natural theology it was hardly controversial to assert the claim that the existence of a super-intelligent cosmic Designer is demonstrable within the proper boundaries of natural science. But the truth of this claim was eventually obscured, according to Dembski, by two critical developments.

20. Consider the September 2000 televised debate at Franklin and Marshall College between Alan Keyes and Alan Dershowitz on the role of religion in society. Available at <http://www.c-spanstore.com/159474.html>.

21. Zenit News Agency, <http://www.zenit.org/english/visualizza.phtml?sid=11119> (October 10, 2001).

22. The issue of divine providence will surface again in the latter half of this paper.

23. Dembski, “Not Even False?” p. 21, n. 8.

The first development concerns a shift in conceptual emphasis within British natural theology.<sup>24</sup> During the initial stages of British natural theology's evolution, writers such as William Paley, William Derham, and Thomas Reid relied heavily on the idea of contrivance in crafting their arguments for the existence of a divine Designer as the ultimate source of the order observed throughout nature. This cosmic Designer was commonly understood to be intimately involved in the progressive unfolding of the natural world. As British natural theology continued to evolve conceptually, however, writers such as Charles Babbage abandoned the idea of contrivance as a sign of intelligent order in favor of the idea of natural law to explain the order observed in the natural world. These writers considered the idea of natural law superior to that of contrivance from the standpoint of natural theology and of God's infinite dignity. God was deemed capable of achieving His goals by means of natural laws without directly intervening regularly in the countless events of an evolving universe. This conceptual shift also seemed to harmonize better with a more sophisticated, modern scientific understanding of the physical universe.

Dembski proceeds to argue that an unintended consequence of this problematic shift was a more or less subtle but fundamental revision of natural theology along deistic lines. In view of the new emphasis on the laws of nature in explaining the order of the cosmos, many came to regard as unnecessary the concept of God as an intimately involved cosmic Designer. That seemingly primitive theistic concept was supplanted by a more erudite concept of God as divine Legislator. Now, however, God as divine Legislator appeared far more distant and much less immediately involved in the daily unfolding of the natural world. In consequence, the updated natural theology seemed less consistent with theism than with deism.<sup>25</sup>

The second development, according to Dembski, concerns the rise of a distorted conception of science in the nineteenth century.<sup>26</sup> The cultural dominance of this new, positivist conception of natural science led to the *a priori* dismissal of the possibility of empirical scientific proofs of the existence of a divine Designer. In Dembski's view, the new positivist conception of science ultimately resulted in the demise of deism and, with the aid of secularists such as Thomas Huxley, the triumph of agnosticism. In response to what they deem to be a methodologically deformed conception of natural science, Dembski and other design theorists wish

24. *Ibid.*, pp. 22-27.

25. *Ibid.*, pp. 23, 25, 27.

26. *Ibid.*, pp. 27-30.

to introduce what, in their view, would constitute a more adequate and less biased scientific methodology, one that is not *necessarily* agnostic vis-à-vis *intelligent* design.

Many would find Dembski's analysis rhetorically compelling; nonetheless, his analysis is inconclusive. Perhaps the most objectionable aspect of Dembski's project is that design theory appears to grant excessive credit to natural science and, in consequence, detracts from philosophical theology.<sup>27</sup> His approach suggests that philosophical theology cannot stand without the support of natural science. No doubt the discoveries of modern science can be especially useful to those engaged in the activity of philosophical theology. But it is a mistake to infer that the value and viability of philosophical theology depends essentially on this or that scientific theory. In their endeavor to redraw and expand the boundaries of natural science, design theorists such as Dembski blur the line of demarcation between empirical science and philosophical theology. This endeavor results in a controversial amalgamation known as "physico-theology,"<sup>28</sup> which historically has not had a favorable impact on religion.<sup>29</sup> As certain critics have observed, physico-theology might be able to provide a strong argument for the existence of a finite deity, an extremely powerful secondary cause, but nothing beyond that.<sup>30</sup> While stressing the immanence of God, Dembski and other design theorists do not seem to appreciate fully the infinite magnitude of God's omnipotence and transcendence.

Natural science and philosophical theology are distinct and autonomous modes of inquiry, and their proper independence cannot profitably be sacrificed on the altar of disciplinary integration. Like other proponents of design theory, Dembski does not seem to give sufficient attention to the essential difference between philosophical naturalism and methodological naturalism. The meta-scientific assertion that there are no causes other than strictly natural (non-divine) causes reflects the stance of philo-

27. On the granting of theological purchase to natural science and attendant difficulties, cf. Brooke, *Science and Religion*, pp. 192-225.

28. See Ernan McMullin, "Natural Science and Belief in a Creator: Historical Notes," in *Physics, Philosophy, and Theology: A Common Quest for Understanding*, ed. Robert J. Russell, William R. Stoeger, S.J. and George V. Coyne, S.J. (Vatican City: Vatican Observatory, 1988), pp. 49-79; Michael J. Buckley, S.J., "The Newtonian Settlement and the Origins of Atheism," in *Physics, Philosophy, and Theology*, pp. 81-102.

