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# THE CREATION

## Intelligently Designed or Optimally Equipped?

HOWARD J. VAN TILL

### THE SHAPING OF QUESTIONS AND STRATEGIES

#### *Matters of Heritage and Context*

**E**ach of the contributions to this issue of THEOLOGY TODAY has a focus of concern that has been influenced by the author's particular intellectual and spiritual odyssey. My own concerns and priorities have developed in the North American context, in which an attitude of antagonism and mutual mistrust has developed between two important portions of the population: the intellectual/scientific community and the more conservative portion of the Christian community.<sup>1</sup> On the one hand, a large portion of the Christian community has come to adopt a very skeptical attitude toward the results of scientific theorizing regarding the formational history of the universe—theorizing that appears to contradict certain beliefs derived from a particular reading of the biblical text. On the other hand, a large portion of the scientific community has assumed an equally skeptical attitude toward Christianity, in part because the Christian faith is so frequently identified with some form of episodic creationism—a concept of the universe's formational history that is at odds with natural science's reading of the empirical evidence.

Within this North American context, my own theological roots extend deeply into the soil of the Calvinist heritage, especially as it has been

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<sup>1</sup>The term *conservative* has many meanings. As employed here, the term is meant to call attention to that substantial portion of the North American Christian community that places great emphasis on the role of the biblical text in providing clear, fixed, and normative answers to a broad spectrum of questions, including questions regarding the character and timetable of the creation's formational history. The early chapters of Genesis, for instance, would be viewed as a concise chronicle of particular divine acts by which God brought into being new physical, astronomical, geological, and biotic forms—a faithful reading of the text that must be conserved over against the challenges of modern evolutionary science.

expressed in the Netherlands. The names of Abraham Kuyper, Herman Bavinck, and Louis Berkhof can still be heard in our denominational discourse. From childhood on, most of us were taught to place high value on thoughtfully-articulated theological principles and well-examined philosophical foundations. We were taught by example to look beneath the superficial details of an issue and to examine the presuppositions on which a particular position was founded.

Given that background, as soon as I became familiar with the resurgent creation/evolution debate I had the sense that there was something radically wrong about it and I began to puzzle over just what its shortcomings might be. That puzzlement, along with an intense interest in the natural sciences, ultimately led to my becoming deeply involved, as a Christian trained in physics, in reflections on the character of the creation and of God's creative action.

One of the more obvious shortcomings of the common creation/evolution debate is evident when it is framed as a simple either/or choice between only two comprehensive positions: "episodic creationist theism" and "evolutionary naturalism." Before dealing with the substance of the issues, let me here clarify my use of some important terminology. By *episodic creationist theism* (often called *special creationism* and often presented as entailing a commitment to an Ussher-style, young-earth chronology), I mean to denote the belief that the formation of certain physical structures and life forms now found in the creation was accomplished by occasional episodes of extraordinary divine action in which God imposed those structures and forms on matter. The term *naturalism* will be used in this essay to represent the comprehensive, atheistic worldview based on the presumption that the natural world is all there is. In this worldview, nature is presumed to be a self-existent and closed system that requires no transcendent Creator to act as the source of its being and leaves no opportunity for divine action of any sort within it. More specifically, the term *evolutionary naturalism* here denotes a naturalistic worldview in which the scientific concept of evolutionary development in the formational history of the universe is taken to play a major role in warranting its credibility over against episodic creationist theism.

Presented as a simple either/or choice, the creation/evolution debate suffers the fatal flaw commonly called "the fallacy of many questions." The issue under debate is very broad in scope and includes a lengthy list of questions that span a diversity of categories—scientific methodology, empirical evidence, interpretive strategies, metaphysical presuppositions, theological principles, faith commitments, and the like. However, each of the two contestants in the debate—episodic creationism and evolutionary naturalism—brings but one package of answers to this long list of categorically diverse questions and demands that its package be adopted in its entirety at the exclusion of the other. Such a demand is, of course, grossly unfair. Answers to each of the many questions at issue deserve to be evaluated on their own terms, not to be presented as non-negotiable components of some "no-options package deal."

*The Return of Paley's Argument from Design*

Recognizing the shortcomings of young-earth episodic creationism and yet desiring to offer a theistic perspective that would be apologetically effective in theism's engagement with evolutionary naturalism, some Christians have become proponents of an approach they wish to call "intelligent design theory."<sup>2</sup> The basic strategy of the intelligent design movement is as follows: Select and consider, in the light of information drawn from the natural sciences, specific life forms and biotic subsystems. Ask the question, "Can one now, with the science of the day, construct a complete and credible account of how that particular life form or biotic subsystem first came to be actualized in a Darwinian gradualist fashion?"<sup>3</sup> If not, the intelligent design theorists argue, then it must be the outcome, not of mindless, purposeless, naturalistic, evolutionary processes, but of "intelligent design." The precise meaning of "intelligent design" is not always apparent, but it most often entails the combination of *both* thoughtful conceptualization *and* the first assembly of a new form by extra-natural means.

In contrast to the young-earth episodic creationist movement with its transparently inadequate treatment of both the biblical text and empirical

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data, this particular form of skepticism toward evolution demands a more careful critique, some of which will appear later in this essay. As I engage in discussion, both formal and informal, with Christians in search of a defensible position somewhere in the vast conceptual space between young-earth creationism and evolutionary naturalism, I find that many Christians, some scholars included, find the argumentation of intelligent design proponents to be very attractive. My own measure of that position is mixed—positive in regard to some of its elements, negative in regard to others. With them, I reject young-earth creationism for numerous biblical, theological, and scientific reasons. And with them, I reject evolutionary naturalism because of its denial of a Creator-God. However, in contrast to

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<sup>2</sup>Representative literature written from this perspective includes books by law professor Philip E. Johnson, *Darwin on Trial* (Downers Grove: InterVarsity, 1991) and *Reason in the Balance* (Downers Grove: InterVarsity, 1995); an essay collection edited by philosophy professor J. P. Moreland, *The Creation Hypothesis* (Downers Grove: InterVarsity, 1994); and the book, *Darwin's Black Box* (New York: The Free Press, 1996) by biochemist Michael J. Behe. A list of active intelligent design proponents would also include Stephen Meyer, Paul Nelson, and William Dembski.

