

**Religious Voices Count:  
The New Openness to Spiritual Questions in the Sciences**

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The day is not long past when the words “contemporary science” sent shudders down the spines of theologians. After all, hasn’t science been the source of most of the major criticisms of theology in the modern period? Whenever one turned around, it seemed, another scientific salvo was being fired off against the pillars of theism. On this view, it was science that wrestled design and purpose away from the biological world, science that eliminated any place for divine action; science after Einstein that encouraged “relativistic” thinking, brought about the demise of absolute space and time, even taught the relativity of space to mass.

Indeed, it hasn’t been many years since Bertrand Russell’s famous attacks on religious knowledge: “A religious creed differs from a scientific theory in claiming to embody eternal and absolutely certain truth, whereas science is always tentative, expecting that modifications in its present theories will sooner or later be found necessary... Science thus encourages abandonment of the search for absolute truth...”<sup>1</sup> One immediately notes Russell’s unstated conclusion: therefore science encourages the abandonment of religion. For, Russell thought, whereas science is a matter of careful observation, and analysis, religion rests primarily on an illicit appeal to authority. When asked about God and immortality, Russell said, “My own belief is that science cannot either prove or disprove [these ideas] at present, and that no method *outside science* exists for proving or disproving *anything*” (p. 145, my italics). For “the sense of mystery, of a friendly or hostile non-human force, plays a far greater part in the life of savages than in that of civilized men” (p. 214). Was Bertrand Russell’s confidence in science and his dismissive attitude toward religion justified?

It also hasn’t been so many years since scientific standards for knowledge were said to challenge not only the probability of religious truth claims, *but even their very meaningfulness*. For the last generation of theologians, “the falsification debate” (the so-called university debate) was a centerpiece of the philosophy of religion and A. J. Ayer the critic with whom everyone had to wrestle. You may recall the famous parable, told by John Wisdom, of the man who found a garden in the forest and insisted that it must therefore have a gardener, even though the gardener could never be heard, seen, or detected in any fashion whatsoever. Here’s the moral of the story as summarized by the atheist critic Anthony Flew: “Just how does what you call an invisible, intangible, eternally elusive gardener differ from an imaginary gardener, or even from no gardener at all?” Flew threw down the gauntlet to theism: “Just what would have to happen not merely (morally and wrongly) to tempt but also (logically and rightly) to entitle us to say, ‘God does not

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<sup>1</sup> See Bertrand Russell, *Religion and Science* (New York: Oxford University Press, 1961), p. 14. The following references in the text are to this work.

love us,’ or even, ‘God does not exist?’ He thus put to theologians the question, ‘What would have to occur, or to have occurred, to constitute for you a disproof of, or the existence of, God?’”<sup>2</sup>

The premise of this paper is that proof and disproof no longer represent the entrance gates to religious reflection. A number of transformations in culture, in the theory of knowledge, and in the philosophy of language have dissolved the old worry that religious language is meaningless (in the strictest sense of the word) unless it’s empirically falsifiable. If there were time, we could explore in detail the central changes that have led to a new openness to spiritual questions, and thus to a new dialogue between religion and science. They include the following seven factors, each of which is worthy of an article of its own: the abandonment of the myth that science is a value-free activity which produces objective truths about the natural world; a growing frustration with the consequences of rampant materialism; new reservations about humanism in light of the evil that man has wrought upon man and woman in the wars of this century; a dissatisfaction with purely physical accounts of reality, accounts that are inadequate to explain human existence as we know it; the growing urgency of environmental problems and the concomitant need for a shared moral basis for responding to them; an increased interest in “spirituality” throughout our culture today; and finally, the urgent need to form an integrated view of the human person, perhaps prompted in part by the impending millennium. The net result of these seven changes is a new openness to spiritual questions within, and at the boundary lines, of the sciences. As one author has written,

It [humanity] cannot fly with one wing alone. If it tries to fly with the wing of religion alone, it will land in the quagmire of superstition, and if it tries to fly with the wing of science alone, it will end in the despairing slew of materialism.<sup>3</sup>

All this is a far cry from the proud proclamation in 1954 by Hans Reichenbach that humanity stands before a full scientific objective account of the world and a fully “scientific philosophy”!<sup>4</sup>

How radical has the change been? Is knowledge in physics now on a par with psychology—or voodoo—as radical philosophers of science such as Paul Feyerabend have urged? Some thinkers have used the term *postmodern* to characterize this new and unexpected friendship between science and theology (e.g., Nancey Murphy has been an outspoken advocate of this view). But I do not think that this term is well chosen or the radical demotions of science justified. For one, isn’t a broad and complex cultural movement such as “modernity” inherently too rich to be fully captured by a single label or a single set of three oppositions (pre-modern,

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<sup>2</sup> Quoted from Baruch Brody, ed., *Readings in the Philosophy of Religion: An Analytic Approach*, 1st ed. (Englewood Cliffs: Prentice Hall, 1974), p. 310.