29. See Michael J. Buckley, S.J., *At the Origins of Modern Atheism* (New Haven: Yale University Press, 1987).

30. Compare James Collins, *God in Modern Philosophy* (Chicago: Henry Regnery Company, 1959; reprint, 1967), pp. 355-61; Edward T. Oakes, S.J., "Newman, Yes; Paley, No," *First Things* 109 (January 2001), pp. 48-52.



sophical naturalism, not that of methodological naturalism.<sup>31</sup> When used illicitly to support philosophical naturalism, the practice of natural science ceases being authentic science and becomes scientism, an ideology that contradicts metaphysical and theological truth. Scientism is nothing but an inverted metaphysics. Unlike philosophical naturalism, methodological naturalism demands only that properly scientific explanations, not meta-scientific explanations, be restricted to the order of purely natural causes, and it does not deny the epistemic legitimacy of meta-scientific, that is, philosophic and theological, explanations. Thus, when founded on methodological naturalism, natural science seeks to explain observed patterns and natural phenomena by reference to natural causes exclusively, without thereby implying that there are no causes other than finite natural causes. According to methodological naturalism properly understood, a cause which transcends the realm of material being is beyond the investigative competence of natural science; the investigation of intelligent immaterial causes pertains to other domains of speculative inquiry. One might add that the possibility of these higher domains of speculative inquiry is suggested by implicit “boundary questions” that surface at the methodological perimeter of natural science.<sup>32</sup>

### **Evolution Within Neo-Darwinian Boundaries?**

On the other side of the divide, there are evolutionary theorists such as Kenneth Miller. His 1999 book in defense of neo-Darwinism, *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution*, has received high praise. Consider Jacob Neusner's comment on the book's dust jacket:

Religion's answer to Stephen Jay Gould's scientific atheism, Kenneth R. Miller, Brown's superstar in biology and religion, here shows “not only why Darwinian evolution does not preclude the existence of God, but how remarkably consistent evolution is with religion.” Written with sharp wit and in pungent prose, his book redefines the entire debate by showing the true meaning of the science represented by the name of Darwin. Had William Jennings Bryan read Miller's book, he would

31. Regarding philosophical naturalism, see Mariano Artigas, *The Mind of the Universe: Understanding Science & Religion* (Pennsylvania: Templeton Foundation Press, 2000), pp. 117-18, 214-16.

32. See Mariano Artigas, “The Mind of the Universe: Understanding Science and Religion,” in *Faith, Scholarship, and Culture in the 21st Century*, ed. Alice Ramos and Marie I. George (Washington, D.C.: The Catholic University of America Press, 2002), pp. 116-18; *The Mind of the Universe*, pp. 13-20, 111.

have not botched the Scopes trial—but then, there'd not have been such a trial to begin with.

Acknowledging the basic distinction between philosophical naturalism and methodological naturalism, Miller rejects the former in favor of the latter.<sup>33</sup> He also believes that Darwin espoused methodological naturalism, not philosophical naturalism. Accordingly, Miller opposes both design theorists, including Phillip Johnson, William Dembski, and Michael Behe, and proponents of evolutionary theory based on philosophical naturalism, including Edward O. Wilson, William Provine, Daniel Dennett, and Richard Dawkins. As a Roman Catholic, Miller attempts to show that there is no essential conflict between theistic belief and neo-Darwinism properly understood. In fact, he is convinced that neo-Darwinism sets the stage for a more mature and subtle understanding of God.<sup>34</sup>

*Finding Darwin's God* may obtain a favorable reception among various readers with religious proclivities. For, unlike the typical neo-Darwinist, Miller challenges those who maintain that the neo-Darwinian theory of evolution undercuts traditional monotheistic religions. A close examination of *Finding Darwin's God*, however, reveals that the gift Miller offers unwary readers is nothing more than a Trojan horse, although he himself seems unaware of the dangers involved.

A particularly controversial aspect of *Finding Darwin's God* is the notion of God that it seeks to defend. The impact of that notion is apparent in various parts of Miller's work. For instance, he appears to endorse the view that "the physical world has an existence independent of God's will."<sup>35</sup> This view, of course, is not the common teaching of leading theologians within the Catholic intellectual tradition, namely, that all finite beings depend absolutely upon God's creative power exercised through His di-

33. Miller articulates this key distinction in terms of absolute and scientific materialism. Cf. *Finding Darwin's God*, pp. 27-28; 192-219. Robert T. Pennock, another leading critic of design theory, also stresses the importance of this distinction in *Tower of Babel*, pp. 189-96. Unfortunately, this distinction does not help Pennock secure a firm grasp of the ontological difference between human persons and non-rational animals (*ibid.*, pp. 114-15), nor does it help him differentiate sound from unsound conceptions of God, as he seems to defend doctrinal pluralism against Phillip Johnson (*ibid.*, p. 192). Johnson, in contrast, seems guilty of an illicit leap in reasoning. Compare Edward T. Oakes, S.J., above, notes 11 and 30. *Pace* Pennock, a sound philosophical theology can eliminate at least some religious conceptions he appears to regard as legitimate theological options, but it does not yield nearly as much as Johnson suggests by his sudden transition from the domain of natural theology to that of revealed theology (*Wedge of Truth*, chap. 7).

34. Miller, *Finding Darwin's God*, pp. 233-45, 260-92.

35. *Ibid.*, p. 234.

vine will.<sup>36</sup> Miller suggests that he accepts, on the basis of religious *faith*, the Judeo-Christian doctrine that God created the physical universe. "The existence of the universe is not self-explanatory, and to a believer the existence of every particle, wave, and field is a product of the continuing will of God."<sup>37</sup> From the standpoint of scientific *reason*, however, he holds that it is impossible to establish that matter is not self-caused.

Either there is a God, and the big bang [sic] dates the moment of His creation of the universe, or there is a tendency of matter to create itself from nothingness. If that is the case, the big bang [sic] merely marks the moment of that self-creation or the latest oscillation in a grand series of cosmic cycles. ... If cosmology provided us with a way to distinguish between these two extreme alternatives, we might then wait for the scientific word from on high on the status of the Almighty. Unfortunately, it doesn't, and we can't.<sup>38</sup>

It is not evident how one might reconcile such an opinion with any sound *integration* of faith and reason, and it is unclear whether Miller truly appreciates the importance of such integration, in which theological faith is understood as a perfection of natural reason, and not vice versa.