<sup>3</sup>In *Darwin's Black Box*, Behe further restricts the science of the day to the conceptual vocabulary of biochemistry.

the proponents of intelligent design, I find no warrant for rejecting the possibility (or, stated more strongly, the likelihood) that the creation has been gifted with all of the self-organizational and transformational capabilities needed to make something like the macroevolutionary scenario viable. In fact, I have argued elsewhere that I find a great deal of encouragement for envisioning such a robustly gifted creation in early Christian writings, especially in the reflections of Augustine on the early chapters of Genesis.<sup>4</sup>

### *The Goal of Articulating a Well-informed Faith*

In all of my reflections on the character of the creation and on divine action within it, my goal is to articulate a perspective that is at once faithful to historic Christian doctrine and well-informed by the natural sciences. Given the way in which the North American community continues to puzzle over both the credibility and the theological relevance of evolutionary theorizing, I continue to search for ways in which faithful Christians might perceive the fruits of divine action expressed in the course of creation's formational history. In so doing, my strategy is twofold: (1) to encourage the conservative Christian community to re-examine its concept of divine creative action and to develop a more appreciative attitude toward scientific investigation regarding the creation's gifts for self-organization and transformation, and (2) to encourage persons outside of the Christian faith to consider a contemporary articulation of historic Christianity that welcomes the fruits of scientific theorizing performed with procedural competence, professional integrity, and intellectual humility.

One of the hazards of this approach is that each of the two communities being addressed is inclined to perceive the message as a threat to its own apologetic strategy. If episodic creationist theism, for instance, perceives its defense of the Christian faith to depend on demonstrating the need for episodes of special creation in the formational history of the universe, then any encouragement to consider evolutionary continuity as an acceptable possibility will appear to constitute a call to "give away the store." And if the proponents of evolutionary naturalism take comfort in their belief that the defeat of episodic creationism constitutes a lasting victory over all forms of Christian theism, then any encouragement to consider the viability of an evolving creation perspective will be viewed as an unwelcome threat to the simple either/or format of the creation/evolution debate. Herein lies a deep irony of the debate: The two diametrically opposed parties—episodic creationism and evolutionary naturalism—agree to promote the idea that a simple either/or debate is meaningful.

## THE FORMATIONAL ECONOMY OF THE UNIVERSE

### *The Need for a Reexamination of Fundamental Questions*

In spite of the numerous shortcomings of the creation/evolution debate, it does stimulate us to re-examine some profoundly important questions.

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<sup>4</sup>Howard J. Van Till, "Basil, Augustine, and the Doctrine of Creation's Functional Integrity," in *Science and Christian Belief* 8 (1996) 21–38.

For example: In the awareness of what has been learned through modern scientific investigation regarding the manner and history of creaturely action, how might we now speak about the character of divine creative activity and about our apprehension of it? What does God, specifically in the role of Creator, do? And how do we come to be aware of the Creator's action? What are its distinguishing marks? Focusing on the diverse phenomena that comprise the formational history of the Creation, how might we distinguish between the Creator's action and the action of creatures in the actualization of novel structures and life forms in the course of time?

Although there is within the Christian community a diversity of concepts concerning divine action, I presume that there would be general agreement on at least the following propositions regarding God's action as Creator: (1) that as Creator, God gave being to the creation "in the beginning"—often taken to be the beginning of time as we know it; and (2) that God continues to sustain the creation in its being from moment to moment. Were God to cease acting as Creator, the creation would not merely decline in some quality, but it would cease to be. In other words, historic Christian theology sees the existence of the universe to be radically dependent on God's creative action at all times, at this moment no less than at the first moment of its existence. What has traditionally been taken to be the evidence for this creative action? Quite simply, the existence of ourselves and the creation of which we are members. If no Creator, then no creation. In the context of a theistic worldview, the evidence of divine creative action is both obvious and undeniable—we are here.

But there are, of course, alternatives to this line of thought. Naturalistic worldviews, for instance, presume that the universe is self-existent and needs no Creator to serve as the divine Source of its existence. In the context of a commitment to naturalism, then, the existence of the universe is evidence only for the existence of the universe—nothing more to be said. Fortunately for us, it might be argued, the universe happens to exist and we are in it. Furthermore, in the more specific context of *evolutionary* naturalism, the universe that happens to exist also happens to satisfy all of the requisite conditions and to possess all of the requisite capabilities—a truly astounding list, we are beginning to realize—to make possible our formation in time from the more elementary units of matter present in the early universe. We are here, says naturalism, not as the outcome of a Creator's intention, but by a remarkable fortuity.

What rejoinder does Christian theism have against these bold assertions of naturalism? What apologetic strategy, for instance, would effectively engage evolutionary naturalism and, presumably, defeat its claims that we are nothing more than amusing artifacts of the self-organizational powers that the universe just happens to possess? One of the most commonly employed strategies among conservative North American Christians is to counter by asserting that the type of evolutionary development of life forms that evolutionary naturalism presumes to be possible did not, in fact, occur. Why not? Because, it is argued, such continuous formational

development is, in actuality, impossible. And if evolution is impossible, then evolutionary naturalism is false and episodic creationist theism, the only other possibility offered in the creation/evolution debate, must be true.

From this formulation (I would classify it as a tragic misformulation) of the issue proceeds the familiar shouting match between episodic creationist theism and evolutionary naturalism. A considerable portion of the debate has been carried out in the court of scientific theorizing and has focused on whether the empirical evidence favors (1) the concept of evolutionary continuity in the formational history of all inanimate structures and life forms, or (2) the concept of radical discontinuities of the sort that could be bridged only by episodes of special creation or of intelligent design. Once the issue is framed in this way, a peculiar—and, I would argue, inverted—scoring system falls into place: Evidence for the functioning of natural processes that make unbroken evolutionary continuity appear plausible is credited to evolutionary naturalism, while the credibility of Christian theism, on the other hand, appears to depend on the absence or inadequacy of certain natural form-producing processes. This apologetic strategy places some Christian scientists in the awkward position of looking for evidence that God has withheld from the creation certain crucial capabilities for self-organization or transformation so that macroevolutionary continuity would be impossible. Searching for evidence of gifts withheld from the creation strikes me as precisely the opposite of what the enterprise of Christian scientific scholarship ought to be doing.

