REMEMBERING ARTHUR PEACOCKE: A PERSONAL REFLECTION

by Ian G. Barbour

Abstract. I join others who have expressed profound gratitude for the life and thought of Arthur Peacocke. I recall some high points in my interaction with him during a period of forty years as an intellectual companion and personal friend. Some similarities in our thinking about evolution, emergence, top-down causality, and continuing creation are indicated. Four points of difference are then discussed: (1) Emergent monism or two-aspect process events? (2) Panentheism or process theism? (3) Creation *ex nihilo* and/or continuing creation? (4) Voluntary or necessary limitation of God's power? Even when we differed I have benefited immensely from our ongoing interaction.

Keywords: creation; emergence; evolution; Charles Hartshorne; kenosis; panentheism; Arthur Peacocke; John Polkinghorne; process philosophy; top-down causality; Alfred North Whitehead

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Since his death on October 21, 2006, several authors have expressed gratitude for various aspects of the life of Arthur Peacocke and his enduring contributions to the dialogue between science and religion. Robert Russell (2007) highlights his publications and his leadership in the founding of such institutions as the Ian Ramsey Center in Oxford and the European Society for the Study of Science and Theology. Ann Pederson (2007) writes about his interest in poetry, music, and painting and his appreciation of liturgy and the sacraments. Philip Hefner (2007) celebrates his skill in communicating his reformulations of traditional doctrines in the light of contemporary science. Philip Clayton (2007a) tells of his courage and persistence in writing as his cancer progressed.

During those final months Clayton edited Peacocke's last manuscript and solicited responses to it from ten authors. He included Peacocke's text,

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the responses, and Peacocke's replies to them in a volume titled *All That Is: A Naturalistic Faith for the Twenty-First Century* (Peacocke 2007). The book is a beautiful expression of Peacocke's interaction with other scholars even in the last months of his life. I would like to testify to my profound gratitude for interactions with him over a period of nearly forty years, first as an intellectual companion and then as a personal friend.

In the 1970s he evidently felt indebted to me. In the Preface to his first interdisciplinary book, *Science and the Christian Experiment,* he graciously acknowledged a volume of mine that had appeared five years earlier:

> An attempt of this kind cannot hope to deal at all fairly and comprehensively with the many issues on which there should be at least a dialogue between those involved in the scientific and theological enterprises. These have been magisterially surveyed by I. G. Barbour in his *Issues in Science and Religion* (London, 1966) and I willingly refer the reader to that systematic and documented account. (Peacocke 1971, vi)

In his next two books, *Creation and the World of Science* (1979) and *Intimations of Reality: Critical Realism in Science and Religion* (1984), he drew from my *Myths, Models, and Paradigms* (Barbour 1974). On methodological issues we had both read such authors as Mary Hesse, Ian Ramsey, and later Sallie McFague and Janice Soskice, who had written about the role of metaphors, analogies, and models in both scientific and religious thought.

In the 1980s I learned a great deal from his writing, especially *God and the New Biology* (Peacocke 1986), a volume that included several previously published articles, and from correspondence and then personal interaction with him. Despite our differences I felt more commonality with his viewpoint than with any other contemporary writer. We agreed in pursuing a *theology of nature* that starts from religious experience and a historical tradition and reinterprets them in the light of science, rather than seeking a *natural theology* that relies on scientific evidence alone. We both defended a view of the world as an open-ended process whose future cannot be known even by God. We both portrayed a role for chance as well as law and divine purpose in the unfolding of events, which we referred to as *continuing creation.* We defended a dipolar concept of God as temporal in some respects and eternal in others. The presence of suffering and human freedom, as well as the Christian understanding of the cross, led us to argue that God participates in the world's suffering. We spoke of the self-limitation of divine power (*kenosis*) and of God's empowerment of creation from within rather than power over creation by intervention from without.