Concerning the scientist's assertion that it is conceivable that matter might be able to create itself *ex nihilo*, one could object that such an assertion involves an intrinsic contradiction. It would not suffice to reply that, since there is no intrinsic contradiction in the scientific claim that the material universe may have originated via quantum tunneling or a vacuum fluctuation,<sup>39</sup> matter's self-creation *ex nihilo* is not logically impossible. The reason this reply would not suffice is that such origination is not, strictly speaking, identical to creation *ex nihilo*. A vacuum fluctuation involves a change from one state to another, whereas creation *ex nihilo* falls completely outside the category of change.<sup>40</sup>

36. For instance see Aquinas, *Summa theologiae*, I, q. 9, a. 2, *corp.*; q. 19, a. 4; q. 44, a. 1; q. 104, a. 1.

37. Miller, *Finding Darwin's God*, p. 241.

38. *Ibid.*, p. 226. On the question of self-causation, others have expressed a similar view: "There had once been an interfering God who made all things. But now there was a God so much wiser who could make things make themselves" (Brooke and Cantor, *Reconstructing Nature*, pp. 161-62). Here Brooke and Cantor are referring to Charles Kingsley, a clergyman sympathetic to Darwin's theory. Even if one provides a benign interpretation of the ambiguous statement about things making themselves (in kind), the anthropological question regarding the production of human souls remains. This question will resurface later.

39. Compare William E. Carroll, "Aquinas and the Big Bang," *First Things* 97 (November 1999), pp. 18-20.

40. See Aquinas, *Summa theologiae*, I, q. 3, a. 8, *corp.*; q. 45, a. 2, ad 2 & 3; a. 3, *corp.*; *Summa contra gentiles*, Bk. II, chaps. 16-18. Artigas, *The Mind of the Universe*, pp. 112-15.

Here one might ask whether a vacuum fluctuation is significantly different from creation *ex nihilo* if, contrary to the law of conservation of mass-energy,<sup>41</sup> the total mass-energy sum of the subsequent state exceeds that of the initial state. If the sums differ, however briefly, one would naturally seek a causal explanation for the increase. In that case, the question would be whether the ontological difference, however small, could be explained without reference to a transcendent efficient cause of being (*ens*) qua being (*esse*). And if, in explaining the relevant ontological difference, one refuses to acknowledge the reality of a transcendent efficient cause from whom the cosmos ultimately receives its proper order and participated intelligibility, it is unclear how one could avoid the anti-metaphysical (and, consequently, antiscientific) stance of writers such as Hume and Kant, who do not recognize the intrinsic order and rational intelligibility of the cosmos.<sup>42</sup> Thus, the assertion that human reason left to itself cannot know that matter's self-creation *ex nihilo* is absolutely impossible is not credible, for unaided reason can grasp the metaphysical truth that what does not actually exist cannot serve as an efficient cause of anything.<sup>43</sup>

Such reasoning, however, would not persuade Miller. According to his way of thinking, scientists would be compelled by the force of logic to conclude that God created the material world if it were possible to demonstrate that matter could not create itself *ex nihilo*; however, science cannot prove the existence of God. Ergo, since matter is not uncreated but mutable, no logical absurdity would be implied were scientists to entertain seriously the scientific hypothesis that matter created itself *ex nihilo*. The problem with this line of reasoning is that an empirical scientific proof of God's existence does not follow logically from the recognition that matter's self-creation *ex nihilo* is absolutely impossible. If one remains strictly within the proper methodological boundaries of empirical

41. See Jaki, *Savior of Science*, pp. 123-29; *The Road of Science and the Ways to God* (Chicago: The University of Chicago Press, 1978), pp. 148-50.

42. Compare Charles A. Hart, *Thomistic Metaphysics: An Inquiry Into the Act of Existing* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1959), pp. 293-95; Jaki, *The Road of Science and the Ways to God*, pp. 96-127, 153-54; *Chance or Reality*, p. 31; *The Only Chaos and Other Essays* (Lanham, Maryland: University Press of America, 1990), pp. 205-7, 230; Joseph Owens, C.Ss.R., "This Truth Sublime," in *Towards a Christian Philosophy* (Washington, D.C.: The Catholic University of America Press, 1990), p. 193.

43. See Aquinas, *Summa theologiae*, I, q. 2, a. 3, *corp.*; *Summa contra gentiles*, Bk. I, Chap. 22, §6; James F. Anderson, *The Cause of Being: The Philosophy of Creation in St. Thomas* (St. Louis, Missouri: B. Herder Book Co., 1952), pp. 3-4; Charles A. Hart, *Thomistic Metaphysics*, pp. 262-64, 267-68; George P. Klubertanz, S.J., *Introduction to The Philosophy of Being* (New York: Appleton-Century-Crofts, Inc., 1955), pp. 130-35.

science, the most one could infer from the absolute impossibility of matter's self-creation *ex nihilo* is that, from a causal standpoint, the existence of matter has no *scientific* explanation.

Here one might pause to ask why consideration of a plausible alternative has been omitted, namely, the classical Greek view that matter is without temporal beginning and, hence, is not created *ex nihilo*. There are two reasons why the insertion of this classical view would not help to advance the present discussion. The first reason is that even if one were to concede that the material world is without temporal beginning, it would not follow necessarily that the existence of this world does not presuppose a transcendent efficient cause of being. It is necessarily the case, of course, that if a thing has a beginning in time, then it depends for its existence upon an efficient cause. But the negation of the consequent does not follow logically from the denial of the antecedent, unless antecedent and consequent are identical, which is not the case in this instance.<sup>44</sup> The second reason is that the question at issue here is whether matter qua matter is its very own *raison d'être* or whether it presupposes an extrinsic cause of its existence. In other words, is the matter of a corporeal being (*ens*) identical to its being (*esse*), or are matter and being (*esse*) really distinct? If the former, then, in effect, we are left with philosophical materialism, which may or may not be philosophically coherent.<sup>45</sup> If the latter, then matter qua matter is not its very own *raison d'être*, and one must search elsewhere for the efficient cause of being (*id quod est*) qua being (*id quod est*).<sup>46</sup> In either case, the question is not scientific but metaphysical in nature.