### *An Important Definition*

In order to see more clearly what the underlying issues are, I have found it helpful to define a concept that I call the “formational economy” of the universe. By the *formational economy of the universe* I mean the set of all of the dynamic capabilities of matter and material, physical, and biotic systems that contribute to the actualization of both inanimate structures and biotic forms in the course of the universe’s formational history. Special attention would be drawn to capabilities for self-organization and transformation.

Elementary particles called quarks, for instance, possess the capabilities to interact in such a way as to form nucleons (protons and neutrons). Nucleons, in turn, have the capacities to interact and organize, by such processes as thermonuclear fusion, into progressively larger atomic nuclei. Nuclei and electrons have the dynamic capability to interact and organize into atoms. On the macroscopic scale, vast collections of atoms interact to form the inanimate structures of interest to astronomy—galaxies, stars, and planets. On the microscopic scale, atoms interact chemically to form molecules; molecules interact to form more complex molecules. Some molecular ensembles are presumed to possess the capabilities to organize into the fundamental units that constitute living cells and organisms. Organisms and environments interact and organize into ecosystems. All of these organizational and transformational capabilities together comprise the *formational economy* of the universe.

*The Robust Formational Economy Principle*

With this concept defined and named, I believe that we can now approach questions regarding the formational history of the creation in a way that will allow us to rise above the self-perpetuating din of the usual creation/evolution debate. I would begin by posing the question, “What is the character or scope of the creation’s formational economy?” More specifically, is the formational economy of the universe sufficiently robust (that is, does it possess all of the requisite capabilities) to make possible the actualization in time of all of the inanimate structures and biotic forms that have ever existed? The natural sciences, as now practiced, presume the answer to be, “Yes.” Furthermore, the manner of historical actualization is judged to entail an unbroken continuity of increasingly complex and diverse life forms.

On the other hand, a substantial portion of the North American Christian community presumes the answer to our question to be, “No.” Episodic creationism, for instance, is well known for its insistence not only that its concept of special creation episodes is a “clear teaching” of the Bible (conveyed unambiguously by its inerrant text) and one of the fundamental “deliverances of the faith,” but also that unbroken evolutionary continuity is physically impossible. Strategies for warranting such beliefs vary considerably, but the claim that evolutionary continuity is impossible is ordinarily grounded in an appeal (by what standards is another question) to the empirical evidence.

Typical argumentation purporting to take a person from empirical evidence to an episodic creationist conclusion would include the following: (1) The fossil record fails to support the idea of Darwinian gradual development of new forms. On the contrary, it is argued, it supports the concept of the “sudden appearance” of new “kinds” of creatures, just as the Bible would lead a faithful reader to expect. (2) The second law of thermodynamics precludes the development of more complex organisms from simpler forms of life or the development of any life form from non-living matter; a variant on this argument would be to assert that the second law precludes the spontaneous generation of the “new genetic information” that any novel life form would necessarily require. (3) The only kind of genetic transformation that can be demonstrated empirically is variation within biblical “kinds,” and there is no empirical warrant for extrapolating from these microevolutionary variations to the full-scale macroevolutionary transformation presumed possible by contemporary biology. (4) Finally, according to some proponents of intelligent design theory, it is now possible to point to specific life forms and biotic subsystems that could not possibly have come to be assembled by “natural” means.<sup>5</sup>

One common theme in these and other episodic creationist or intelligent design theorist appeals to empirical science is that it is possible to identify

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<sup>5</sup>For an example of this type of argumentation see Behe’s book, *Darwin’s Black Box*.

notable gaps in our knowledge about the formational history of the universe. On that point, we must agree. There are indeed *epistemological* gaps to which the episodic creationists and intelligent design theorists can call attention. We do *not* now have the scientific competence to say in full detail and with certainty just how each form of life came to be actualized in the course of time. We do *not* know precisely what role each creaturely capability for self-organization or transformation has played in actualizing the diversity of life forms and biotic subsystems that we now see. Even more seriously, we *cannot* now demonstrate the sufficiency of known creaturely capabilities to make the full macroevolutionary scenario of unbroken genealogical continuity possible. Thus, the episodic creationist is technically correct in saying that there are epistemological gaps of the sort that stand in the way of natural science saying that a detailed theory of biotic evolution has been “proved” in the strict, logical sense of the term.

But the “provability” of a particular evolutionary scenario is not, in fact, the issue. The truth is, as philosophers of science have long been reminding us, that *all* scientific theories are necessarily underdetermined by the empirical data. The word, “proof,” in the strict, logical sense, has no place in the world of scientific theory evaluation. There will always be more than one possible scientific account for any natural phenomenon. Epistemological gaps and the unprovability of scientific theories are permanent features of the scientific landscape. The goal of scientific theorizing is not to prove, by appeal to empirical data and unassailable logic alone, one theory correct and all others false. Rather, the goal is to construct a theoretical account that is, in the context of all relevant empirical data at hand and within the bounds of certain presuppositions regarding the character of the universe and its formational history, the most adequate account conceivable at a particular time.

One of the questions of the moment, then, concerns the status of those epistemological gaps. In the context of theorizing about the formational history of the universe, contemporary natural science ordinarily presumes that these gaps in our knowledge could, in principle, be filled at some time in the future. The scientific community fully expects that further research will provide the basis for more adequate and comprehensive theories regarding the formational history of the universe and the life forms that inhabit it. One of the most basic—but seldom explicitly stated—presuppositions of the natural sciences, especially relevant to the formulation of theories regarding the formational history of the universe, is that *the formational economy of the universe is sufficiently robust to make possible the actualization of all inanimate structures and all life forms that have ever appeared in the course of time*. I call this proposition the *robust formational economy principle*. In my judgment, it is not only one of the most fundamental presuppositions of the natural sciences but also the fundamental “sticking point” for a large portion of North American Christians in their assessment of evolutionary theorizing.