I gave the first half of my Gifford Lectures in 1989 and subsequently added three historical chapters (Barbour 1990 and 1997). The second half of the lectures, given in 1990 and then expanded (Barbour 1993), dealt with ethical issues arising from the environmental and human impacts of applied science and technology—concerns that Peacocke shared, but to which he gave less attention in speaking or writing. His *Theology for a*

Scientific Age was published in 1990 and republished in an enlarged edition that included chapters on human nature and Christology given in his 1993 Gifford Lectures (Peacocke 1990 and 1993). I greatly appreciated his detailed elaboration of themes about which I had written in more general terms: the presence of a hierarchy of levels of organization in nature, the emergence of new patterns of activity at higher levels that could not be explained by laws governing lower levels, and the causal influence of higher-level patterns on those at lower levels. We both continued our earlier critiques of epistemological and ontological reductionism.

In 1991 he was a participant in the first of a series of six conferences on "Scientific Perspectives on Divine Action," organized by Bob Russell and cosponsored by the Center for Theology and the Natural Sciences (CTNS) in Berkeley and the Vatican Observatory near Rome (Russell, Murphy, and Isham 1993). Each of these conferences involved extensive exchanges among us, starting with written responses by all participants (scientists, philosophers, and theologians) to preliminary drafts of each paper submitted three months beforehand. The five days of each conference were devoted entirely to discussion of these drafts and responses in far more detail than most conference schedules allow. Arthur's views were crucial in many of these explorations. His perceptiveness, enthusiasm, humility, and humor were in evidence throughout. His wife, Rosemary, was on several occasions a delightful presence at our meals together and in organizing trips of the participants' spouses to explore Rome together.

In 1996 John Polkinghorne wrote a volume titled *Scientists as Theologians: A Comparison of the Writings of Ian Barbour, Arthur Peacocke, and John Polkinghorne.* He is clearly correct in saying that of the three he has followed traditional Christian thought most closely. For example, he accepts the virgin birth and the bodily resurrection of Jesus, which Peacocke and I question on both textual and theological grounds. Polkinghorne claimed that I depart furthest from tradition by giving science too large a role in the reinterpretation of classical doctrines. I do not agree that my theology tends to be "assimilated into science" (Polkinghorne 1996, 7). I grant that in some respects Peacocke is closer to classical Christianity than I am, for example in passages in which he extends sacramental language to portray divine immanence in the world, whereas I use the less familiar concepts of process thought to express God's involvement in all events. On the other hand, he was willing to use the term *naturalism* to refer to his noninterventionist view of God's action in the world, which might seem to put him further from classical theism.

I prefer not to identify myself with naturalism, even in Peacocke's minimalist sense, because the word is commonly used to refer to defenders of materialism, physicalism, or a pantheism that equates the divine with the impersonal creative cosmic process—all of which assert that "nature is all there is." However, both Peacocke and I hold that God is transcendent as

well as immanent and "at least personal" (with the intentions and purposes we associate with personal agency). I would say that the differences between Peacocke and myself have been minor compared to the wide range of agreement in our understanding of God, evolution, emergence, and human nature.

I do agree with Polkinghorne's thesis that the three of us who were trained in both scientific and theological disciplines were able to open up some space for a significant dialogue that subsequent authors have been extending. We were each honored by receiving the Templeton Prize for Progress in Religion, I in 1999, Arthur in 2001, and John in 2002. But we also had our limitations. We did little to explore the applicability of our ideas beyond Judaism and Christianity to Islam and Asian traditions. We also until the last decade gave little attention to anthropology, psychology, and neuroscience, which are crucial to any discussion of human nature. The growth of a truly global and interdisciplinary discussion is only starting and remains a task for the future.

It would be in keeping with Peacocke's enduring interest in dialogue with colleagues to indicate what I see as our main points of disagreement, even if there is sadly no opportunity for him to reply to my comments.

Emergentist Monism or Two-Aspect Process Events?