One might add that Miller's position as an empirical scientist would be compromised if he were to concede that matter is, *per impossibile*, self-caused *ex nihilo*. For if matter could create itself *ex nihilo*, then the meta-scientific principle of efficient causality,<sup>47</sup> according to which an effect necessarily depends on an actual, not purely imaginary, efficient cause, would no longer obtain. Without benefit of this meta-scientific principle, however, the naturally intelligible foundation of empirical science, along

44. See Aquinas, *Summa theologiae*, I, q. 44, aa. 1 & 2; q. 45, a. 4; *On the Eternity of the World*, 2/e, trans. Cyril Vollert, S.J., et al. (Milwaukee, Wisconsin: Marquette University Press, 1984); Anderson, *The Cause of Being*, pp. 51-112; John F. Wippel, *Metaphysical Themes in Thomas Aquinas*, (Washington, D.C.: The Catholic University of America Press, 1984), pp. 191-214.

45. See Aquinas, *Summa theologiae*, I, q. 3, a. 1, *corp.*; a. 8, *corp.* & ad 3; q. 44, a. 2, *corp.*

46. See Gerald B. Phelan, *G. B. Phelan: Selected Papers*, ed. Arthur G. Kirn, C.S.B. (Toronto: Pontifical Institute of Mediaeval Studies, 1967), pp. 63-66.

47. See Robert J. Kreyche, *First Philosophy: An Introductory Text in Metaphysics* (New York: Holt, Rinehart and Winston, Inc., 1959), pp. 224-43.

with every other form of knowledge, would be undermined.<sup>48</sup> For the practice of empirical science presupposes an active search for proximate (natural, not supernatural) causes of known effects, but if the natural cause is removed, the properly scientific quest for causal explanations would be in vain. And this exposes a certain irony in Miller's line of thought. The irony is that his position ultimately lends support to the approach of scientific creationists if the meta-scientific principle of efficient causality presupposed by empirical science is not universally applicable. For, in searching for causal gaps within the natural order, scientific creationists attempt to climb above the realm of purely natural causes investigated by modern science in order to raise the empirical curtain on the supernatural.<sup>49</sup> As it turns out, Miller does reject the universality of the principle of causality within the natural order of things when he abandons this principle at the atomic level of quantum events:

[M]atter in the universe behaves in such a way that we can *never* achieve complete knowledge of any fragment of it ... [hence] the breaks in causality at the atomic level make it fundamentally *impossible* to exclude the idea that what we have really caught a glimpse of might indeed reflect the mind of God.<sup>50</sup>

Miller appears to labor under the assumption that (the Copenhagen interpretation of) Heisenberg's principle of uncertainty is needed to secure a coherent defense of human freedom.

[I]f [natural] laws were to run all the way down to the building blocks of matter, they would also have denied free will. [But these laws do *not* apply at the level of quantum systems.]<sup>51</sup>

[A] strictly determined chain of events in which our emergence was preordained,

48. Compare Jaki, *The Road of Science and the Ways to God*, pp. 202-209.

49. Such endeavors detract from a proper understanding of the transcendent creative act of the primary cause operating through the actions of secondary causes while simultaneously preserving their status as *genuine* secondary causes in accordance with their natures. (See Aquinas, *Summa theologiae*, I, q. 8, aa. 1 & 3; a. 2, *corp.*) In effect, such endeavors bolster fideism, which has no use for metaphysical principles (or metaphysical *preambula fidei*) as it leaps toward the Supernatural. (Compare Ralph McInerny, *Characters in Search of Their Author* [Notre Dame, Indiana: University of Notre Dame Press, 2001], pp. 23, 61-68; Pope John Paul II, *Fides et ratio*, nos. 48, 52-3, 55, 61, 63, 83-4, 88.)

50. Miller, *Finding Darwin's God*, pp. 213-14; also compare p. 230.

51. *Ibid.*, p. 251.

would require a strictly determinant [sic] physical world. In such a place, all events would have predictable outcomes, and the future would be open neither to chance nor independent human action. A world in which we would *always* evolve is also a world in we [sic] would *never* be free.<sup>52</sup>

In a certain respect Miller's assumption would make sense if one were operating with an anthropology rooted in philosophical materialism,<sup>53</sup> and his anthropology appears to fit such a description.<sup>54</sup> Unfortunately for Miller, his understanding of quantum uncertainty (of the Copenhagen variety)<sup>55</sup> does not yield the freedom he thinks it does, but only a counterfeit.<sup>56</sup> Like meaning and morally significant acts, genuine freedom does not stem from anything but an immaterial principle,<sup>57</sup> which is altogether beyond the purview of empirical science.<sup>58</sup> And the intellectual principle of free choice could not exist apart from the primary and universal efficient cause that is also the ultimate and universal final cause—the unparticipated good.<sup>59</sup> The defense of spiritual freedom, then, must proceed along *metaphysical* lines; natural science alone will not suffice to accomplish the task.<sup>60</sup>

If one turns to consider the proper integration of the deliverances of divine faith and those of natural reason—an integration not evident in Miller's work—one may also note that if neo-Darwinism admits the assertion that matter could create itself *ex nihilo*, and if the claim concerning matter's self-creation *ex nihilo* contradicts metaphysical truths presupposed by Judeo-Christian doctrine, then neo-Darwinism and Judeo-Christian doctrine are mutually inconsistent. But Judeo-Christian

52. *Ibid.*, p. 273.