*The Role of Apologetics*

Why would this principle be seen as a sticking point? Why would it be perceived by millions of North American Christians as being incompatible, say, with Christian belief regarding God's creative action? Is it the case, for instance, that God might be incapable of giving being to a creation so richly gifted with formational capabilities? I would presume that the answer of all Christians would be, "Surely not!" We creatures would have to be arrogant beyond measure (an ever present danger) to declare God incapable of so gifting creation. What, then, is the basis for the widespread Christian rejection of the robust formational economy principle? One major reason for its rejection, as noted above, is the belief that the concept of episodic creation (which presumes the presence of substantial gaps in the creation's formational economy) is both a "clear teaching of the Bible" and a fundamental "deliverance of the faith."

But suppose a person were to set those "in house" concerns aside for the moment (important as they might be to many Christians). Suppose one wished to eschew any appeal either to Scripture or to widely-held Christian beliefs and sought instead to develop an apologetic strategy that appealed only to empirical evidence and sound reasoning, so that even a vocal proponent of naturalism would have to pay attention? This is, I believe, one of the principal goals of the contemporary intelligent design movement. Consequently, to ignore the role of apologetic considerations would be to close one's eyes to a major driving force for the movement.

Now, the goal of effective apologetic engagement with the preachers of naturalism is itself a noble one. However, it is imperative that the apologetic strategy employed in defense of the Christian faith be built on a foundation formed not by the preconceptions of naturalism but by the historic Christian theological heritage. Christian apologetic strategy must be shaped by foundational Christian theological commitments, not by the presuppositions of the opposition. The question is, then, what are the foundational theological propositions on which the intelligent design movement builds its case? Or, to entertain an even more problematic possibility, is their case built not on a consciously-examined theological foundation but simply as a reaction to the offensive naturalistic rhetoric of the day?

## **INTELLIGENT DESIGN THEORY AND ITS APOLOGETIC ENGAGEMENT WITH EVOLUTIONARY NATURALISM**

*The Naturalistic Challenge*

If contemporary intelligent design theory does function primarily as an apologetic reaction to naturalism, what is the nature of the challenge to which it is responding? Specifically, what is the most common form in which the naturalistic challenge to belief in a Creator is presented, and what is the particular concept of divine creative action that it presumes to discredit?

Perhaps the best way to answer this question is to look at an example of the rhetoric of evolutionary naturalism—rhetoric that elicits from many Christians not only an intensified antagonism toward naturalism but also the presumption that ownership of the robust formational economy principle should be ceded to that atheistic worldview. The recent book, *Darwin's Dangerous Idea*,<sup>6</sup> by philosopher Daniel C. Dennett, provides a more than ample supply of such rhetoric.

Dennett focuses much of his attention on the matter of “design.” How do things that we see in the world around us, especially living things, he asks, come to exhibit *design*, whether in their internal workings or in their adaptation to the peculiarities of some natural environment? The term “design,” as Dennett employs it, functions most commonly as the generic category for any feature of the world, especially of its life forms, that is likely to give an observer the impression (by Dennett’s measure, a false impression) of being the outcome of an intentional action by an intelligent agent, such as one would recognize in “a cleverly designed artifact” of human craftsmanship.

Dennett is especially critical of the eighteenth-century style of natural theology with its apologetic strategy of arguing from claims (stated in the conceptual vocabulary of the natural sciences) for the empirical detection of “design” in the universe to the (religiously significant) conclusion of the existence of a Designer.

The overwhelming favorite among purportedly scientific arguments for religious conclusions, then and now, was one version or another of the Argument from Design: among the effects we can objectively observe in the world, there are many that are not (cannot be, for various reasons) mere accidents; they must have been designed to be as they are, and there cannot be design without a Designer; therefore, a Designer, God, must exist (or have existed), as the source of all these wonderful effects.<sup>7</sup>

It is, I believe, important to note here that the concept of “Designer,” as it was most commonly employed in the eighteenth century by clergyman William Paley and others, was based on the artisan metaphor. One person, the artisan, did both the conceptualization and the construction of what was intended. Paley’s watchmaker, for instance, did both the planning and the fabrication of the watch. Paley’s Designer (like his watchmaker) was taken to possess both a mind (to conceptualize, or intend) and the divine equivalent of “hands” (the power to manipulate raw materials into the intended form).

The design concept under Dennett’s critical scrutiny entails not only the claim that thoughtful conceptualization would be required for a particular sort of outcome but also the presumption that the actualization of what was first conceptualized would require the action of an “intelligent” agent

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<sup>6</sup>Daniel C. Dennett, *Darwin's Dangerous Idea* (New York: Touchstone, 1995). For a more extensive critique of this work see my essay, “No Place for a Small God,” in *How Large is God?*, ed. John Marks Templeton (Philadelphia: Templeton Foundation, 1997).

<sup>7</sup>Dennett, *Darwin's Dangerous Idea*, 28.

capable of imposing structure or form on relatively inert materials—at least on materials not equipped with the requisite capabilities for self-organization or transformation into the conceptualized form. Typical of the rhetoric offered by proponents of triumphalist naturalism, Dennett rejects the need for either of these two elements. What appears in nature to be designed, according to Dennett, requires neither thoughtful conceptualization nor extra-natural assembly.