Peacocke calls his view *emergent monism*. *Monism* is a rejection of all dualisms within the world, especially mind/matter or soul/body dualisms. *Epistemological emergence* (as contrasted to epistemological reductionism) is the thesis that events at higher levels of complexity in evolutionary history (or within a living organism today) cannot be explained by laws or theories governing events at lower levels. *Ontological emergence* (as contrasted to ontological reductionism) is the thesis that patterns of events at higher levels influence events at lower levels (*top-down causality*). Higher-level events, Peacocke asserts, can be considered real if they are causally effective, which they are by setting boundary conditions on lower-level events without violating the laws applicable at lower levels. He also speaks of *whole-part constraints* in describing how systems influence the behavior of their component parts (Peacocke 2007, 12–16).

Process thinkers similarly maintain that parts behave differently in different contexts and environments. They hold that all entities are constituted by their relationships in time and space, not by what they are in themselves at any moment. But Peacocke differs from process thought in insisting that entities at lower levels are totally devoid of anything resembling the subjectivity, interiority, or experience found at higher levels. To be sure, he does say that in evolutionary history molecules and cells had the built-in *potentialities* and *propensities* to produce subjectivity when suitably organized, but for him subjectivity is an emergent property not previously even minimally present.

Process thought holds that the basic constituents of reality are not two kinds of enduring entity (mind/matter dualism) or one kind of enduring entity (idealism or materialism) but rather *one kind of event with two aspects or phases.* It is postulated that every momentary entity has an objective phase in which it is receptive from the past and a subjective phase in which it is at least minimally creative toward the future. This philosophy is monistic in portraying the common character of all events, but it recognizes that events can be organized in diverse ways, leading to an *organizational pluralism* of many levels. All integrated entities at any level have an inner and an outer reality, but these take very diverse forms at differing levels. In simple organisms interiority takes the form of rudimentary memory, sentience, responsiveness, and anticipation. Viewed from within, interiority can be construed as a moment of experience, though conscious experience occurs only at higher levels of organization. This should be called *panexperientialism* rather than *panpsychism* since not even rudimentary forms of mind or mentality are attributed to simple organisms. Genuinely new activities and entities emerge in evolutionary history, but the basic metaphysical categories should be applicable to all events (Barbour 2001, 35).

Alfred North Whitehead himself argued that indeterminacy and an infinitesimal capacity for novelty could be postulated even at the level of separate atoms as a form of interiority and not just as a forerunner of interiority. I believe that he gave insufficient attention to the radically different ways in which universal categories might be exemplified at different levels. In this regard Charles Hartshorne and subsequent process thinkers gave greater recognition to the diverse kinds of organization that can occur in systems. They said that stones are mere aggregates with no organization more complex than molecular attraction, so they have absolutely no unified experience or subjectivity. Invertebrates have elementary sentience, perception, and capacity for action. The development of a nervous system made possible a far more complex unification of experience and new forms of memory, learning, anticipation, and purposiveness. But consciousness and mind appear only in higher levels (Barbour 2001, 34–37, 94–95). Such an organizational pluralism is consistent with Peacocke's view, but process thought postulates an interiority in integrated entities at all levels which he did not accept.

Clayton agrees with Peacocke in advocating emergent monism. His writing is at many points indebted to process philosophy, but like Peacocke he rejects the presence of a subjective aspect at lower levels—partly because there is insufficient scientific evidence for it, and partly because he thinks process thought neglects the radical novelty of the emergence of mind or mental properties at higher levels. "There is something very unemergentist about Whiteheadian theologies since they hold awareness or experience to be fully present from the very first moment of the universe's history, albeit

in rather primitive form" (Clayton 2004, 211). Clayton holds that God acts from a higher level on the thoughts and emotions of human beings, but God's role in the lives of simpler organisms (both earlier in evolutionary history and today) has been confined to upholding order and regularity. "I have argued that the human person, understood as integrated self or psychophysical agent-in-community, offers the appropriate level on which to introduce the possibility of divine agency. Here, and perhaps here alone, a divine agency could be operative that could exercise downward causal influence without being reduced to a manipulator of physical particles or psychotropic neurotransmitters" (2004, 198).

By limiting God's role in life forms lower than animals to providing built-in propensities and maintaining lawful regularities, both Peacocke and Clayton seem to have departed further than process theology from the biblical view that God is active as the Holy Spirit throughout the created world (see Psalm 104:30, for example).

