

RELIGION, SCIENCE, AND EVOLUTION: PAUL TILlich'S FOURTH WAY

by Richard Grigg

Abstract. In his book *God After Darwin* John Haught provides a useful categorization of theological approaches to evolution: some theologians actively oppose Darwinian evolution, another group maintains that science and religion have nothing to say to one another, and a third seeks to engage evolution. Haught wishes to pursue the third way. But many theological attempts to talk about divine action in the world, including divine involvement in the process of evolution, run afoul of the scientific principle of the conservation of matter-energy. Haught's reliance on the now-familiar notion that information can have causal efficacy does not in fact escape this difficulty. I suggest a fourth approach, represented by a constructive reading of Paul Tillich's theology. The central argument is that Tillich offers a way of taking Darwinian evolution up into one's ultimate concern without claiming that God has any causal relation to evolution. God provides no historical telos for evolution, but rather a "depth teleology" that springs from the manner in which God, as the depth of the structure of finite being, is the object of Christian faith.

Keywords: conservation of energy; depth teleology; John Haught; theology and evolution; Paul Tillich.

Those who embrace the Christian faith have ever wanted to speak about their God as a God who acts. The Christian God acts primordially in the creation of the universe, and, rather than subsequently abandoning creation, as the Deist's God was wont to do, the Christian God continues to act within and upon creation. God's continuous action includes preservation, providential guidance, and perhaps also discrete and spectacular acts of intervention. It is the second of these, God's providential guidance of

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God's creation, that concerns us here, because it is that dimension of divine action that connects most readily with our focus, the evolution of living things on the earth. In the pages that follow, John Haught's *God After Darwin: A Theology of Evolution* (2000) is my starting point. But while Haught's provocative reflections serve as something of a center of gravity for my own reflections here, I ultimately suggest that a particular reading of Paul Tillich's theology (an admittedly rather radical one) will serve us better in confronting some of the difficult technical problems that face us in talking about divine action vis-à-vis biological evolution.

The moment that we begin to consider claims of divine action in the world, including divine guidance of evolution, we face a particularly stern scientific challenge: all talk of God acting within the physical universe appears to run afoul of the law of the conservation of mass-energy. That law tells us that in a closed system energy can change form but cannot be created or destroyed; if one inventories the energy in such a system on Monday, one must come up with the very same amount of energy when one checks the system again on Friday.

How, then, can God ever act within creation? Any such action should register as an illicit addition of energy from outside the closed system of the universe. The Christian thinker will no doubt be tempted to fall back upon the venerable Thomistic notion of primary and secondary causality: God acts through the natural causal channels of the world that God has created. Unfortunately, this will not do as a response to the challenge of the conservation law. If the assertion that God acts through secondary causes is to be more than merely a poetic flourish, if it is meant to suggest that there really is a God who makes things happen in the physical universe that would not have happened without divine action, then God must add something to or change the direction of the natural, or secondary, causal processes of the world. But that takes us right back to our problem: any such addition or tampering violates the law of conservation.

What should the Christian thinker who desires to see some role for God in the process do when confronted with the Darwinian evolution of all living things on the earth? Haught's categories of *opposition*, *separatism*, and *engagement* are certainly helpful.¹ Some theologians will choose the way of opposition—creationist thinkers fit here, for example—but simple opposition to the scientific notion of evolution is hopelessly benighted. As Pope John Paul II has reminded his flock, evolution is more than just a hypothesis; the evidence to support it is overwhelming.

Those who have not bothered to follow the latest efforts of anti-Darwinian Christians to make their case are to be congratulated for their good judgment. Just to put everything on the table, however, let it be stated that those efforts are summed up in what is being called intelligent-design (ID) theory, which has been with us only since around 1990. Its proponents do attempt some new maneuvers, such as attacking evolutionary

theory on the molecular level and drawing on information theory. But careful thinkers who have taken the time to reply have had no difficulty in showing the tangle of confusions that characterizes ID thinking (see Edis 2001; Pennock 2001; Roche 2001). To take up residence in the oppositionist camp is simply to remove oneself from all serious discussion of the nature of our world.