<sup>3</sup> source unknown.

<sup>4</sup> Hans Reichenbach, *The Rise of Scientific Philosophy* (Berkeley: Univ. of California Press, 1951).

modern and postmodern)? Further, I think it can be shown that the power of the scientific method—data acquisition, theory formation, use of mathematical models, experiential design and replication, the power of prediction—tells against postmodern or relativistic theories of science.

In the end, real-world ambiguities set up a rather awkward dilemma for the would-be postmodernist. On the one hand, she could grant that a term like “modernity” is fuzzy, which would mean that there is no strict opposition between it and “postmodernity.” The two concepts move in and out of each other, sometimes overlapping, sometimes standing in some tension, sometimes the one encompassing the other. But then we cannot treat them as exclusive options. On the other hand, the postmodernist could define her position strictly, say as a precise option within epistemology. But then she will have to give up the claim that the move from “modernism” to “postmodernity” is a *chronological* one, a label for a cultural change that has already taken place. Instead, if the terms represent two major options in the theory of knowledge, they will have to be debated as such; one can no longer hide behind the claim that the postmodern has simply *superseded* the modern. Finally, note that the terms “modernity” and “postmodernity” imply a dipolar opposition. But isn’t it dipolar oppositions that postmodernists are trying to overcome? If you are a “post-structuralist” and you believe that “all is in flux,” why would you then wish to resurrect dualistic oppositions at the (meta-)level of epistemologies?

Instead of obscuring the horizon with the dust of postmodernism, I have characterized the new, positive setting for religion/science discussions as the move to a “post-foundationalist” theory of knowledge. (This is the case I made at the opening of *God and Contemporary Science*.) The foundationalist metaphor involved building up from the bedrock of certainties—perhaps from indubitable sense data, perhaps from certain intuitions of absolutes, perhaps from the alleged objectivity of the scientific method. By contrast, postfoundationalist or coherence-based theories of knowledge utilize the metaphor of a web. In knowing, one always begins with her own web of beliefs, her self-conception (religious or otherwise), her “world,” and *then* moves outward to compare it to different perspectives, to alter it where it conflicts with experience, to consider criticisms and respond to them. In a previous treatment I labeled this the *fallibilist* approach to knowledge.<sup>5</sup>

Do you see the difference? If I’m right about postfoundationalism, one is not mistaken in starting with the set of multiple beliefs she now holds; it’s what you do afterwards that counts.<sup>6</sup> Postfoundationalism has the advantage of making clear that the chief change we have to deal with is a change in the theory of knowledge. Also, unlike the term postmodernity, which implies that the cultural epoch called modernity has been superseded, postfoundationalism can be debated without resolving the cultural questions, for example whether postfoundationalism is now the dominant cultural movement or whether our society has now actually left foundationalism behind.

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<sup>5</sup> Clayton, *Explanation from Physics to Theology: An Essay in Rationality and Religion* (New Haven: Yale Univ. Press, 1989), e.g. chap. 2.

<sup>6</sup> See Clayton, *God and Contemporary Science* (Grand Rapids: Eerdmans, 1997), chapter 1.

Thus Wentzel van Huyssteen argues in his book in postfoundationalism:

The key to moving beyond [the epistemological problems in science and religion] lies not in radically opposing postmodern thought to modernity in a false dichotomy, but in realizing that postmodern thought shows itself precisely in the constant interrogation of foundationalist assumptions... Seen in this way, modern and postmodern thought are unthinkable apart from each other, and postmodernism is not simply modern thought coming to its end. In fact, when postmodern thought shows itself best in the interrogation of foundationalist assumptions, a fallibilist, experiential epistemology develops...<sup>7</sup>

Up to this point we have considered certain cultural changes, and certain changes in the theory of knowledge, which together have brought science and theology face to face in recent years—like two former enemies rounding a corner and suddenly being confronted with one another at close range and with no escape. A third factor has contributed to the constructive dialogues that are occurring at colleges and universities across this country and around the world: a major change in the self-understanding of science and scientists that has reduced the antagonism that formerly defined science’s relations with religion. I say “reduced” because some left-over antagonism still remains. Debates about science over the last 40 years have seen an attractive new mediating position arise out of what used to be a violent battle front between two major opposing views of science. The name *Karl Popper* was associated with the view that only when theories are decisively falsified in science can new ones take their place—hence with the view that science is purely objective. By contrast, the name *Thomas Kuhn* conveys the view that many nonrational factors gradually contribute to changes in scientific fashion, until a “conversion” (Kuhn’s word) takes place: one scientific paradigm loses supporters and a new one comes to dominate “normal science.”