Panentheism or Process Theism?

Both Peacocke and Whitehead claim that classical theism emphasized divine transcendence more than divine immanence and that the balance needs to be corrected. Both of them provide strong representations of immanence without denying transcendence, but they do it in differing ways.

Peacocke defines *panentheism* as "the belief that the Being of God includes and penetrates the whole universe, so that every part of it exists in God, and (as against pantheism) that God's being is more than, and is not exhausted by, the universe" (Peacocke 2004, 145). He rejects the analogy proposed by some panentheists that God is to the world as the human mind is to the human body. He says that the analogy presupposes a mind/body dualism and envisages God as the world's mind. He thinks classical theology's overemphasis on transcendence is closely related to its dualistic account of human nature:

> In my view, the panentheistic model allows one to combine a strengthened emphasis on the immanence of God in the world with God's ultimate transcendence over it. It does so in a way that makes the analogy of personal agency both more pertinent and less vulnerable than the Western externalist model to the above distortions of any model of the world as God's body. (Peacocke 2004, 151)

Peacocke also points to the limitations of the analogy of the world as God's body. We are not aware of many of the processes going on in our bodies, but God is aware of all events in the world. God has no need of the cosmic equivalent of a nervous system, because God is omnipresent and omniscient. Persons do in some ways transcend their bodies, but they did not bring their bodies into existence; God infinitely transcends the world and brought it into existence. (We should note that Hartshorne does speak of

the world as God's body—but in the context of process thought in which minds and bodies have the two-aspect social character described above.)

Peacocke supports panentheism by extending to God the notion of *whole-part constraints* developed in considering natural systems. God as "the most inclusive whole" acts on "the world-as-a-whole," which is "a system-of-systems," in order to influence particular events without violating any laws or regularities (Peacocke 2007, 45). However, as Clayton points out (2007b, 169), the conceptuality of whole-part influence taken from systems theory and organismic biology does not allow for such characteristics of personal agency as purpose and intention. The idea of top-down causality from higher to lower levels, extended to include God as the highest level, seems subject to the same criticism, though perhaps a hierarchy of levels allows for greater diversity and temporality than the spatial and structural concept of wholes and parts. Peacocke also suggests that top-down causality can be understood as the transfer of information and patterns of form, whether between levels in complex organisms or between God and the world.

Peacocke writes that in the past he held that God could act everywhere in space and time "to holistically affect the state of the world at all levels." But, in the light of recent discussions of divine action,

> . . . it is perhaps more acceptable if the whole-part influence of God is understood to operate mainly at the level of the human person, the emergent reality of which is located at the apex of the systems-based complexities of the world. God would then be thought of as acting in the world in a whole-part manner by influencing human personal experience, an influence that thereby affects events at the physical, biological, and social levels. . . . I am inclined to postulate divine whole-part influence at all levels, but with an increasing intensity and manifestation of divine intention from the lowest physical level up to the personal level, where it could be at its most concentrated and most focused. (Peacocke 2007, 46–47)

In process thought God does not have to act as a top-down or whole-part influence because God is already active at all levels as one factor in the unfolding of every event. Every new occurrence is a present response (self-cause) to past events (efficient cause) in terms of potentialities grasped (final cause). Whitehead ascribes the ordering of potentialities to God. God as *the primordial ground of order* structures the potential forms of relationships before they are actualized. God is also *the ground of novelty* in presenting new possibilities among which alternatives are left open. God elicits the self-creation of individual entities, allowing for creativity as well as structure. By valuing particular potentialities to which particular creatures can respond, God influences the world without ever determining it. God acts by being experienced by the world, though not of course consciously. But God never determines the outcome of events or violates the self-creation of any being. Every new entity is the joint product of past causes, divine purposes, and the entity's own activity (Barbour 2000, 175).