53. See Artigas, *The Mind of the Universe*, pp. 216-21.

54. In a moment I will return to this point.

55. See Jaki, *The Road of Science and the Ways to God*, pp. 197-213.

56. One may wonder whether the attempt to defend freedom of choice on the basis of the Copenhagen interpretation of Heisenberg's principle of uncertainty is but another instance of that implicit fideism which eschews the activity of philosophic inquiry enriched by metaphysical principles.

57. Compare Aquinas, *Summa theologiae*, I, q. 83, a. 1, *corp.* & ad 5; a. 3, *corp.*

58. Apparently Miller thinks otherwise: "*In biological terms*, evolution is the only way a Creator could have made us the creatures we are—*free* beings in a world of authentic and *meaningful moral and spiritual choices*" (Miller, *Finding Darwin's God*, p. 291; emphasis added).

59. Compare Aquinas, *Summa theologiae*, I, q. 6, a. 3; q. 82, aa. 1 & 2; q. 83, a. 1, ad 3; q. 105, a. 4.

60. On the perennial question of human freedom, one valuable study is Vernon J. Bourke's *Will in Western Thought: An Historico-Critical Survey* (New York: Sheed and Ward, 1964).

61. See note 67 below.

doctrine presupposes the metaphysical truth that no entity can be its own efficient cause of existence.<sup>61</sup>

Moreover, the trajectory of Miller's thought appears to presuppose a meta-scientific theory, namely, philosophical materialism, that conflicts with traditional Abrahamic faiths. For instance, consider the following:

We could ... hold up the origin of life itself as an unexplained mystery, and find in that our proof of God at work. Since neither I nor anyone else can yet present a detailed, step-by-step account of the origin of life from nonliving matter, such an assertion would be safe from [scientific] challenge—but *only for the moment*.<sup>62</sup>

Given that the demonstration of the existence of immaterial substance exceeds the competence of natural science, Miller's statement appears to imply that an ontologically inferior cause (e.g., inert matter) may be sufficient *per se*, apart from a higher (immaterial) cause, to explain an ontologically superior effect (e.g., rational animals). In other words, he implies that an effect may possess a good or perfection, for example, intelligence, which the total efficient cause of the effect does not possess in any respect, whether univocally or otherwise.<sup>63</sup> This, of course, is consistent with the view that matter could create itself *ex nihilo*. For the effect (the matter created *ex nihilo*) would possess a good or perfection, namely, the act of existence, not possessed by the efficient cause of the matter that was created *ex nihilo*. Not surprisingly, orthodox neo-Darwinism proceeds on the assumption that an effect can possess a perfection not possessed in any way by the effect's proper efficient cause.

The foregoing suggests a related difficulty. Neo-Darwinists seek to explain the origin of the human species by reference to natural causes alone, thereby advancing the view that the human person, body *and* mind, can in principle be explained exclusively in terms of material causes. Such a view cannot but yield a radically truncated anthropology.<sup>64</sup> For the metaphysical difference between man and non-rational animals is regarded as nothing more than a difference in degree.<sup>65</sup> According to this view, the human mind is believed to emerge, in some yet-to-be-explained fashion, from self-organized matter, or it is reduced to an epiphenomenon of highly

62. Miller, *Finding Darwin's God*, p. 276; emphasis added. This is consistent with an earlier assertion: "Any idea that life requires an inexplicable vital essence, a spirit, an *élan vital*, has long since vanished from our lives and laboratories, a casualty of genetics and biochemistry" (*ibid.*, p. 214).

63. On the contrary, see Thomas Aquinas, *Summa theologiae*, I, q. 4, a. 2, *corp.*; q. 2, a. 3, *corp.* (*Quarta via*); q. 65, a. 1, *corp.*

64. Compare Artigas, *The Mind of the Universe*, pp. 216-21.

65. Compare Jaki, *The Savior of Science*, pp. 140-41, 230-31.



developed cerebral tissue. In either case, human phylogenesis is conceived strictly in terms of material causes. The essential nature of man, however, is found in the hylomorphic composition of *material* body possessing life in potency and *spiritual* soul, the first act of an organic body.<sup>66</sup> And just as act, absolutely speaking, cannot be posterior to potency,<sup>67</sup> so a spiritual soul cannot be derived ontologically from a material body possessing life in potency without violating the philosophic truth that the perfection of a metaphysically superior principle (e.g., form, finite spirit) cannot be explained causally by a metaphysically inferior principle (e.g., matter, organic body having life in potency).<sup>68</sup> Darwin and contemporary champions of Darwinism do not appreciate this fundamental truth,<sup>69</sup> as the metaphysical

66. Compare Aquinas, *Summa theologiae*, I, q. 75, a. 4; a. 5, ad 3 & 4; qq. 76, 90 & 91. Note that Question 91, which explores the formation of the first human body, does not preclude a properly evolutionary explanation, although not in the manner understood by Miller. For, unlike Aquinas (*Summa theologiae*, I, q. 91, a. 4, ad 1), he does not accept the teleologically sensitive view that the physical universe was created for man's sake. Nor would Miller agree with Aquinas that natural causes are directed by the supernatural primary cause (*Summa theologiae*, I, q. 2, a. 3, *corp.* & ad 2; qq. 22 & 103). Here one should stress that Aquinas's understanding of the divine ordering of secondary causes (*Summa theologiae*, I, q. 105, aa. 5 and 6, for instance) is other than the view held by modern and contemporary advocates of physico-theology, in which the cosmic Designer is conceived as an extremely powerful *external* (not to be confused with *extrinsic*) cause. Unlike the latter view, Aquinas's understanding of efficient causality rests on the doctrine of the analogy of being. (Compare Phelan, *G. B. Phelan: Selected Papers*, p. 121; Hart, *Thomistic Metaphysics*, pp. 271-91, 293.) This helps clarify why *any* biological theory of evolution founded on naturalism, whether philosophical or methodological, must be targeted as dangerous by proponents of physico-theology, inasmuch as they presuppose a *physical*, not *metaphysical*, theory of efficient causality. From the perspective of a properly metaphysical theory of efficient causality, however, scientific theories of biological evolution based on *methodological* naturalism pose no real threat to revealed truths of faith. Of course methodological naturalism should not be confused with scientism, which *is* incompatible with religious truth. Compare John Paul II, *Fides et ratio*, no. 88.