The need for thoughtful conceptualization is dismissed by Dennett with facile ease simply by presuming that one can take for granted the self-existence of a universe complete with a robust economy of formational capabilities. Questions regarding the need for extra-natural assembly are handled in a somewhat more reasoned manner. Here Dennett calls upon the natural sciences and their growing awareness of the powers for self-organization and transformation that contribute to the formational economy of the universe. Presuming the robust formational economy principle to be warranted, Dennett forcefully rejects the “Handicrafter-God” of both episodic creationism and the argument from design. He characterizes such approaches as ill-conceived attempts to inject supernatural explanations into circumstances where natural explanations would suffice. In Dennett’s colorful metaphor, he sees no need to appeal to a “skyhook” (the top-down action of some higher power) when a “crane” (the bottom-up action of some extant natural mechanism) is able to do the job of lifting a biotic system to new heights of configurational complexity:

The skyhook concept is perhaps a descendant of the *deus ex machina* of ancient Greek dramaturgy: when second-rate playwrights found their plots leading their heroes into inescapable difficulties, they were often tempted to crank down a god onto the scene, like Superman, to save the situation supernaturally. . . . [A] *skyhook* is a “mind-first” force or power or process, an exception to the principle that all design, and apparent design, is ultimately the result of mindless, motiveless mechanistic. A *crane*, in contrast, is a subprocess or special feature of a design process that can be demonstrated to permit the local speeding up of the basic, slow process of natural selection, *and* that can be demonstrated to be itself the predictable (or retrospectively explicable) product of the basic process.<sup>8</sup>

What, then, is the essence of the naturalistic challenge? As I read Dennett, whose perspective I find to be representative of modern evolutionary naturalism, the thrust of his challenge to theism is this: *If there are no gaps in the formational economy of the universe, then what need is there for a Creator?* Implicit in this challenge is the presumption that, in order to establish the need for a Creator, one would have to demonstrate that the actualization (assembly from constituent parts) of some particular structures or life forms could have been accomplished only by an irruptive divine act. What is being challenged most specifically here is the interventionist concept of divine creative action in the formational history of the universe—the idea that certain novel life forms or “irreducibly complex”

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<sup>8</sup>Ibid., 74, 76.

biotic subsystems could have come to be actualized only as the outcome of a form-imposing divine intervention.<sup>9</sup>

*Is Divine Intervention Necessary for the Universe's Formational Development?*

Dennett's "hit list"—composed of those belief systems that he presumes will collapse under the weight of his attack—includes episodic creationism and intelligent design theory, both of which presume that the robust formational economy principle is not warranted and that material, physical, and biotic systems do not have the requisite capabilities to make macroevolutionary continuity possible. His strategy is to argue that what is taken by theists to be evidence of design (especially in the sense of manifesting some quality of form that could have been assembled only by extra-natural means) has been grossly misread. From Dennett's perspective, those qualities of form are the product, not of divine imposition, but of natural *algorithmic processes*—material, physical, and biotic processes whose outcome, no matter how complex in appearance, proceeds from the actions of basic material units (atoms, molecules, cells) behaving in accordance with relatively simple rules.

Here, then, is Darwin's dangerous idea: the algorithmic level is the level that best accounts for the speed of the antelope, the wing of the eagle, the shape of the orchid, the diversity of species, and all the other occasions for wonder in the world of nature. . . . No matter how impressive the products of an algorithm, the underlying process always consists of nothing but a set of individually mindless steps succeeding each other without the help of any intelligent supervision. . . .<sup>10</sup>

No "intelligent supervision" is necessary, says Dennett. No episodes of miraculous special creation in the course of time are needed in order to actualize novel forms. No imposition of form by an act of supernatural assembly is needed. Why not? Because the universe has all of the requisite capabilities for self-organization and transformation. There are no gaps in the formational economy of the universe. And, if no gaps, then what need for a Creator?

Why the emphasis on a gapless formational economy? Because what Dennett takes to be the "creationist" position is one that insists on the need for episodes of *special* divine creative action in order to bridge those presumed gaps. Dennett's attack is directed toward episodic creationists, well known for their resistance to the concept of a gapless formational economy and of evolutionary continuity.

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<sup>9</sup>Divine *intervention* is another term that has numerous meanings. In this context, it denotes the concept of an extraordinary divine act in which God directly causes members of the creation (atoms, molecules, cells, or organisms, for instance) to assume a configuration that they would not otherwise have been able to achieve by the employment of their ordinary capabilities for self-organization or transformation. Thus, divine intervention of this character is presumed to "make a difference" (a phrase commonly employed in the books by Phillip Johnson) of the empirically detectable sort.

<sup>10</sup>Dennett, *Darwin's Dangerous Idea*, 59.

The resistance comes from those who think there must be some discontinuities somewhere, some skyhooks, or moments of Special Creation, or some other sort of miracles, between the prokaryotes and the finest treasures in our libraries.<sup>11</sup>

For over a century, skeptics have been trying to find a proof that Darwin's idea just can't work, at least not *all the way*. They have been hoping for, hunting for, praying for skyhooks, as exceptions to what they see as the bleak vision of Darwin's algorithm churning away. And time and again, they have come up with truly interesting challenges—leaps and gaps and other marvels that do seem, at first, to need skyhooks. But then along have come the cranes, discovered in many cases by the very skeptics who were hoping to find a skyhook.<sup>12</sup>

*Is Divine Intervention Necessary for the Universe's Daily Functioning?*

There is something puzzling to me about the way in which empirical support functions in the strategy for warranting belief in the existence of gaps in the universe's formational economy. The bottom line in all appeals for empirical support for this belief is necessarily an argument of the following form: The first appearance of form X cannot at this moment be fully accounted for in terms of what we now know regarding the self-organizational or transformational capacities of material, physical, and biotic systems. This *epistemological* gap is then taken to be sufficient warrant for believing that there exists a corresponding *ontological* gap—the requisite formational capability is missing in the formational economy of the universe. There is, I believe, no way to escape the recognition that this is an appeal to ignorance in which one begins with the statement, "Given our present state of knowledge regarding natural processes, we do not know with certainty how form X could have been assembled by natural means," and then moves to the conclusion, "Therefore form X must have been assembled by extra-natural means."

Why am I puzzled by this strategy of warranting belief in ontological gaps by appeal to epistemological gaps? Mostly because of the inconsistency with which it is employed. To illustrate the inconsistency, suppose we were to define the *functional economy* of the universe to be the set of all active capabilities of material, physical, and biotic systems that contribute to the normal functioning of the universe at any time. Needless to say, this functional economy is no less impressive than the universe's formational economy. Just try to consider for a moment all of the properties and capabilities that the universe must possess in order for us to experience only one day of our life.

With that attempt under way, think of the following questions: Do we at this time know all of the elements of this functional economy? Can we now give a complete natural account of everything that material, physical, and biotic systems presently do? Given the obvious fact that we must confess some degree of ignorance in the face of both of these questions, are we

<sup>11</sup>Ibid., 136.