What of the separatist camp? That must surely be a more respectable option; after all, both scientist Stephen Jay Gould (1999) and the Tillich of *Dynamics of Faith* (1957) appear to fit there. Tillich tells us in that book that “scientific truth and the truth of faith do not belong to the same dimension of meaning. Science has no right and no power to interfere with faith and faith has no power to interfere with science. One dimension of meaning is not able to interfere with another dimension” (p. 81).

The separatist position, however, rests upon a confusion. Suppose that when I am in a state of despair I pray to God and then find my mindset transformed. Desperation is replaced by optimism and torpor by renewed vigor. The separatist will most likely describe what happened by saying that God has acted to give me strength but that only the eyes of faith can see that it was in fact the work of God. Science will find nothing unusual in the transformation, because science by its nature is confined to a dimension of reality wholly separate from the transcendent reality of God and God’s action. Here is the confusion, though: while one may claim that only faith is privy to the fact that it was God who acted, the *result* of that action is publicly observable, at least in principle, even when we are talking about something as apparently private as a change in my mental state. For my mood to change, my brain chemistry must change: dopamine will flow, or serotonin levels will rise, or electrical activity will increase—whatever the details, the change will be more than evident under scientific scrutiny. And any such change will entail expenditure of energy. If this energy is introduced by God, however far back in some perhaps exceedingly long causal chain, if it is not simply part of a series of events that was going to occur in any case, with or without God, the conservation law is violated. In short, the separatist stance does not succeed in removing all elements of a theological claim from scientific investigation, and the crucial fact of the matter is that the elements of the claim left in plain view are sufficient for the scientist to detect a violation of the conservation of energy.

Haught’s third way appears much more promising, not to mention more interesting, than either the way of opposition or the way of separation. This is the way of engagement: theology is not wholly separate from science, but neither does it connect with science simply by rejecting scientific claims. Rather, theological claims can constructively mesh with, and thus do real work with, scientific facts and theories.

But let us not forget the specific problem in view, viz., how to speak meaningfully of divine action in the world without violating the law of the

conservation of energy. How does the way of engagement make claims of divine action without needing to smuggle extra energy into a physical system? Haught, along with a number of other eminent commentators on science and theology, turns to the notion of nonenergetic information. Let us use an example of billiard balls to see how this might work. Suppose that I rack up the fifteen balls at one end of the table, arranging them in the familiar triangular pattern. Taking aim with my cue from the other end of the table, I fire the cue ball into that triangular grouping, sending the fifteen balls careening off on different paths. The cue ball and the other balls are interacting with one another via mechanical causality, via what, from the time of Aristotle, has been called efficient causality. The kinetic energy that I have imparted to the cue ball expends itself in such a way as to move the other balls (and to generate a negligible amount of heat). All of the energy that is used here can be fully accounted for, and is thoroughly explicable, by looking back to the motion of the cue ball, and from there back to the motion of my cue, and so on.

But we ought to notice something else about this scenario. The original triangular pattern of the balls must have had an effect. That arrangement helped determine the trajectories that the fifteen balls followed after having been set in motion by the cue ball. Yet—and this is crucial—the causal efficacy of this initial pattern surely cannot be reduced to the kinetic activity of the cue ball, nor to the individual characteristics of the fifteen balls that constitute the pattern, nor to the causal interactions between those balls, nor to any combination of these factors. The pattern appears to have a causal efficacy of its own; it cannot be reduced to the efficient causality operating between the individual balls. It thus appears that *this causal efficacy is not a function of expending energy*. It is instead simply a function of the information represented by the arrangement of the balls.