Between the two views lies the (widely discussed) “research programs” methodology of Imre Lakatos. Lakatos held that the natural world does tell for or against a group of theories, but only over time and with some uncertainty. He writes, “It is not that we propose a theory and Nature may shout NO; rather, we propose a maze of theories, [a research program,] and Nature may shout INCONSISTENT.” He later put it, “Nature may shout *no*, but human ingenuity ... may always be able to shout louder.”<sup>8</sup> Research programs have their particular theoretical core, their predictions about the future, the type of research that they spawn. They cannot be falsified by running into problems with this or that specific theory, but the scientific community *can* tell, given sufficient time, whether a research program is progressing or degenerating. Lakatos’s theory of science is an excellent example of postfoundationalism. As van Huyssteen notes,

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<sup>7</sup> Wentzel van Huyssteen, *Essays in Postfoundationalist Theology* (Grand Rapids: Eerdmans, 1997), p. 78.

<sup>8</sup> Imre Lakatos, *Philosophical Papers*, ed. J. Worrall and G. Currie (New York: Cambridge Univ. Press, 1978), vol. 1, pp. 45, 111.

So what's the picture of science? In the end a holist epistemology ... demands a broader intersubjective coherence that goes beyond the parameters of the experience and reflection of just the believing community. ... Lakatos was right: We should indeed have criteria to help us choose between competing research programs.<sup>9</sup>

If we find ourselves drawn to holist conclusions in epistemology, then let it not be an *insular* holism that confines itself to traditions but rather an *inclusivist* holism that applies the very best of human reasoning in the search for overarching agreements at the broadest level.

I still encounter students and colleagues who worry that postfoundationalism amounts to a sort of special pleading: are religious thinkers simply trying to lower the hurdle that they have to surmount so that more religious statements can pass as knowledge with a lower obligation for evidence? But the winds of change are fanned not only by religious thinkers and theologians; philosophers of science with no interest whatsoever in religion are equally emphatic in proclaiming the bankruptcy of older "positivistic" model of science. Neither inductive force nor the certainty of falsification ensures the rationality or "truth-indicateness" of scientific theories. Historical, communal, and pragmatic factors influence theory choice; thus funding decisions of the National Science Foundation are not purely objective (in case you had any doubt!). Decisions between scientific theories are affected by numerous contextual factors, so that only over the long term and in retrospect can one decide on the most probable theory. Does all this make science relative, a product of fashion like the widening of cuffs or the shortening of skirts? No; indeed, one reason to avoid the postmodern label is to escape the flat-footed equation of scientific theories with cultural fashions.

As a result of these changes, the old dichotomies between scientific knowledge and religious thought have become suspect; we can no longer imagine a Grand Canyon forever dividing scientific from theological theories. Indeed, our culture, our environment, and our world cannot afford the separation either. I have argued that science does still justify a certain presumption in favor of naturalism, but it is now a *methodological* naturalism, a nuanced one, one that now leaves an exciting place for metaphysical and theological questions.

### **The New Call for Metaphysics**

This new understanding of science has left behind many of the old reasons for excluding metaphysical and theological reflection. Today many scientists, theologians and philosophers are proclaiming the need to build on the results of science and to think beyond them. Let us turn then to a more concrete question: what are some of the features of the natural world that call for theological reflection, and what might a constructive theology written in light of these factors look like? On the old model, in order to write such a theology one would first have to look at the empirical evidence, infer the existence of theoretical objects (be they quarks or God), and accept nothing beyond what the evidence justified. On the postfoundationalist model, one can espouse

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<sup>9</sup> van Huyssteen, pp. 87, 89.

theism (or another metaphysical view) without breaking any rules of evidence. Still, one must also take the input from science with the utmost seriousness. Theology now becomes *a quest for coherence*, an attempt to think one's religious belief together with the other beliefs she has reason to accept.