67. Compare Aquinas, *Summa theologiae*, I, q. 3, a. 1, *corp.*; a. 8, *corp.*; q. 2, a. 3, *corp.*; q. 4, a. 1, ad 2; q. 9, a. 1, *corp.*; above, note 43. For some probing discussions of the issues involved in the priority of act to potency, see James A. Weisheipl, O.P., "The Principle *Omne Quod Movetur Ab Alio Movetur* in Medieval Physics," in *Nature and Motion in the Middle Ages*, ed. William E. Carroll (Washington, D.C.: The Catholic University of America Press, 1985), pp. 75-97; Joseph Owens, C.Ss.R., "Actuality in the 'Prima Via' of St. Thomas," in *St. Thomas Aquinas on the Existence of God*, ed. John R. Catan (Albany: State University of New York Press, 1980), pp. 192-207.

68. Compare Aquinas, *Summa theologiae*, I, q. 3, a. 2, *corp.*; q. 4, a. 2, obj. 3 & ad 3; q. 44, a. 2, ad 2; Robert E. Brennan, O.P., *General Psychology: An Interpretation of the Science of Mind Based on Thomas Aquinas* (New York: The Macmillan Company, 1937); pp. 73-6, 480.

69. Not all natural scientists fail to appreciate the anthropological difficulties involved. Compare Brooke and Cantor, *Reconstructing Nature*, pp. 161-62.

hierarchy of being<sup>70</sup> lies beyond the scope of the reductionist boundaries of the materialist philosophy behind Darwin's evolutionary theory.<sup>71</sup>

Thus, it would appear that a strictly neo-Darwinian explanation of man's origin cannot logically be reconciled with a fully developed Christian anthropology, a point stressed indirectly in Pope John Paul II's October 1996 address to the Pontifical Academy of Sciences:

If the human body takes its origin from pre-existent living matter, the spiritual soul is immediately created by God. Consequently, theories of evolution which, in accordance with the philosophies inspiring them, consider the spirit as emerging from the forces of living matter or as a mere epiphenomenon of this matter are incompatible with the truth about man. Nor are they able to ground the dignity of the person.<sup>72</sup>

It would seem, then, that the philosophic vision behind the neo-Darwinian theory of evolution cannot supply an adequate and complete etiologic grasp of human nature, particularly since the Darwinian emphasis on the *blind* mechanism of natural selection<sup>73</sup> operating on purely *random* variations sets aside the idea of global teleology or universal final causality.<sup>74</sup> This becomes apparent elsewhere in Miller's book:

70. On the metaphysical hierarchy of being, see Hart, *Thomistic Metaphysics*, pp. 143-69.

71. Compare Stanley L. Jaki, *Angels, Apes, and Men* (Peru, Illinois: Sherwood Sugden and Company, 1983) pp. 51-53, 56-59. Also see above, note 45.

72. John Paul II, Message to the Pontifical Academy of Sciences (October 22, 1996), no. 5. Reprinted in *First Things* 71 (March 1997), pp. 28-29. See Dennis Bonnette, *Origin of the Human Species* (Amsterdam/Atlanta, Georgia: Editions Rodopi, 2001), pp. 69-74.

73. One might note that the explanatory power of the idea of natural selection is more limited than some of its advocates suppose. "Natural selection...we now know is the explanation for the existence and apparently purposeful form of all life" (Dawkins, *The Blind Watchmaker*, p. 5). Neo-Darwinians explain biological evolution in terms of the "causal mechanism" of natural selection preserving favorable genetic mutations which occur randomly and are transmitted reproductively to subsequent generations. Natural selection operating on random genetic variations, however, does not explain the *original* reproductive mechanism by means of which genetic information is transmitted to offspring. For the neo-Darwinian process of natural selection could not have begun without the original reproductive mechanism. This point is made by Peter Geach, "An Irrelevance of Omnipotence," *Philosophy* 48 (1973), p. 330. Also see Bonnette, *Origin of the Human Species*, pp. 1-2; Brooke and Cantor, *Reconstructing Nature*, p. 162. Thus, the *origin* of self-replicating life forms stands in need of an explanation beyond the compass of the neo-Darwinian synthesis, although not necessarily outside the purview of natural science. Compare Brooke and Cantor, p. 162.

74. Concerning global teleology, see Aquinas, *Summa theologiae*, I-II, q. 1, a. 2; *De veritate*, q. 5, a. 2, *corp.*

[E]volution admits to no obvious purpose or single goal, just like human history. History, like evolution, seems to occur without divine guidance. ... [M]ankind's appearance on this planet was *not* preordained, ... we are here not as the products of an inevitable procession of evolutionary success, but as an afterthought, a minor detail, a happenstance in a history that might just as well have left us out.<sup>75</sup>

Evolution is a natural process, and natural processes are undirected. Even if God can intervene in nature, why should He when nature can do a perfectly fine job of achieving His aims all by itself? ... The notion that God had to act ... directly to produce us [human beings] contradicts not only the scientific evidence of how our species arose, but even a strictly theological reading of history.<sup>76</sup>

New [human] individuals do not spring, like Athena, from the minds of gods ... our origins as individuals come *entirely* from the materials of life.<sup>77</sup>

Miller sees no reason for concern on the part of Christians, for he dismisses the classical religious doctrines of divine providence and foreknowledge as essentially incompatible with human freedom.<sup>78</sup> *Pace* Miller, however, learned Christian scholars have affirmed these classical doctrines without denying the truth of free will; they admit no logical incompatibility between these doctrines and human freedom.<sup>79</sup>

What is one to infer from the foregoing? At the very least, it is not obvious how Miller can reconcile his Catholic faith with his repudiation of divine providence. Belief in a *finite* deity, of course, would lend considerable support to Miller's confident rejection of the classical religious doctrine of divine providence.<sup>80</sup> The alleged incompatibility between that doctrine and the affirmation of human freedom, however, is hardly confirmed in the light of a sound philo-

75. Miller, *Finding Darwin's God*, pp. 237, 272. Also see *ibid.*, pp. 238-39. Compare Brooke and Cantor, *Reconstructing Nature*, pp. 163-64.