It certainly seems that we have come upon causal efficacy without expenditure of energy, and this is important news for the theologian. For it opens the possibility that God can exercise causal efficacy in the world, that God can act within the world, by imparting information rather than energy to the world. Divine action can thus be squared with the law of the conservation of energy, and we can find a meaningful way to talk about God guiding the evolutionary process. Haught's particular way of tapping in here is to claim that God can act by *luring* events into the future. Drawing on thinkers such as Alfred North Whitehead and Pierre Teilhard de Chardin, Haught argues that God is ever a God of the novel, of what can be, and God acts within the evolutionary process by introducing genuinely new possibilities that make evolution in the fullest sense possible.

But, alas, there is a serious problem here that I have glossed over. The problem becomes evident when we return to our example. While the initial *arrangement* of the billiard balls on the table exercises causal efficacy without expending energy, there is a very definite expenditure of energy in

the act of *arranging* the balls. I expended energy in racking up the balls in that particular pattern. In other words, while no energy use is detectable when we look at the pattern as an accomplished fact, that is not a broad enough view of the phenomenon. When we widen our inquiry and look at the phenomenon as a whole, it is quite evident that the causal efficacy of the initial triangular arrangement of the balls necessarily draws upon my expenditure of energy in the act of arranging them. In the end, the manner in which pattern-as-information exercises causal power does not after all provide a way for God to act in the world without violating the law of the conservation of energy.

Even Arthur Peacocke, probably the best known advocate of the nonenergetic, information-as-causality approach, a form of top-down causality, seems to admit to this problem:

. . . in the world we observe through the sciences, we know of no transfer of information without some exchange of matter and/or energy, however minimal. So to speak of God as "informing" the world-as-a-whole without such inputs of matter/energy . . . is but to accept the ultimate, ontological gap between the nature of God's own being and that of the created world. (Peacocke 1995, 286)

Translation: transfer of information always involves expenditure of energy. Hence, the information-as-causality model of God's action in the world does not really help us to escape violation of the conservation law.

But perhaps my billiard-ball example is not quite right. One might argue that, while it does provide a good picture of the unique properties and effects of pattern on a series of events, the analogy breaks down when I describe my expending energy in racking up the balls in a particular pattern; for Haught suggests that God patterns evolution not by crudely reaching into physical systems and arranging them but, in the fashion described in Whitehead's panpsychism, that God *lures* entities into particular patterns. This response still does not allow us to escape our dilemma. For however one understands the metaphysics of God's luring creation, if the claim at issue is the strong one that it is God's lure that resulted in a particular pattern of physical entities and that those entities would have been arranged in another pattern without God's lure, then it must be said that God has altered the configuration of a physical system—and to alter the configuration of a physical system requires the expenditure of energy. If the claim is a weak one, namely, that God simply presents to entities (or to Whiteheadian "actual occasions") certain logical and physical possibilities that the entities may or may not actualize, then the claim does not seem sufficiently strong for a doctrine of God's providential guidance of the evolutionary process.

Hence, the need for a fourth way to think about the relationship between science and theology, a way distinguishable from the ways of opposition, separation, and engagement. I suggest that we turn again to Tillich

in order to find this fourth way. Tillich's mature system suggests the possibility of meshing science and theology not, as in the way of engagement, by linking the tenets of technical or scientific reason with metaphysics (or with Tillich's own "ontological reason," which has cognitive and aesthetic, theoretical and practical dimensions) but rather *by linking scientific reason with ecstatic reason*. Ecstatic reason, explains Tillich, is "reason grasped by an ultimate concern" (1951–63, 1:53). With Tillich's theology, Darwinian evolution can be taken up into our ultimate concern, but not in the form of a theory about how the God who is the object of Christian ultimate concern causally influences the evolutionary process. Indeed, Tillich cannot talk at all about God having a causal relation to evolution, however subtle; for Tillich—good Kantian that he is, at least at some points in his thought—designates causality as one of the categories of finite being and thinking (1951–63, 1:192–98). As a category of finite being and thinking, causality cannot apply to God as being-itself or to God's relation to the world.