So what are the opportunities—but also the constraints and challenges to religious thinkers—opened up by recent science? I wish to focus on six in particular:

(1) Ours is a physical world characterized by an overwhelming degree of regularity. On the negative side, this means that a scientifically alert theology cannot simply begin with a series of interventions by God into the natural world. Miracles in the classical sense may be added as a sort of “lightning bolt from above” (as Karl Barth put it), recognizable only by faith, but they cannot be a part of a constructive theology developed in the fashion I am imagining. On the positive side, the world's regularity itself calls out for theological interpretation. What kind of a God is evoked by a natural world in which a surprisingly small number of natural laws gives rise to the beauty and complexity of the physical cosmos—not to mention to the exploding creativity of evolving life?

(2) What should we make theologically of the pervasively temporal nature of the universe? We find ourselves in a universe that is finite in extension and duration and that had a definite starting point in time (or, if Stephen Hawking is right, a universe that is finite and yet had *no* starting point in time). Whenever we look at thermodynamic events, we are presented with the ineluctable arrow of entropy, like a clock ticking toward an inevitable conclusion—a point in the distant but finite future at which all heat sources will burn out and physical interactions will decrease to almost zero, a “heat death” of evenly distributed matter at a uniform temperature a few degrees above absolute zero. Or will the universe collapse back into a singularity, the so-called Big Crunch, in an apocalypse of unbelievable magnitude? What can we say theologically about a universe that is pervaded by change and bounded by such strict (and finite) limits?

(3) We see a universe that seems “fine-tuned” for the emergence of life. Recent books by Michael Behe and Michael Denton, among others, show how large a number of physical constants had to fall within an incredibly narrow range if life was to emerge at all (and obviously, they have, since it has.) Biochemists such as Gerald Joyce and Jeffrey Bada at the Scripps Institution of Oceanography in San Diego, are arguing that, given the structure of the heavy elements, the arising of life, at least on earth, was not improbable. Bada argues that life began as a “boundary-less soup of replicating molecules”; only later did the first membranes arise by chance. And Joyce defines life as “a self-sustain[ing] chemical system capable of undergoing Darwinian evolution.”<sup>10</sup> If these biochemists are right, the boundary between living and nonliving things is much more porous than we thought in the past; the line between them is a hazy one, and motion across it can occur without direct divine intervention. What does this say about the nature of God and God's intentions in creating the universe?

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<sup>10</sup> Reported in *New Scientist*, July 13, 1998.

(4) It is a universe that seems to have a place for the conscious observer. Not only has the fine-tuning of variables made the arising of conscious beings if not inevitable then at least not surprising, but the “anthropic” principle proposed by Barrow and Tipler suggests that the appearance of conscious observers may have been a *necessary* feature of the physical universe. A major interpretation in quantum mechanics, the “Copenhagen” interpretation, requires an observer in order to resolve the probabilistic or “potential” state of quantum mechanics. In its most extreme form—the form propounded for instance by John Wheeler at Princeton—the entire universe may have existed in a state of quantum potentiality until the point at which the first observer emerged, at which point it was retroactively resolved into macro-physical structures such as stars, planets, and the like. What do such theories say about the status of human subjects in the physical universe? And what is the role of *God* as observer in this world?

(5) The neo-Darwinian synthesis in evolutionary biology suggests a developmental process that is unstructured and unguided, a process in which one can speak of purposes only as fictions but not as facts. By a process of random variation such as genetic theory describes, and selective retention by the environment based on survival value, more and more complex life forms emerged. Theologians are divided in the face of this challenge. The more conservative response has been to challenge the science involved, either because it (allegedly) conflicts with biblical revelation, or—as in Phillip Johnson’s famous attack in *Darwin on Trial*—because neo-Darwinian evolutionary theory is allegedly inadequate on its own terms. But another group, to which I also belong, takes the task of theology to be *not* to challenge science on its own proper ground—the ground of empirical conclusions and well attested theories—but *to think theologically in light of scientific conclusions*.<sup>11</sup> Those of us in this second group hold that the significance of theism for biology lies not in introducing a series of distinct divine interventions, as in the six days of creation of Genesis, but rather in reflecting on the nature of a God who would use physical regularities and the contingencies of natural history to bring about certain divine purposes. The biological sciences reveal teeming creativity, the solving of complex “tasks” by a huge variety of attempts over a very long period of time, and the contingency of the outcomes. (Biological evolution is radically contingent because another organism or structure might have attained equal survival value had it arisen, and the present “best solution” may become ill-adapted based on only minor changes in the environment, food chain, or balance between species.) And yet the whole process has clearly given rise to ever more complex life forms, including some capable of language, reasoning, self-consciousness, the pursuit of beauty, the concern with what they call right and wrong, and the use of moral predicates. What kind of a God would have chosen this route for achieving a conscious life form that is, as the Psalmist writes, “a little lower than the angels?”