In process thought, God's influence for change is minimal at the atomic or molecular level, where order predominates over novelty, so it is not surprising that it took billions of years for life to emerge. At higher levels with more complex organization the evolution of consciousness and then self-consciousness could occur more rapidly. In human life there is a much greater variety of possibilities of fulfilling divine purposes—or of failing to fulfill them (Cobb and Griffin 1976, 63–79). Process thought thus ascribes to God a direct influence on the world in the earlier stages of evolutionary history, whereas Peacocke relies on built-in potentialities or more indirect whole-part (or top-down) influence prior to the emergence of higher life forms capable of more direct response to God. He rejects the Whiteheadian notion of a "special 'lure' in the process" that would allow special actions of God going beyond a general providential ordering:

> I see no need to postulate any *special* action of God—along the lines, say, of some divine manipulation of mutations at the quantum level, or of some special "lure" of God in the process—to ensure that persons emerge in the universe, and in particular on Earth. Not to coin a phrase, "I have no need of that hypothesis"! In other words, the whole process leading to the emergence of persons can be satisfactorily accounted for as a purely naturalistic one and as therefore implemented by God's *general* providential ordering of and immanent presence in the world. There is no obligation of the part of theists to invoke any *special* providential action by God. . . . (Peacocke 2001, 33)

Process thought seems to provide opportunity for special providential action in "the whole process leading to the emergence of persons," which Peacocke denies.

Creation *ex Nihilo* or Continuing Creation?

Peacocke puts his main emphasis on continuing creation, as evident in the following:

> Natural systems, it transpires, have an inbuilt capacity to produce new realities; hence any theistic understanding has to recognize that this is the mode and milieu of God's creative activity. . . . A theistic naturalism may be expounded according to which natural processes, characterized by the laws and regularities discovered by the natural sciences, are themselves actions of God who continuously gives them existence. . . . God has again to be conceived as continuously creating, continuously giving existence to what is new. God is creating at every moment of the world's existence in and through the perpetually endowed creativity of the very stuff of the world. . . . We now have to think in terms of *God as Creator continuously giving existence with time to processes* that have the character that the sciences unveil; these processes would not go on being and becoming in their particular ways if God were not so continuously giving them an existence. (Peacocke 2007, 11, 17, 19, 20)

Peacocke says that the essential meaning of creation *ex nihilo* ("out of nothing") is an assertion of the creativity of God and the contingency of a world that did not have to exist or to have the form it has. He concludes

that the distinction between *ex nihilo* and *continua* therefore collapses (Peacocke 2007, 20). He does not want to identify *ex nihilo* with the Big Bang, much less with a beginning in time. However, he wishes to preserve the doctrine as an ontological rather than historical assertion.

Whitehead also rejects the idea of creation *ex nihilo* as an act of absolute origination, and he gives a version of continuous creation. God always acts with other causes, and yet all beings in the world depend on God for their existence and for the ordering of possibilities in their "initial aim," and "in this he can be termed the creator of each temporal actual entity" (Whitehead 1929, 343). While creativity is universally present in the self-creation of every entity, God is the primary instance of creativity and is active in all its instances. "He is not *before* all creation but *with* all creation" (p. 521). God has never been without a world, though there may have been other cosmic epochs with other worlds different from ours. In every moment there is given to God a world that has to some extent determined itself. But this is not Plato's Demiurge or the Manichaeans' God struggling to impose form on recalcitrant matter, for in process thought nothing in the universe exists in independence from God. Compared to Whitehead, Peacocke indeed gives a stronger representation to transcendence by using *ex nihilo* to symbolize the ontological distance between God and the world, but their difference is not as great as one might at first assume.

Peacocke's view is immune to challenge by evidence from physical cosmology because for him *ex nihilo* does not refer to a historical event. Whitehead's view, however, may be challenged because he posits an infinite temporal past. Steady-state theories do assume an infinite past, but they are inconsistent with the accumulated evidence for a Big Bang 14 billion years ago. Theories of an oscillating universe, with a Big Crunch before each Big Bang, would be consistent with an infinite past, but recent evidence suggests that our universe is expanding too rapidly for it to slow down and eventually contract. Theories of multiple universes arising from quantum fluctuations are advocated by many cosmologists today. Our whole universe would be one of many coexisting universes like a sea of bubbles expanding too rapidly to be in communication with each other. According to eternal inflation theory, both time and the number of universes are infinite. In another version, black holes create "baby universes" with random variations in their laws. String theory also provides for a huge variety of possible universes, although it is still highly speculative because it involves energies far higher than can be produced in the laboratory (Carr 2007; Vilenkin 2006).