How exactly does Tillich's theological system, or at least a constructive rereading of it, connect God and biological evolution? In its briefest form, my thesis is this: *God is not relevant at all to biological evolution taken in and of itself, but evolution and God come into substantive contact via our own, human quest for redemption*. Now, Michael Drummy, in his insightful study on Tillich and ecology, *Being and Earth* (2001), continually reminds us of the dangers of the old Protestant anthropocentrism of grace, which so focuses upon the individual soul's direct relation to God, its absolute relation to the Absolute, that it thoroughly disregards the world of nature. I want to be clear at the outset that my proposal does involve a form of anthropocentrism, and, given Drummy's well-placed warning, I begin with a brief apologetic for anthropocentrism, the upshot of which is that there are better and worse anthropocentrisms. Every theological position operates from some perspective. Furthermore, perspective is necessarily a function of consciousness. Pre-sentient nature by definition does not possess consciousness. Thus, there is no such thing as the perspective of the larger world of nature. We are stuck simply with choices between different anthropocentric perspectives on nature. Granted, there may be a divine perspective on nonhuman nature and its value, but we have no direct access to any divine perspective. Even an alleged revelation must be both received and interpreted from a particular human perspective. It should be added that if the God we have in mind is Tillich's "transpersonal" God, it is not clear that God even has a perspective. It is an anthropocentric perspective on nature, then, or none at all.

An important distinction needs to be made: there are fecund and magnanimous anthropocentric perspectives, on one hand, and petty and destructive ones, on the other. I take Drummy's warnings about traditional

anthropocentrism of grace to be about the latter kind, the kind that devalue and cut us off from the world of nature. When I assert that God is to be connected to evolution only through our own quest for redemption, I am aiming for a magnanimous anthropocentrism.

I prepare the ground for my case by briefly reviewing some of the basic elements of Tillich's theology. Human being, as finite being, is constantly threatened by nonbeing (finite being is simply being that is limited by nonbeing)—a threat given to consciousness in the form of anxiety. Thus, the religious quest is the quest for an ultimate concern that can enable the self-affirmation of being in spite of the threat of nonbeing. The only legitimate object of such a quest is God as being-itself, the depth of the structure of finite being. Readers of the three volumes of Tillich's *Systematic Theology* will recall that the religious quest and the dynamics of ultimate concern are complicated by distinguishing among "essential," "existential," and "ambiguous" being. For the sake of brevity, I shall not spell out these technical distinctions here. It is sufficient for our purposes to know that all three forms of being require the self-affirmation of being in spite of the threat of nonbeing. The particular form of being that we shall have occasion to consider in a bit more detail later on is the one that Tillich equates with "fallenness," namely, existential being.²

Because Tillich, clearly influenced by Heidegger, proceeds phenomenologically when describing the whole structure of finite being, not just the structure of *human* being, it is unsurprising that he finds the basic polarity of self and world in all instances of finite being, even if only analogically. Says Tillich, even "selfhood or self-centeredness must be attributed in some measure to all living beings and, in terms of analogy, to all individual *Gestalten* even in the inorganic realm" (1951–63, 1:169). The whole natural world participates, then, in the being of humanity. This is a formal result of Tillich's phenomenological derivation of the structure of being. But the reverse is also true: human beings participate in the world of nature. Here we look not to formal considerations derived from Tillich's chosen ontological method but to material considerations. Specifically, we should look to Darwinian evolution, for nothing shows us so powerfully that we are part of the larger physical world of nature than the facts of the evolution of the species and the dynamics of natural selection. These facts tell us who we are: we are one permutation of the laws and energetic interactions that make up the universe. Thus, we can speak of a reciprocal participation of nature in humanity and of humanity in nature: nature participates formally and analogically in humanity insofar as our point of entry into the being of nature can only be through human being as that being for whom its own being is an issue; human beings participate materially in nature insofar as we are the product of thoroughly natural forces. To be precise, then, we can call this *asymmetric reciprocal participation*.