<sup>12</sup>Ibid., 75–76.

then, as Christians, inclined to claim that these epistemological gaps warrant the presumption of corresponding ontological gaps? Do we, as Christians, judge that we are warranted in presuming that God is daily bridging gaps in the functional economy of the creation with extraordinary divine action in order to effect outcomes that we do not yet fully understand in terms of creaturely action? Setting aside for the moment the question of occasional miraculous acts that God might choose to perform for special purposes, is extraordinary divine action also necessary for the daily operation of the creation? In other words, is extraordinary divine action really quite ordinary?

To the best of my knowledge, most Christians—including episodic creationists—would answer these questions in the negative. As far as the daily functioning of the universe is concerned, we see no need to jump from the recognition of our ignorance regarding numerous particular elements in the creation's functional economy to the conclusion that divine interventions are a necessary supplement to an inadequate set of creaturely actions. Or, to say it more formally, when we consider the creation's functional economy, we see no need to take epistemological gaps as conclusive evidence for the existence of corresponding ontological gaps. This leaves the question: If this move from epistemological to ontological gaps is not done in regard to the creation's *functional* economy, then why would one proceed in this manner in regard to the creation's *formational* economy? Why the inconsistency here?

Numerous reasons could be suggested, but it is difficult to assess their relative importance. Nonetheless, my personal judgment would be that a major contributing factor is the widespread belief that an episodic creationist picture of God's creative action is both a "clear teaching of the Bible" and one of the fundamental "deliverances of the faith." Beneath the surface of appeals to an empirical basis for belief in either episodic creation or intelligent design lies a set of beliefs (relatively unexamined, I suspect) regarding both biblical and traditional support for an interventionist concept of divine creative action. From this underlying concept of divine creative action proceeds the evidentialist apologetic strategy commonly employed in the debate with naturalism. It would seem, therefore, that the interventionist concept of divine creative action that prevails among the proponents both of episodic creationist theism and of evolutionary naturalism has set the unfruitful agenda of the contemporary creation/evolution debate. Hence, the importance of encouraging a theological reexamination of the concept of divine action in the physical world that is also the object of scientific scrutiny.

## THE OPTIMALLY-GIFTED CREATION PERSPECTIVE

### *Distinguishing Conceptualization from Actualization*

As I reflect upon the ongoing shouting match between proponents of evolutionary naturalism and of episodic creationist theism (or of intelligent design theory), I have come to the conclusion that any advancement in

understanding, especially of the historic Christian theological perspective, is unlikely unless both parties agree to distinguish between the issues of (1) thoughtful conceptualization and (2) mode of actualization. The two substantive questions that need to be distinguished from one another are these: (1) Does the universe, in the totality of its properties and dynamic capabilities (in other words, its formational and functional economies), display the marks of having been thoughtfully conceptualized or does it bear the marks of being the sort of unconceptualized entity that just happens to exist? (2) Whether thoughtfully conceptualized or not, is the formational economy of the universe sufficiently robust to make possible the actualization (in this context “actualization” means “assembly from the requisite elementary components”) of all physical structures and life forms by means of self-organization and transformation in the course of time?

Both the either/or format of the creation/evolution debate and the apologetic strategy modeled by proponents of intelligent design theory have been built on the presumption that the answers to these two questions are inextricably coupled in one particularly way. According to Phillip Johnson, for instance, an authentically theistic perspective on evolution is impossible because evolution and metaphysical naturalism cannot be isolated from one another. In Johnson’s own words,

I think that most theistic evolutionists accept as scientific the claim that natural selection performed the creating, but would like to reject the accompanying metaphysical doctrine that the scientific understanding of evolution excludes design and purpose. The problem with this way of dividing things is that the metaphysical statement is no mere embellishment but the essential foundation for the scientific claim.<sup>13</sup>

William Provine, a vocal proponent of naturalism, heartily agrees with Johnson’s claim regarding the incompatibility of evolution and theistic religion. Johnson takes this agreement as confirmatory of his rhetorical strategy. “Provine and I have become very friendly adversaries, because our agreement about how to define the question is more important than our disagreement on how to answer it.”<sup>14</sup> (I would have expected their religious differences to be far more important than their agreement on rhetorical strategy.)

Proponents of evolutionary naturalism (like Johnson’s sparring partner Provine, for instance) presume that their case is to be won by amassing evidence for the robustness of the universe’s formational economy. As we noted earlier, the essence of the naturalistic challenge is this: If there are no gaps in the universe’s formational economy, then what need is there for a Creator? The response of episodic creationists and intelligent design theorists to this challenge is to say, in effect, “Then there must be demonstrable gaps in the creation’s formational economy. We think we have found some of them. Therefore, some form of extra-natural assembly

<sup>13</sup>Phillip E. Johnson, *Darwin on Trial*, 2d ed. (Downers Grove: InterVarsity, 1993), 168.

<sup>14</sup>*Ibid.*, 165.

(such as fiat creation or its more subtle intelligent design variant) is essential for the formation of at least some life forms or biotic subsystems, and naturalism is thereby discredited.”

The two parties in the popular debate categorically disagree, of course, on whether or not the robust formational economy principle is true, but they nonetheless appear to agree that if it is true, then naturalism wins, or at least appears more likely to be true than does Christian theism. As I see it, that agreement constitutes a tragedy of major proportions for the Christian witness to a scientifically literate world. It implies that the apologetic contest between theism and naturalism is to be settled on the basis of the mode by which life-forms came to be actualized in time. The credibility of theism is presumed by both parties to be closely linked with the possibility of demonstrating a need for occasional episodes of divine creative action of the extra-natural assembly variety. If that need could be conclusively demonstrated, it would falsify both the robust formational economy principle and evolutionary naturalism. In fact, as I have already intimated, some proponents of intelligent design theory see little distinction between these two concepts, presuming that the robust formational economy principle and evolutionary naturalism are, for all practical purposes, equivalent.