(6) Finally, the explosion of progress in the neurosciences, spawned for example by better brain-scanning techniques, has begun to reveal a brain whose structure and functioning are capable of producing the most spiritual thought, feelings, and experiences. Far from the God of

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<sup>11</sup> The exception to this rule is when scientists have begun to pronounce on theological questions outside of the competence of their empirical field of study.

Descartes, who introduced into a clockwork physical universe a separate soul or spirit (*res cogitans*), which was responsible for all distinctively human behaviors, neuroscience today is only compatible with a God who has made every detail of mental functioning dependent on an extremely complex brain structure. The neurosciences do not, on my view, threaten to reduce the human mental life to “no more than” passing brain states, but they *do* require theologians to conceive a world in which what is distinctively human arises out of and depends upon underlying biological structures.

Each of these six areas represents a challenge for theology that arises out of contemporary science, and each can give rise to new and constructive reflection on the part of religious thinkers. Less obviously, perhaps, each one requires the development of mediating concepts that are able to link the scientific and religious worldviews in a meaningful fashion. Such linking concepts are, in the nature of the case, *meta-physical*. Their indispensability represents “the new call for metaphysics” that I mentioned above.

### **Toward a Metaphysics of Emergence**

It is, you can see, a fascinating time to be engaged in religion/science dialogue: the old epistemic hurdles have fallen, and our knowledge of the physical world is advancing by leaps and bounds. In the remaining minutes I would like to offer at least a sample of the sort of constructive work that is now called for, making use of one particular bridge concept: the metaphysics of emergence.<sup>12</sup> To what extent can this concept help to bridge the gap between recent scientific results and theistic belief?

Let’s begin with the six features that I mentioned a moment ago. This physical story has one recurring feature that cries out for theological reflection: again and again higher (i.e., more complex) structures emerge out of the lower, less complex physical structures. The higher levels are dependent on the less complex levels that precede them, and yet they are not exhaustively explained by the lower levels. What arises in chemistry, in the study of the cell, or in higher organisms is genuinely new. As much as it depends on its substratum, it also brings something novel—new regularities, new structures, new causes, perhaps even new realities. Can we develop a metaphysics of emergence sufficient for expressing this empirical pattern? And is the structure of emergence consistent with traditional theological assertions about God and God’s relation to the world?

On the model I propose, God is not a person but meta-personal. In an age when humans were viewed as little gods on earth—the only life form infused with an eternal soul, as Descartes

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<sup>12</sup> The following comments draw on the position recently published in *God and Contemporary Science*. But they also move beyond that view to address some of the criticisms that have been raised during the few months since the book appeared. See e.g. the four critiques of my “The Case for Christian Panentheism,” *Dialog* 37 (Summer 1998): 201-208, and my response to them, forthcoming in *Dialog* 38 (Summer 1999).



thought—it was natural to conceive God as *a* person, like humans, yet not limited by a body or by mortality. Of course, Patristic theology already maintained that God was not a person, although the Godhead consisted of the three persons: Father, Son, and Spirit. Theologians insisted that, though the divine persons were *like personae*—a Latin notion far from equivalent to the 20th century idea of persons!—person language falls short of truly describing the divine. This point was driven home to modern philosophical theology by Fichte, who showed in 1799 that an infinite person is a contradiction in terms, and by Tillich’s well-known argument that God is not person but the Ground of personhood.<sup>13</sup> Most recently, increased knowledge of the hierarchical structure of the natural world—sufficient complexity of structure at one level leading to the emergence of genuinely new properties at the next higher level<sup>14</sup>—has given us further reason to conceive God as *trans*-personal. Whatever “emerges” out of and above the level of human persons must be *meta*-personal. (Note that “emerges” here refers initially only to the order of discovery; at least some aspect of divine reality must have preceded and been responsible for creation in the first place.)

Modern theology has not yet achieved consensus on a conceptual framework adequate for expressing the God-world relationship beyond the category of personhood, which most acknowledge is not fully adequate. If we are committed to doing “theology from below,” this failure matters. Theology from below entails searching for the most adequate parallels and concepts to make sense of religious beliefs. What *are* the best available options? In particular, isn’t it appropriate to take the highest level of emergence known to us and to use it as the model for a theological reality of which we can form only a limited concept? The highest level known to us is *the emergence of mind* or mental properties from the most complicated biological structure known to us, the human body and brain. So the relationship suggests itself: the body is to mind as the body/mind combination—that is, human persons—is to the divine. We are analogous to the body of God, God is analogous to the mind that indwells the body, though God is also *more than* the natural world as a whole. I’ve called this the Panentheistic Analogy (PA),<sup>15</sup> since it points in the direction of *panentheism*, the belief that (roughly) the world is included within the divine, though God is also more than the world.