Now, the powerful fashion in which Darwin—along with later physics, biology, chemistry, and cosmology—spells out for us that we are inextricably bound up with the whole of the natural world ought to affect our sense of the religious quest, ought to shape that quest more directly than Tillich explicitly allowed in his own writings. We look, says Tillich, to God as the depth of being, as that which allows us to affirm our being in spite of the threat of nonbeing. As already mentioned, the threat of nonbeing is given to human consciousness in the form of anxiety, and a bold confrontation with the facts of Darwinian evolution will have an impact, for example, on our experience of what Tillich names the relative form of ontic anxiety—that is, the anxiety of fate (see Tillich 1952). Evolution is a wholly contingent, absolutely nonteleological process. Thinking through the facts of evolution leads us to grasp what we might well designate as not the “thrownness” of the individual but rather the “thrownness” of the human species. And to face head-on the fact that we ourselves are thus a mere accident of nature—albeit a “glorious accident,” in Gould’s felicitous phrase³—is to encounter a most powerful form of the anxiety of fate.

The religious quest as informed by a grasp of the science of evolution, then, is the quest for a source of courage that allows me meaningfully to affirm my being in spite of the pure nonteleological contingency of my origin. (One might note here, by the way, how ontic anxiety, the anxiety of fate, fuses with what Tillich calls spiritual anxiety, the anxiety of emptiness and meaninglessness.) Tillich’s God, however, is up to the task; his God can provide the courage that I require. For while I can find no meaningful linear telos that will rescue my evolutionary origin from pure contingency and apparent meaninglessness, I can find instead what I would call a vertical or *depth teleology*. For it is by perceiving my groundedness in God as the eternal depth of being, the negation of the negation of being, that I can affirm my being in spite of the radical contingency of my evolutionary origin. What is more, to the extent that nature participates analogically in human being, this courageous self-affirmation of being, this redemption from the threat of nonbeing, is a redemption in which the process of biological evolution participates.

What, more exactly, might be involved in my perceiving my groundedness in God as the eternal depth of being?⁴ Two brief examples will need to suffice here. To recognize that my existence is given, that it is “let be,” by being-itself, despite the constant threat of nonbeing, is to be struck by religious wonder at the fact that, in the famous Leibnizian formula, there is anything at all rather than simply nothing.⁵ This self-conscious wonder and religious gratitude for the sheer fact of being is, of course, firmly tied up with wonder and gratitude at my own particular chance to participate in being, and I am now fully cognizant of how all the more gratuitous is the fact of my existence given the incredible contingency and tenuousness of the process of evolution that has produced me. By gratefully recogniz-

ing my being as supported or grounded in God as the depth of being, as the negation of the negation of being, I am able to powerfully affirm my being in spite of the threat of nonbeing, to live in a way that Tillich would identify with courage and with faith (see Tillich 1952). And given the tie between my own being and the evolutionary process, this faith is, on an analogical level, a courageous affirmation too of the process of evolution—a faith in its redemption, as it were.

Consider a second example. Tillich's phenomenological derivation of the structure of human being uncovers the basic polar structure of freedom and destiny, individuation and participation, and dynamics and form. He intends this polar structure to be understood in such a way that the more fully realized the destiny pole, the more fully realized the pole of freedom. The poles, in other words, are in the most creative, the healthiest, of tensions. In our fallen condition, however, the poles tend to come apart, so that freedom degenerates into mere arbitrariness and destiny into mechanical necessity. The particularly Christian form of thinking myself in relation to God—of orienting my sense of self by God, if you will—opens up the possibility of New Being in Christ, that particular Christ given to us in what Tillich calls the biblical picture of Jesus as the Christ. That picture offers the possibility of reestablishing the proper polar tension between the elements of our being.