To illustrate this last point, consider the following sample of the rhetoric of Phillip Johnson. In a published exchange of views regarding the place of divine intervention in the course of creation’s formational history, I challenged Johnson to articulate his conception of “just what biological history would have been like if left to natural phenomena without ‘super-natural assistance’.” His candid and very telling reply was,

If God had created a lifeless world, even with oceans rich in amino acids and other organic molecules, and thereafter had left matters alone, life would not have come into existence. If God had done nothing but create a world of bacteria and protozoa, it would still be a world of bacteria and protozoa. Whatever may have been the case in the remote past, the chemicals we see today have no observable tendency or ability to form complex plants and animals. Persons who believe that chemicals unassisted by intelligence can combine to create life, or that bacteria can evolve by natural processes into complex animals, are making an a priori assumption that nature has the resources to do its own creating. I call such persons metaphysical *naturalists*.<sup>15</sup>

I can only take this to mean that, from Johnson’s perspective, only a metaphysical naturalist would presume the truth of the robust formational economy principle. If that were so, then the credibility of theism could be convincingly established by demonstrating the existence of gaps in the formational economy of the universe.

The credibility of naturalism, on the other hand, is often presumed to be established by demonstrating that the actualization of all life forms can be accomplished “naturally,” that is, without episodes of special creation in

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<sup>15</sup> *First Things* (June/July 1993), 38.



time. Implicit in this line of argumentation is the astounding presumption that the truth of the robust formational economy principle warrants the rejection of the idea that the being of the universe bears the marks of having been thoughtfully conceptualized. One can readily see why proponents of evolutionary naturalism would be eager to grant this presumption, but it is exceptionally difficult for me to see why it would be attractive to a Christian. Why would a Christian be inclined to reject the possibility that a creation thoughtfully conceptualized by God could well also be a creation—generously gifted by God with a robust and gapless formational economy?

*Should Not Creationists Have High Expectations for the Creation?*

It is clear, then, that the status of the robust formational economy principle in relationship to both evolutionary naturalism and Christian theism must be reexamined. The popular debate is structured around the presumption that this principle is the offspring of naturalism and that if Christian theism is to survive, it must now slay the dragon named “the robust formational economy principle.”

But is that actually the case? Suppose that we, as scientifically-informed Christians, were to address anew, in the contemporary context, the question regarding the mode in which the physical structures and life-forms of the

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***“All Christians are authentic ‘creationists’ in the full theological sense of that term.”***

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creation have come to be actualized in time. Suppose, furthermore, that we were to adopt the position generally held in the scientific community that the answer is, “Yes, the robust formational economy principle is likely to be true.” Would the adoption of such a presupposition place the Christian apologist in a position of weakness or disadvantage, as is commonly believed? Emphatically not, I would argue. Recognizing that such an approach might take many persons, both within and outside of the Christian community, by surprise, let me explain how I have come to adopt this stance.

All Christians are authentic “creationists” in the full *theological* sense of that term. We are all committed to the biblically-informed and historic Christian doctrine of creation that affirms that everything that is not God is part of a creation that has being only because God has given it being and continues to sustain it. As a creation, the universe is neither a divine being nor a self-existent entity that has its being independent of divine creative action. This theological core of the doctrine of creation sets Judeo-Christian theism in bold distinction from both pantheism (all is God) and naturalism (all is nature).

It is important here, I believe, to remind ourselves that the being of every creature—that is, every member of the creation, whether animate or

inanimate—is defined not only by its “creaturely properties” but also by its characteristic array of “creaturely capabilities” to act and interact in particular ways, often in accordance with patterns—whether deterministic or probabilistic—that are empirically accessible to the natural sciences. Christians committed to the doctrine of creation recognize all of these “creaturely capabilities” (all of the remarkable things, for instance, that fundamental particles, atoms, molecules, and cells are capable of doing) as God’s “gifts of dynamic being” to the several members of creation. A creature can do no more than what God has gifted it with the capacities to do.

From this creationist perspective, then, each discovery of a creaturely capability—including every discovery contributed by the natural sciences—provides the theist with an occasion for expressing awe regarding the Creator’s unfathomable creativity (in thoughtfully conceptualizing the gifts to be given) and unlimited generosity (in actually granting this rich array of gifts of being to the creation). Furthermore, given the creationist orientation here described, I would argue that the Judeo-Christian theist should be inclined to have exceedingly high expectations regarding the character of creation’s formational and functional economies. Since the richness of these creaturely economies is to be seen as a manifestation of the creativity and the generosity of the Creator, we have every reason to have high expectations for the fullness of being that is resident in the integrated set of creaturely capabilities with which God has gifted creation for the purposes of both formational development and moment-by-moment functioning. This high expectation is affirmed each time the empirical sciences come to an awareness of another member of these dynamic economies.

Note carefully what I have just said. All Christians hold that the creation is “designed” in the fundamental sense of having been *thoughtfully conceptualized* by a Creator possessing unimaginable creativity. But if that creativity is beyond human comprehension, as we should expect, then the mode by which particular structures and forms are to be actualized in the course of time is also likely to be far more wondrous than we could imagine. Therefore, those epistemological gaps of which I spoke earlier provide no sufficient basis whatsoever for presuming the existence of corresponding ontological gaps in the formational economy of the creation.

### *The Fully-Gifted Creation: Both Thoughtfully Conceptualized and Optimally Equipped*

Drawing from a number of biblical and theological considerations, I envision a creation brought into being in nascent form, brimming not only with awesome potentialities—for being organized into an astounding array of both physical structures and biotic forms—but also with a robust set of dynamic pathways for achieving them by the exercise of their creaturely capacities.

Drawing also from the vocabulary of the natural sciences, I envision a creation brought into being by God and gifted not only with a rich

“potentiality space” of possible structures and life forms but also with the capabilities for realizing these potentialities by means of self-organization into nucleons, atoms, molecules, galaxies, nebulae, stars, planets, plants, animals, and the like. To say it in another way, I believe that the universe in its present form is to be seen as a potentiality of the creation that has been actualized by the exercise of its God-given creaturely capabilities.