76. Miller, *Finding Darwin's God*, p. 244.

77. *Ibid.*, p. 250 (emphasis added).

78. *Ibid.*, pp. 233-39, 241. On Darwin's rejection of divine providence in favor of natural selection, see F. F. Centore, "Faith and Biological Reductionism: Darwin as a Religious Reformer," in *Science and Faith*, ed. Gerard V. Bradley and Don DeMarco (South Bend, Indiana: St. Augustine's Press, 2001), pp. 50-67.

79. For instance, David B. Burrell, "Jacques Maritain and Bernard Lonergan on Divine and Human Freedom," in *The Future of Thomism*, ed. Deal W. Hudson and Dennis Wm. Moran (Notre Dame, Indiana: University of Notre Dame Press, 1992), pp. 161-68; above, note 66; below, note 87. What Miller needs is a properly metaphysical understanding of the analogy of causality, which can address both primary and secondary causes. A physical theory of efficient causality will not suffice.

80. For a concise articulation of this doctrine, see Aquinas, *Summa theologiae*, I, q. 22; Maurice R. Holloway, S.J., *An Introduction to Natural Theology* (New York: Appleton-Century-Crofts, Inc., 1959), pp. 362-80.

sophical theology in which God is conceived as pure, Self-subsistent Act.<sup>81</sup> It is not my intention to suggest that the philosophic problem of human freedom vis-à-vis divine providence and eternal foreknowledge is easily resolved, particularly since much has been written on this fundamental question.<sup>82</sup> I simply wish to point out that Miller's facile dismissal of the classical religious doctrines of divine providence and eternal foreknowledge is objectionable on various grounds, and it exposes a dearth of philosophic and theological erudition, the sort of erudition evinced in the Thomistic corpus.<sup>83</sup>

In the last analysis, Miller's conception of God is a rather curious hybrid. On one level, the level of ordinary experience, his quest for the divine terminates in deism, which allows no place for the providential Creator and Father affirmed within the Judeo-Christian tradition. On another level, however, the level of subatomic phenomena, Miller's conception of God is the product of process theology, a conception in which omnipotence and eternal foreknowledge are not counted among the divine attributes.

If all power is on God's side, what powers are assignable to humanity? ... But if omnipotence is defended, and everything that happens is God's will, then God is responsible for evil and suffering and God's goodness is compromised.<sup>84</sup>

If one embraces the traditional faith of Christian thinkers such as Augustine of Hippo, Anselm of Canterbury, or Thomas Aquinas, one will find the

81. Aquinas, *Summa theologiae*, I, q. 3, a. 1, *corp.*; a. 4; q. 75, a. 5, ad 4.

82. See, for instance, Wippel, *Metaphysical Themes in Thomas Aquinas*, pp. 243-70. This problem cannot but appear logically insoluble apart from a sound philosophic conception of divine causality, although developing such a conception is an arduous undertaking.

83. For example, Aquinas, *Summa theologiae*, I, q. 13, a. 7; q. 14, a. 13; q. 19, a. 8; q. 22, a. 4; q. 105, a. 4.

84. Miller, *Finding Darwin's God*, p. 241. This passage is a quotation taken from Barbour, *Religion and Science*, p. 308. Compare Brooke and Cantor, *Reconstructing Nature*, pp. 162-65. The view that "God might have deliberately set limits to omnipotence by choosing to work through natural agencies rather than override them" (*Reconstructing Nature*, p. 165) misses the mark, for it assumes a physical theory of causality. On the contrary, the *universal* operation of the primary cause in secondary causes exhibits and perfectly accords with God's omnipotence. Compare Aquinas, *Summa theologiae*, I, q. 105, a. 5.

85. A far more exalted notion of God is articulated in, for instance, the magisterial work of Michael Dodds, O.P., *The Unchanging God of Love* (Fribourg, Suisse: Editiones Universitaires, 1986). This critical study provides an incisive analysis of the concept of God espoused by proponents of process theology. Also see Robert Sokolowski, *The God of Faith and Reason: Foundations of Christian Theology* (Washington, D.C.: The Catholic University of America Press, 1982; reprint, 1995), pp. 1-30.

terminus of Miller's search for God disappointing.<sup>85</sup> Moreover, Miller's failure to achieve a convincing integration of faith and reason in *Finding Darwin's God* should hardly be surprising in view of his questionable subordination of religion to science. Readers interested in finding a wholesome integration of faith and reason at the boundaries of natural science and theology would do well to search elsewhere.<sup>86</sup>

### Conclusion

While Dembski does not seem to grasp clearly God's absolute transcendence, Miller does not fully appreciate the immanence of God's omnipresent power in both natural processes and human freedom.<sup>87</sup> Ironically, although these two Christian writers consider themselves to be on opposite sides of the religious and scientific debate over God and evolution, Dembski and Miller share a basic but problematic assumption. In different ways, both writers conceive of God in terms of an extremely powerful but finite (secondary) cause.<sup>88</sup> The identification of this secondary cause with the omnipotent God of the Judeo-Christian tradition, however, is not without profound consequences. Miller, of course, would not retain the doctrine