Consider how the idea of Darwinian evolution might provide concrete resources in this redemptive process effected through faith in the Christ. Rather than finding my freedom degenerating into mere arbitrariness, I can understand it as situated within the larger boundary-setting destiny of evolutionary history; my individuation finds its proper context in my solidarity with the whole history of evolution and its many species, of which I am a part; and the danger of being stuck in unchanging, ultimately lifeless form is overcome by the fact of evolutionary change, to which I am inextricably bound via the history of my species. Both my own being and the Darwinian notion of evolution are "redeemed" here, once again, not by engaging in some metaphysical argument about how evolution can be understood in relation to divine causality and teleology within history but rather with how evolution is taken up into my own redemptive quest, in how I understand myself in relation to God as being-itself, in this case being-itself as manifested in the New Being in Jesus as the Christ.

The argument that depth teleology rather than any sort of linear teleology ought to be at issue when thinking about evolution can be reinforced by recalling that biologists refuse even the vaguest hint of teleology in the evolutionary process and also by recalling what Tillich has to say about history. For the temporal unfolding that is history and the temporal unfolding that is evolution are surely related, even though, in the technical sense given it by Tillich, history, properly speaking, arises only in those dimensions of being where "spirit" is present. Those who have read the

third volume of Tillich's *Systematic Theology* may remember that, according to Tillich, the end of history, in the sense of the meaning that both fulfills and judges it, is not some Omega Point, not some temporal end, but rather what Tillich terms "eternal life." That is, we once again must look to a depth teleology, an eternal now.

The distinction between approaching Darwinian evolution via a Tillichian depth teleology and via any variety of historical, linear teleology is significant, I think. Haught's desire to find some form of linear teleology, however highly modified, means that, unfortunately, his theology cannot pass muster with genuine Darwinian theory. And this is so whether or not one reads Darwin through the lens of a thoroughly materialistic metaphysic: whatever metaphysic one attempts to link to Darwinian science, Darwin refuses all teleology. Frederick Crews, whose critical intelligence has done much to oppose Freudian theory, turns his considerable abilities to a defense of Darwin. Crews calls Haught's position into question with the observation that Haught

relocates God in the future and depicts him not as a planner but as "a transcendent force of attraction." But it doesn't occur to Haught that such teleology is just what Darwin managed to subtract from science. Whether pushing us or pulling us toward his desired end, the Christian God is utterly extraneous to evolution as Darwin and his modern successors have understood it. Evolution is an undirected, reactive process—the exact opposite of Haught's construal—or nothing at all. (Crews 2001, 52)

The Tillichian approach that I have suggested here embraces the truth that the Christian God is utterly extraneous to evolution, that is, to evolution in and of itself, evolution as a physical process. It is the meaning and value of evolution and its connection to our religious projects that get connected with the Tillichian God. Depth teleology means that the larger reality of nature and its struggles, whatever the accidental ends of those struggles within history, become meaningful by being juxtaposed to Tillich's version of the Christian vision of the meaning and purpose of human existence—human existence as it essentially ought to be, that is, as it is grounded in God. All of physical nature participates, as we have seen, analogically in this depth goal of human being; and, in turn, the human quest for redemption is enriched and much more adequately understood when located within its physical, including evolutionary, environment.

Subsequent to his book *God After Darwin* Haught published an article titled "In Search of a God for Evolution: Paul Tillich and Pierre Teilhard de Chardin" (Haught 2002). Not surprisingly, given his emphasis on a God of the future who lures the evolutionary process forward, Haught's article praises Teilhard's future-oriented metaphysic and its notion of the Omega Point. But what does he have to say about Tillich, and what light do his remarks shed upon my own Tillichian proposal? In order to see why Haught discounts Tillich as a viable resource for thinking about evolution,

we can start with one of his central observations about Teilhard: "As his thought matured, Teilhard increasingly complained that traditional theology, insofar as it focused on *esse* (the idea of *being*), is unable as such to contextualize the dramatic new sense of a world still in the process of becoming" (Haught 2002, 542). While Haught appreciates Tillich's notion of "New Being," he finds that Tillich's underlying metaphysics or ontology is still one of *esse*. Being-itself is the primordial Ground of Being, the essential origin to which fallen being must be restored, rather than a force calling fallen being into the future: "In Tillich, the futurity of being is still subordinated to the idea of an eternal presence of being" (2002, 549).