Multiverse theories are sometimes supported by atheistic cosmologists because they provide an answer to the apparent design seen in the fine-tuning of the fundamental constants of nature. If these seemingly arbitrary constants had differed by even a minuscule amount from the values they have, the expansion of our universe would have been too fast or too slow

for life and mind to evolve (the Anthropic Principle). But if there are an infinite number of universes and the constants vary from one universe to another, perhaps from quantum uncertainties in their earliest stages when they were very small, then we just happen to be in a universe suitable for life and mind, one of the lucky winners of the cosmic jackpot. The theist can of course reply that this only pushes the question of design to another level. Who or what designed the system of multiverses, the quantum laws, and the biological processes that made life and mind possible? (Davies 2007)

The simplest cosmological option is a unique Big Bang, a theory that does not postulate multiple unobservable universes. This option assumes a beginning of time and appears closest to a literal interpretation of *ex nihilo.* It would require a departure from Whitehead's view of infinite time, which was formulated before evidence for the Big Bang was so strong. In process thought, the limitation of God's power over events within cosmic history arises from the influence of the past and from the presence of chance and human freedom. These limitations would not have been present in the earliest moments of the universe before even quarks existed. The pure potentialities in the primordial nature of God could have been more readily and rapidly realized in those dramatic early moments of the Big Bang than in subsequent history, involving a more unilateral exercise of divine power, as the *ex nihilo* tradition affirms. However, to accept this interpretation we would have to make revisions of Whitehead's thought not required by multiverse theories (Barbour 2001, 114–16). It would require distinguishing God's role in establishing the universe from God's self-limitation throughout history, as discussed below.

Limitations of God's Power: Voluntary or Necessary?

Traditionally God was said to be eternal, unchanging, and impassible (not influenced by events in the world). Peacocke agrees with Hartshorne in defending a dipolar concept of God as temporal and changing in interaction with the world but eternal and unchanging in character and purpose (Hartshorne 1948). Like Hartshorne, he holds that God's knowledge changes. If the future is really indeterminate and open, even God cannot know the future until it has been decided by finite beings for whom chance and freedom are real. He specifically rejects the classical view that God in eternity sees all of time spread out simultaneously even though finite beings cannot predict or foresee indeterminate events (Peacocke 1993, 128). The classical view implies that God predetermines or predestines all events, or at least that temporal succession and novelty are not fully real to God. Peacocke would agree with Hartshorne that classical Christianity attributed a one-sided perfection to God in exalting being over becoming, permanence over change, eternity over temporality, and self-sufficiency over relatedness.

Peacocke maintains that the classical idea of omnipotence is not compatible with the reality of freedom in human life.

> To instantiate truth, beauty and goodness, that is value, in the created order, the possibility of generating a *free* being had to be incorporated as a potential outcome of the cosmic processes. The cost to God, if we dare so to speak, was that in the act of self-limitation, of *kenosis,* which constitutes God's creative action—a self-inflicted vulnerability to the very processes God had himself created in order to achieve an overriding purpose, the emergence of free persons. . . . If God is immanently present in and to natural processes, in particular those that generate conscious and self-conscious life, then we cannot but infer that *God suffers in, with and under the creative processes of the world* with their costly, open-ended unfolding in time. (1993, 123, 126)

Peacocke also holds that God respects the integrity of nature and does not violate the very structures and regularities established to fulfill God's purposes. It would be a defective creation that required frequent tinkering to achieve its intended goals (2001).