Now, think about the strengths of the PA for handling the problem of divine action in light of modern science. In one sense, all actions of the body are actions of the “self” of that body, while in another sense, the finger or leg or heart performs its “own” actions. And just as your “I,” the mental part of you, can perform certain actions that break past patterns (you can become an

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13. I have developed these ideas more fully in *Infinite and Perfect? The Problem of God in Modern Thought* (Grand Rapids: Eerdmans, 1999), chaps. 8 and 9 respectively.

14. See Arthur Peacocke, *Theology for a Scientific Age: Being and Becoming—Natural, Divine, and Human*, enlarged ed. (Minneapolis: Fortress, 1993).

15 I use “mind” as shorthand for the totality of mental properties, and not in the dualist sense of a thing, a different kind of substance that is somehow linked to the body.

international Mafia boss; you can perform an act of extraordinary heroism), in contrast to other things performed by your body that are highly patterned or habitual (your heartbeat, swallowing), so also one can ascribe to God focal or transformative actions as well as the regularities of causality that produce a lawlike universe. The power of the panentheistic analogy thus lies in the fact that mental causation, as every human agent knows it, is more than physical causation and yet still a part of the natural world. Apparently, no natural law is broken when you form the (mental) intention to raise your hand and then you cause that particular physical object in the world, your hand, to rise. The PA therefore offers the possibility of conceiving divine actions that express divine intentions and agency without breaking natural law.

### **Theologies of change and emergence**

Now there are also some disanalogies, of course, and I happily acknowledge that they, and others also, exist. Like Wittgenstein's ladder, the analogy should be used only as long as it helps us to ascend and then should be discarded. The theist will want to say that some aspect of God preceded the world and that some aspect of God would survive the destruction of the universe. Also, God will intend all the regularities of natural law, whereas you do not intend the motions made by your small intestines. Still, despite the disanalogies panentheism effectively expresses two vital theological truths that must be retained even when we reach the limit of mind/body talk: first, God must be everything that we are as persons (hence not an impersonal force such as karma) *and yet immeasurably more* than a finite person; and second, there is no place to locate a finite world outside an infinite God. Neither a theology of substances nor a personalist theology is able to do justice to both of these insights at the same time. In my view the combination of emergence and panentheism is the most promising framework currently available to theists, insofar as it meets the two criteria just mentioned, is consistent with the conclusions of modern science, and allows for divine action in the world without breaking natural law.

I have shown in *God and Contemporary Science* how emergence is consistent with the pre-existence of God (or at least of an aspect of God) to the world. Elsewhere I have spelled out the philosophical underpinnings of this view in some detail<sup>16</sup> and can only sketch them here. I advocate a dipolar doctrine of God in which the eternal nature of God preceded the world and the consequent (personal, responsive) side of God has emerged in the course of universal history. This assertion reflects my debt to Charles Hartshorne, who followed Whitehead<sup>17</sup> in distinguishing between the primordial and the consequent nature of God, and to Schelling<sup>18</sup>, who identified the Ground and the Consequent in God. (It's not often seen how close Schelling and Hartshorne are.

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16. Cf. the work cited in note 13 and its successor volume, *Immanent and Transcendent? The Problem of God since Feuerbach* (forthcoming).

17. A. N. Whitehead, *Process and Reality*, Enlarged Ed. (New York: Free Press, 1978), e.g. p. 345.

18. See Schelling's *Essay on Freedom*, discussed in *Infinite and Perfect?*, chap. 9.

Both emphasize the need for both an abstract essence and a concrete actuality in God.) Harts-horne’s work on both the doctrine of God and panentheism remains groundbreaking today, although I agree with Joseph Bracken<sup>19</sup> that corrections are needed to give enduring persons and societies a stronger ontological status. For these thinkers, the moment of creation inaugurates a bi-directional relationship of mutual influence between God and world and is a free act of God rather than a necessary entailment of God’s nature. Freedom entails that God be personal in nature prior to creation, which requires that God consist of multiple centers of agency; I still think that a trinitarian theology is the most successful way to meet this requirement.<sup>20</sup> Creation makes a world, but it also constitutes God; being related to this world, God acquires new qualities—not qualities that change the divine essence, but ones of which the divine life *ad extra* is composed.