For this to be possible, however, the creation’s formational economy must be astoundingly robust and gapless—lacking none of the resources or capabilities necessary to make possible the sort of continuous actualization of new structures and life forms as now envisioned by the natural sciences. The optimally-equipped character of the universe’s formational economy is, I believe, a vivid manifestation of the fact that it is the product, not of mere accident or happenstance, as the worldview of naturalism would have it, but of *intention*. In other words, the universe bears the marks of being the *product of thoughtful conceptualization for the accomplishment of some purpose*. From the Christian perspective, this comes as no surprise whatsoever because the formational economy of the universe—every creaturely capability that contributes to it—is a symbol both of God’s creativity and of God’s generosity.

#### *How is Divine Creative Action Manifested?*

Among Christians in North America, there appears to be a strong desire for conceiving of divine creative action in a way that would provide a basis for expecting it to be empirically distinguishable from “natural” action. In the minds of many, an appeal to divine action becomes convincing only if it can be demonstrated to have made a difference of the empirically discernible sort. In essence, evidentialist apologetics is presumed to provide the most substantive and convincing reasons to believe.

The question before us, then, is, *What is the character of that creative activity and how does it become manifest to those who have eyes to see it?* When I speak of divine creative action, however, I am inclined to speak of it not in the Aristotelian vocabulary of cause and effect, but in the royal metaphor (frequently employed in Scripture) of creative word and creaturely response. Cause and effect language seems to encourage images of God acting like creatures, only more powerfully. Matter is coerced to assume new forms. Word and response language focuses more attention on matters of authority and accountability. The king speaks, the king’s subjects carry out his wishes.

I believe that God acts by calling upon the creation to employ its creaturely capabilities to bring about a fruitful outcome, and that *the fruitful character of creation’s formational history is the manifestation of that divine calling*. This is, I believe, the same kind of divine action that we ask for when we pray for God’s “blessing” on the work of the surgical team as we prepare for a journey into the operating room—we ask that God act in such a way that the actions of God’s creatures (from the medical staff in the hospital to the molecules in our cells) will lead to a fruitful outcome.

In the contemporary discussion of issues regarding natural science and Christian faith, the question of empirical detectability often arises. Is God's action of blessing, for instance, empirically detectable as the "effect" of some non-creaturally "cause" that overpowers creatures in such a way that the outcome is clearly beyond the realm of creaturely possibility? I think not. If that were the sort of divine action that we were expecting in response to our pre-surgery prayer, why not skip the surgery and avoid both the pain and the expense? The kind of divine action we pray for is discernible only by those who have eyes (of faith) to see it. The natural sciences have no instruments with which to measure the level or effectiveness of God's blessing.

Reflect for a moment on the way modern astrophysics and cosmology describe (within the limits of a very restricted conceptual vocabulary) the processes from time  $t = 0$  until now. Some nascent, non-material form of energy (whose ultimate source of being lies beyond the competence of science to identify) employs its capabilities for self-organization (capabilities that are in no way self-explanatory) to form the fundamental particles and their four distinct forces of interaction, from which also proceed such

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***"My own choice strongly favors the concept of a creation optimally gifted by the Creator with a robust and gapless formational economy—yes, even robust enough to make possible the evolutionary continuity envisioned by cosmologists and biologists."***

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macroscopic forms as galaxies, stars, and planets. How could the universe's formational economy be so robust as to make this astrophysical drama a possibility? Only, I believe, as an outcome of God's thoughtful conceptualization and effective will to give being to the creation first conceptualized.

And how could it be that the outcome of this exercise of creaturely capabilities has been so astonishingly fruitful? Even if we could comprehend all of the things that atoms and molecules could do, how could it be that the outcome of their actions could lead to the vast array of astronomical and biotic forms that now comprise the universe? Only, I believe, as the outcome of God's continuing blessing on those creaturely capabilities.

Do I expect to find particular instances in which God's action in the course of cosmic formative history is empirically discernible? Do I expect to catch God in the act of coercing atoms and molecules into doing things differently from what they might otherwise have done (as if I could even know that)? No, I do not. I can observe what creatures have done, but God's act of calling for that particular creaturely action is beyond my empirical grasp. Though I can empirically detect the creaturely response, I

cannot record the divine creative word that called for it. Furthermore, what I observe creatures to be doing in response to that creative word is not something of which they were never capable, but rather it is a fruitful exercise of the very God-given capabilities that constitute their being.

*Intelligently Designed or Optimally Equipped?*

The question posed in the title of this essay is an invitation to choose between two differing visions regarding the character of the creation, the nature of divine creative action, and the effective reasons for the fruitful outcome of the creation's formational history. Some have chosen a perspective that presumes the existence of gaps in the creation's formational economy—gaps to be bridged by occasional episodes of form-imposing divine intervention. My own choice strongly favors the concept of a creation optimally gifted by the creator with a robust and gapless formational economy—yes, even robust enough to make possible the evolutionary continuity envisioned by cosmologists and biologists.

Nearly every time that I have presented this perspective to a Christian audience someone expresses the fear that it represents a form of deism, with its concept of a distant and inactive God. I find the frequency of this concern very intriguing. Is it telling us something about how we Christians today are inclined to think about divine action? Has our concept of divine creative action been unduly affected by the “special effects” industry? Perhaps so.

But the “optimally-gifted creation perspective” is not at all inclined toward deism. I think the quickest way to dispel that fear is to ask the following question: Has orthodox Christian theology ever suggested that God is able and/or willing to act in the world only within gaps in either the formational economy or the operational economy of the Creation? To the best of my knowledge the answer is a resounding no. Therefore, if the presence of such gaps is not required to “make room” for divine action, then the absence of such gaps is no loss whatsoever. End of story.

From the vantage point of believing that God gave being to a creation in which the robust formational economy principle is true, God is still as free as ever to act in any way that is consistent with God's nature and will. The optimally-gifted creation, complete with a gapless formational economy, does not in any way hinder God from acting as God wills to act. As I have said on numerous occasions, the question at issue is not, “Does God act in or interact with the creation,” but rather, “What is the character of the creation in which God acts and with which God interacts?” I believe that it is an optimally-gifted creation.

· Does this perspective crowd God or divine action out of the picture? Does this perspective entail too high a view of the creation's dynamic capabilities or too lofty a view of the Creator's creativity and generosity? I, for one, think not.