The problem of evil (theodicy) is another reason for questioning divine omnipotence. Why would a good and all-powerful God let evil and suffering persist? How could God allow the slaughter of Jews at Auschwitz or the torments of children with AIDS if God had the power to prevent them? Suffering may sometimes lead to courage and moral growth and may evoke sympathy in others, but these positive consequences can hardly justify the prevalence or intensity of suffering. The answer given by both Peacocke and process thinkers is to suggest a limitation of God's power rather than of God's goodness. In addition, for the Christian the cross is a symbol of God's participation in suffering and God's ability to transform evil by love rather than to prevent it by an exercise of power.

Whitehead rejects the monarchial model of God as "imperial ruler." Instead he speaks of God as "the fellow-sufferer who understands" (Whitehead 1929, 352). He defends "the Galilean vision of humility" in which God offers "tender care that nothing be lost." While the "primordial nature" of God is the source of all possibilities, the "consequent nature" of God is influenced by the world. This is a God of interaction and persuasion rather than unilateral coercion. God is not powerless, but process thought offers a different concept of divine power: power that empowers rather than overpowers. Empowerment is not a "zero-sum" game in which one person's gain is another person's loss, but rather a "positive-sum" game in which both parties can gain. Here one can see parallels with the feminist theologians who have given attention to the caring and nurturing aspects of human nature—and of God—that have been less highly respected historically than the characteristics of power as traditionally conceived. The virtues that are taken to be "masculine" in Western culture (such as power, control, independence, and rationality) have been held to be superior to the allegedly "feminine" virtues (such as nurture, cooperation, interdependence and emotional sensitivity) (McFague 1987).

Peacocke holds that *kenosis* is a voluntary self-limitation, or, as he says in the passage quoted above, "a self-inflicted vulnerability to the very processes God himself created." In process thought, however, the limitations of divine power are a metaphysical necessity. Hartshorne elaborates a metaphysics in which all beings, including God, are inherently social and interactive. Every being has passive and receptive capabilities as well as active and causally effective ones. No being can have a monopoly of power or effect unilateral control. But it is not as if the presence of the world limits God's otherwise unlimited power; rather, God is inherently social and interactive. If God's nature is to be loving and creative, we cannot say that God was once omnipotent and chose to set such powers aside. Hartshorne objects to divine omnipotence on moral as well as metaphysical grounds. Within a social view of reality, persuasion has a higher moral status than coercion, even if it entails greater risk of evil and suffering. He says that God does all that it would be good for a supreme being to do, though not all that it would be good for other beings to do for themselves. Although not omnipotent, God is omnipresent, everlasting, omniscient (in knowing all that can be known), and perfect in wisdom and love (Hartshorne 1953; 1984). So perhaps in God's case we cannot really distinguish between voluntary and necessary limitations or between God's free choice and God's unchanging nature.

I suggest that we must also relate our understanding of divine power to religious experience. Most of the world's major religious traditions have included two strands of religious experience. The first is *mystical union* associated with meditation and contemplation. Here all dichotomies (human/divine, subject/object, time/eternity) seem to be overcome in identity with the One beyond time and space. The second is *numinous encounter* as described in Rudolph Otto's *The Idea of the Holy* (1923). Its characteristics are a sense of awe, reverence, mystery, wonder, holiness, sacredness, and being grasped by something greater than oneself. Typical responses are humility, worship, and obedience—and acknowledgment of distance from God rather than unity with God (Barbour 1997, 121–23). Such experiences suggest that, without denying the idea of God as immanent and empowering from within, we need to speak of God's transcendence and power over the world. Here as elsewhere I have adapted rather than adopted Whitehead's view, even as I have adapted rather than adopted classical Christianity. I believe that most of these neo-Whiteheadian modifications have brought me closer to Peacocke's views.

Conclusion

A number of additional topics in Peacocke's writing could be explored, such as methodology, human nature, Christology, eschatology, ethics, and of course theological responses to specific scientific disciplines from quan-

tum physics to neuroscience. On each topic I have felt that our similarities have far outweighed any differences, but I have learned immeasurably from him even when we disagreed. I join those who have expressed profound gratitude for the life of Arthur Peacocke as an inspiring and creative thinker, an exemplary interactive colleague, and a treasured personal friend.

NOTE

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