### **The body metaphor and divine agency**

Various reservations have been raised about the body metaphor. Rather than fighting over less important details, let’s focus on what’s fundamental to this position. My first goal has been to conceive the world in a way that is compatible both with modern science and with divine agency. Clearly, the astounding success of the physical sciences has left less place for divine agency, at least in the physical world. If the modern separation of God and world is allowed to stand, divine action becomes inconceivable. On the one hand, a number of the attempts to solve this problem—say, by appealing to “double agency” (Austin Farrer), or asserting of some kind of “primary causality” underlying all scientific causes, or viewing history-as-a-whole as the one act of God (Maurice Wiles)—are not recognizably different from no divine action at all. On the other hand, miracles defined and recognized through the eyes of faith alone ignore rather than confront the challenge posed by scientific success (and may be incompatible with it); and the quest for a “causal joint” where divine interventions could occur has so far proved elusive. How then should one think God in relation to creation? I have suggested that one start from the side of monism, reducing the difference between God and world to its minimal essential features. Note that this is a *direction* of thought, a recommendation to begin theologizing at a different place.

The body metaphor should therefore be interpreted first in terms of agency. Before all else it says: God doesn’t create a machine that operates on its own, metaphysically separate from God. The physical world is itself an expression of divine action, though it’s an agency characterized by extreme regularity and lawlikeness. Agents, divine or otherwise, who wish to do something in the physical world must do it by means of bodies. Since God’s agency can’t be limited to one particular body, as ours is, it must stand in relation to the entire universe as we stand in relation to our bodies. Wherever there is regularity, it reflects the divine nature and choice. It turns out to be a

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<sup>19</sup> See esp. Joseph Bracken, *Society and Spirit: A Trinitarian Cosmology* (London and Toronto: Associated University Presses, 1991)

<sup>20</sup> Presented in more detail in my “Pluralism, Idealism, Romanticism: Untapped Resources for a Trinity in Process” in Joseph Bracken, S.J., and Marjorie Hewitt Suchocki, eds., *Trinity in Process: A Relational Theology of God* (New York: Continuum, 1997).

feature of this regularity that it produces a chain of increasing complexity which we call life, that independent centers of agency gradually emerge, and that at very complex levels these agents evidence freedom, self-consciousness and rational thought. In this sense persons arise out of and within God's autonomous agency. Note that, whereas finite agents can control only some but not all of their body's behavior (e.g., we can't control our blood vessels or intestines), God could in principle control *any* part of the physical world to which God is related. Finite agents cannot attend to every part of their bodies, and they sometimes experience their body's recalcitrance or resistance to their wishes, but these are limitations unknown to God.

The overwhelming impression of the physical world is its lawlike order. Why would God, if able, not intervene to break this order, say to reduce suffering? A number of reasons suggest themselves. For one, place must be left for finite agents to exercise agency—for instance, for you to form intentions and act through your own body. This can occur only through divine self-limitation. Second, to be able to act, or to gain knowledge of the world, agents need a context of regularity. A physical world in which God is manifested through natural law provides that sort of context. By contrast, a world in which the murderer's bullet turned into a flower the moment before impact would be one in which rational agency would be impossible. Finally, natural science is only possible on the assumption that the causal histories of events can (at least in principle) be traced and studied. If physics cannot explain cell reproduction, biology can; if biology cannot explain human action, psychology can (and if psychology cannot explain religious experience, perhaps theology can). In each case the complexity of the lower level leads one to expect the emergence of higher-order phenomena and explanatory principles. But this ordered emergence is very different from using "God did it" as the explanation for physical anomalies. If any physical anomaly could be the result of direct divine intervention, natural science would be impossible.

One last comment: note that one can assert the Panentheistic Analogy—God has a similar kind of relation to the world as we have to our bodies—without asserting that the world *is* God's body.<sup>21</sup> Panentheism's success turns in the first place not on an identity relation, and not on a spatial concept of inside versus outside, but on its ability to give a more adequate account of divine agency than its competitors. We exist as embodied subjects, and our only understanding of agency presupposes embodiment. It is not essential to God to be an embodied subject; God's agency over the world is not essentially limited as is our control over our bodies (I still can't hit the tennis serve that I can visualize). Still, in being genuinely related to creation, God exercises a type of agency analogous to our own. All (regular, lawlike) occurrences in the physical world are conscious divine acts and are revelatory of the divine nature; none are just results of a natural order ticking along outside of or apart from God. For God *all* activity involves agency; God has pervasive conscious awareness—or better: an awareness that is higher than consciousness.

### Stepping back to evaluate

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21. See Grace Jantzen, *God's World, God's Body* (Philadelphia: Westminster Press, 1984).