If one's strategy for coming up with a theology for evolution is to link scientific reason with metaphysics, Haught may well be right that a metaphysics of God as future holds more promise than a metaphysics of *esse*. First of all, however, I have tried to show that, whatever its strengths, Haught's metaphysics of the future cannot escape the violation of the law of the conservation of energy. Second, the central move in my interpretation of Tillich is not a matter of linking his metaphysics or ontology of *esse* with scientific reason (though of course I make use of his notion of being-itself, or the Ground of Being). Rather, I have taken a wholly different approach: I have linked evolutionary theory with Tillich's ecstatic reason, with the whole phenomenon of our ultimate concern. This approach, I argue, provides a powerful resource for the religious person to take Darwinian evolutionary thinking up into his or her religious life and thinking.

By way of conclusion, it is perhaps my duty to make sure that the theological books are balanced. Just as there is a law of conservation of energy that dictates that, in the physical universe, one cannot get something for nothing, so there is a kind of law of conservation of theological value that applies to any theological proposal. While the Tillichian approach that I am proposing here does offer (at least in my opinion) a genuinely workable combination of science and religion, one that avoids violating scientific principles and yet meaningfully enriches our notion of ultimate concern, we of course lose something when it comes to our notion of the divine. Tillich's God can provide a depth teleology that creates no interference with the law of conservation of energy or with biology's total rejection of linear teleology only insofar as his God is essentially irrelevant to the actual physical workings of that universe, however much that God may have significant implications for how we consider the value of the universe and its relation to our own religious quest. By contrast, Haught's proposal, while it has what I have argued are some not-insignificant technical difficulties, has the laudable characteristic of proposing—and proposing in elegant fashion—a God who, through how he introduces novelty into the universe and lures the universe, still has a vital relation to that universe and actually affects its physical unfolding. At the end of the day, in both my Tillichian proposal about science and religion and in Haught's

approach, there is always a tradeoff; something is gained and something is lost. In theologizing, as in much of life, one must pay one's money and take one's choice.

NOTES

1. Some readers are already familiar with Ian Barbour's four categories—*conflict*, *independence*, *dialogue*, and *integration* (Barbour 1990). When Haught analyzes theological responses to evolution in particular, he finds it convenient to group the responses into three categories: *opposition*, *separatism*, and *engagement*.

2. Even though the notion of redemption applies, most technically, only to this fallen or "existential" state of being, I take the liberty of using the term *redemption* at various points in this essay in a more general sense as any process in which being is rescued from the threat of non-being.

3. Dutch journalist Wim Kayzer filmed a series of interviews with various scientists and philosophers. It was in one of these conversations that Gould used the phrase "glorious accident." The film conversations were subsequently published by Kayzer as a book (1997).

4. It should be noted that my considering my existence as grounded in being-itself has the singular advantage of avoiding any violation of the law of conservation of energy. That is, this is not a matter of God acting from without the closed system of nature. Rather, as long as it is simply my own thinking that is at issue—even if that thinking is about God and perhaps even entails my being grasped by an ultimate concern and is therefore "ecstatic" thinking or reason—that thinking is still purely natural and can be explained in terms of the energy that is already part of the biological system of which my thinking is a part (assuming, as I am, that thinking is simply a particular dynamic of electrical and chemical processes in brain tissue).

5. See Tillich's discussion of the "ontological shock" in *Systematic Theology* 1:113, 163.

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