86. For instance, in addition to the works of Mariano Artigas and Stanley Jaki cited above, see William E. Carroll, "The Scientific Revolution and Contemporary Discourse on Faith and Reason," in *Faith and Reason*, ed. Timothy L. Smith (South Bend, Indiana: St. Augustine's Press, 2001), pp. 195-216; Charles J. Chaput, "Alpha and Omega: Reconciling Science and Faith," in *Science and Faith*, pp. 1-11; Pierre Conway, O.P., *Faith Views the Universe: A Thomistic Perspective*, (Lanham, Maryland: University Press of America, 1997); Stanley L. Jaki, *Bible and Science* (Front Royal, Virginia: Christendom Press, 1996). Readers interested in a much broader treatment of the question of integration of faith and reason may wish to consult John Paul II, *Fides et ratio*, <http://www.ewtn.com/library/ENCYC/JP2FIDES.HTM> (September 14, 1998), or the collection of essays edited by David Ruel Foster and Joseph W. Koterski, S.J., *The Two Wings of Catholic Thought: Essays on Fides et Ratio* (Washington, D.C.: Catholic The University of America Press, 2003).

87. On the integration of the notions of primary and secondary causality within the natural order, see Aquinas, *Summa theologiae*, I, q. 105, aa. 1-7; Artigas, "The Mind of the Universe: Understanding Science and Religion," pp. 118-21; *The Mind of the Universe*, pp. 145-56, 324-34. For a concise but interesting historical account of competing views of causation, see John Henry, "Causation," in *Science & Religion: A Historical Introduction*, pp. 130-41. One might add that the failure to see that the creative agency of the primary cause is simultaneously immanent and transcendent is not uncommon. "Darwin, to his credit, had sharpened up the choice: it was a question now of all or nothing. God was an active participant, immanent in the world, or completely absent" (Brooke and Cantor, *Reconstructing Nature*, p. 165). Of course the divine transcendence should not be construed along deistic lines of thought, which presupposes a physical theory of causality (see above, note 66).

88. See above, note 66.

of divine omnipotence, for he does not see how it could be reconciled with the affirmation of human freedom.<sup>89</sup> But eliminating the divine attribute of omnipotence is not obviously consistent with retaining the metaphysical distinction between primary and secondary causality, a distinction implied by the metaphysical and theological doctrine of creation *ex nihilo*, as no natural cause could serve as the universal efficient cause of being (*id quod est*) qua being (*id quod est*).<sup>90</sup>

What writers like Dembski and Miller need to develop is a sound and robust philosophical theology.<sup>91</sup> In the light of such a theology, Dembski might begin to reconsider the scientific merit of design theory, and Miller might begin to appreciate that any evolutionary theory compatible with classical theism as propounded within the traditional Abrahamic faiths is poorly served by any neo-Darwinian theory based on philosophical materialism. If we devote sufficient time to the development of an adequate philosophical theology fundamentally different from the inherently problematic physico-theology favored by proponents of design theory, and if we strive to avoid the error of reducing evolutionary theory to neo-Darwinism—an error that permeates the content of the PBS documentary on evolution and that is perpetuated in countless schools throughout the country<sup>92</sup>—we will thereby find

89. Miller's difficulty arises from an understanding of divine omnipotence based on a physical theory of efficient causality, a theory reflected in his view of divine action and influence at the level of quantum events. A metaphysical theory of efficient causality, however, is presupposed by any adequate defense of the good or perfection of *participated* freedom of intelligent secondary causes (compare Aquinas, *Summa theologiae*, I, q. 4, a. 2, *corp.*). The spiritual freedom possessed by these participated agents, who are images of the primary (or unparticipated) cause (*Summa theologiae*, I, q. 93, a. 1), could not be sustained on the basis of a finite divine exemplar. And, if Miller is correct, God is nothing more than a finite divine exemplar.

90. See James F. Anderson, *The Cause of Being: The Philosophy of Creation in St. Thomas* (St. Louis, Missouri: B. Herder Book Co., 1952). Apart from the doctrine of creation *ex nihilo*, one cannot develop an adequate metaphysical doctrine of the One Who Is—Self-subsisting *Esse*. Various writers have discussed the conception of God I have in mind. E.g., Sokolowski, *The God of Faith and Reason*, pp. 8-10, 41-51; David B. Burrell, *Knowing the Unknowable God* (Notre Dame, Indiana: University of Notre Dame Press, 1986), pp. 19-34, 92-108. Compare Aquinas, *Summa theologiae*, I, qq. 3 and 44.

91. In pursuing this goal, one might begin by consulting the 1999-2000 Gifford Lectures delivered by McInerny, *Characters in Search of Their Author*.

92. Consider, for instance, the following remark: "Darwin's vision has expanded to encompass a new world of biology in which the links from molecule to cell and from cell to organism are becoming clear. *Evolution* prevails, but it prevails with a richness and subtlety *its originator* may have found surprising, and in the context of developments in other sciences he could not have anticipated" (Miller, *Finding Darwin's God*, p. 290; emphasis added). Despite such imprecise locutions, Miller is aware that neo-Darwinism is but one

ourselves better situated to overcome the unnecessary conflicts that frequently surface at the boundaries between scientific and theological discourse. We can then begin to strengthen the cultural bonds of social intercourse in the hope of attaining a more fruitful union of minds in pursuit of an increasingly profound understanding of the truth of participated beings and their metaphysically simple efficient cause.<sup>93</sup>

(currently dominant) species of evolutionary theory. One should avoid eliding the distinction between species and genus, especially in this case. For the failure to distinguish between neo-Darwinism and evolutionary theory is partly to blame for the hostile attitude of many toward *any* theory of biological evolution.

93. See Aquinas, *Summa contra gentiles*, Bk. I, chap. 18.