I have argued that there are two categories of divine action, which I've called autonomic and focal divine action. Neither conflicts with scientific method or results, and together they are sufficient to preserve the agency of God required for theism. For the pantheist, every physical event is an act of God; hence the world's regularity reflects a (contingent) divine choice and expresses God's character. But God also exercises a "downward" causation or lure on mental states, just as our mental states can exercise downward causation on the brain as a whole and, through it, on our bodies and the world. What are some of the major questions that have been raised about this view, and what answers might be given to them?

Does pantheism stumble fatally over a preposition ("in"), as some critics think? Is it either trivial, asserting what Christian theology has always held (e.g., that God is omnipresent), or just blatantly wrong? It does not seem that the critical salvos have proved fatal to this theology. The mystical traditions, for example—not to mention many forms of "perennial philosophy"—provide precedents for speaking of the world as "in" God. (The first model for me was the concept of *en Christo* used repeatedly by St. Paul.) Moreover, using the pantheistic analogy as a metaphor for divine action decreases the stress on the spatial relations of "inside" and "outside."

What about evil, since on this view God is so closely associated with the world? Well, is the problem any worse for pantheism than for the classical doctrine of the omnipresence of God? Also note two key differences of emphasis. First, theists have often started with God's presence to redeemed persons (and/or redeemed creation, or in Jewish theology, with God's relation to his chosen people), speaking of the divine presence to the rest of the world only in a secondary or derivative sense. By contrast, pantheism does not begin with God's special presence to some but with a universal presence to all, moving from thence toward theories of special presence. The same emphasis on universality is reflected in pantheistic doctrines of divine action (we first conceive God as active in *all* things and derivatively as exercising focal agency) and in our views on revelation (the general revelation of the divine nature in the world precedes and provides the context for understanding special revelations). This leads to a second contrast with classical theism, a difference of emphasis in the face of evil: instead of *God's pulling away* from those things that do not now manifest the nature of God, comfortably excising them from the divine like a virus or cancer, pantheism suggests a picture of the divine as transforming and healing them, as a healthy body might heal itself from an injury

Both Judaism and Christianity have emphasized the importance of justice, of embodying the love of God in and for the world. But how can one embody the divine presence without allowing God to *become embodied*; does one really need to insist upon this asymmetry? As Sallie McFague writes, "The world is the bodily presence, a sacrament of the invisible God."<sup>22</sup> I suggest that the connotations of embodiment theologies are fruitful for religious life and practice: for understanding the sacraments (which make the divine "visible and palpably present"), for under-

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22. See Sallie McFague, "The World as God's Body," *The Christian Century* (July 20-27, 1998): 671-72; see also her *The Body of God: An Ecological Theology* (Minneapolis: Fortress Press, 1993). The following quote is from the same source.

standing the suffering of God, for comprehending the risk and the costs to God in loving the world, and for encouraging an environmentally conscious lifestyle, the “greening of theology.”<sup>23</sup>

## Conclusion

In these few pages, I’ve attempted to take on the challenge raised by a number of participants at this conference<sup>24</sup>: to show why a post-foundationalist theory of knowledge and new developments in the self-understanding of science encourages constructive religious thought. As many at the conference argued in their papers, religion can contribute to a worldview that synthesizes the best that science has to offer with the best religion has to offer. Sometimes the contribution of religion is ethical: it affects how we live. Sometimes its interior, adding inner insight and power.<sup>25</sup> And sometimes it’s theological or metaphysical: it assists one in formulating a religious worldview adequate to the science of our day. It’s this theological dimension that I’ve focused on here.

In particular, I sought to show how one particular model—emergentist panentheism—can integrate the scientific and religious poles of human experience. Each of the metaphors used by panentheists brings us only so far: the *spatial* metaphor of the world as within God, the mind-body metaphor for the relation of God to world, the womb metaphor (of the world as being birthed with in God). But I suggest that they do carry constructive religious thought further than any other metaphors available to us. Or, more precisely: they pick up nicely where the personalist metaphors are forced to leave off and help move religious reflection just those steps further that it most needs to take today.

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23. See Steven Bouma-Prediger, *The Greening of Theology: The Ecological Models of Rosemary Radford Ruether, Joseph Sittler, and Jürgen Moltmann* (Atlanta: Scholars Press, 1995).

<sup>24</sup> I am especially grateful for a forceful formulation of the problems by Jack Pearce at the very beginning of the ILS conference.

<sup>25</sup> In a helpful distinction, Dr. Raman calls this inner focus the “endo-potent” approach, contrasting it with “exo-potent” approaches that emphasize the external.