Reviews

Is God a Virus? Genes, Culture and Religion. By JOHN BOWKER. London: SPCK, 1995. 274 pages. $21.00/£12.99 (paper).

Is God a Virus? is really three books. The first, also entitled "Is God a Virus?" was written with the help of P. Q. Deeley, who has a medical background. Bowker supervised Deely's dissertation on biogenetic structuralism. The second, "Why Are Religions So Dangerous?" resonates with Bowker's 1987 work, *Licensed Insanities* (Darton, Longman and Todd). The third, "The Nature of Women and the Authority of Men," examines the roles of women and men in religious organizations, especially Christian denominations and institutions.

The larger section of this review will concentrate on the "groundwork" of the book found in the first section, "Is God a Virus?" The remaining portions will be considered only briefly.

What's with the virus talk, anyway? What does it mean to even ask the question, "Is God a Virus?" What impelled the Reverend John Bowker, professor at Gresham College, former dean of Trinity College, Cambridge, to deliver such an oddly titled address at the 1992–1993 Gresham Lectures?

The issue goes back to the ethologist Richard Dawkins. In 1976, Dawkins wrote a book entitled *The Selfish Gene*. "Selfish genes" make use of living things to perpetuate the genes themselves. Animals and plants are "vehicles" for the genes that inhabit their billions of cells.

In Dawkins's skewed scheme, a hypothetical gene for good vision would be present not for the benefit of a hawk but for the "good" of the vision gene so that more excellent vision genes could be produced. The hawk is only a means to make more excellent vision genes, as well as all of the other genes on the bird's chromosomes. So genes are envisaged as "riders" on animals, plants, fungi and microorganisms. Segments of DNA are seen as minute manipulators that tilt the pinball machine of life to enhance their own self-interests.

In a like manner, almost as an afterthought, Dawkins came up with the concept of "memes." Memes are to culture what genes are to hawks, royalty, race horses, and rose bushes. While genes are secured on chromosomes, memes float free. A meme can be an idea or a song, a word or a symphony, a simple slogan or a grand concept.

A tomato plant can be infected by a virus. The genetic machinery of the tomato is then infiltrated by virus DNA. The result is that the DNA of the tomato produces viruses to the detriment of the tomato.

Dawkins makes the metaphor that the idea of God is a virus. It invades human thinking and produces more religious ideas. Dawkins sees this as being "good" for

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the God idea meme but harmful to the individual whose brain harbors the God idea virus. Bowker thinks this whole analogy is misguided and devotes the first part of *Is God a Virus?* to explaining sociobiology so he can deflate Dawkins's God-meme metaphor.

The task of this review is to look at Bowker's exposition of sociobiology and then evaluate his attempted disposition of Dawkins's Divine Pathogen. Are vaccines used against cultural viruses more dangerous than the infectious agents themselves? How is one to counter when someone insists that God is a virus?

Bowker begins with the "nature or nurture" debate. Which has the greater effect, genes or culture? "Do the genes construct the cake on which culture simply deposits icing?" E. O. Wilson's sociobiology sought to solve the puzzle of genes and culture. The solutions presented stirred up emotions. Detractors called it "so-so biology," a biological determinism that could be used as a tool for subjugation.

Is God a Virus? nicely lays out the premise that "humans are 'built' by two information systems, the genetic and the cultural. . . . One could then say that the genes build the body, bounded by the skin, as the first defensive boundary for themselves; culture is the second defensive 'skin' in which the genes sit" (pp. 11–12). The gulf that exists between biology and anthropology, between sociobiology and the social sciences, is also portrayed.

After some preliminaries, several types of sociobiological theories are presented. A chapter on "Genes, Genotypes, and Phenotypes" lays down the rudiments of DNA genetics. While no misinformation is presented, this treatment might have been drawn more carefully and developed to a fuller extent. For example, it is stated that "[the DNA] does this by 'unzipping' itself so that the famous 'double helix' of its construction unwinds into two strands" (p. 20). This is the end result of what occurs, but the DNA molecule does not unzip itself like someone sliding a zipper down the back of a dress.

The sequence of chemicals we call DNA is unable to "do" anything on its own. To separate its own strands, the DNA molecule initiates the formation of enzymes that carry out the task. DNA assembles quantities of proteins that enable reactions such as strand separation. Bowker undoubtedly knows this but, for the sake of brevity, downplays the role of enzymes. However, it is the activity of these complex protein molecules, acting in concert with DNA, that permits gene expression and duplication and all the processes that must occur in coordination with DNA if life functions are to continue.

Bowker states, "Genes are a part of the process that produces proteins, which, in turn, form the structures and substances of our bodies, including our muscles" (p. 24). Again, this statement is not incorrect but implies that genes make only structural proteins, such as those in muscle tissue. What is left out is that enzymes—dynamic proteins—are the immediate agents that carry out actions such as muscle formation. The genes are properly identified in this case as "part of a process." This is much more accurate than the image of DNA unzipping itself.

There are strong and weak theories of gene-culture coevolution. Genes and culture are said to keep each other "on a leash." If one tends to take the upper hand, the other reacts, and both are balanced out. There are also different kinds of environments. There is the environment in which an organism lives (Eo—for operational environment) as well as the internal environment that perceives the circumambient world (Ec—for the cognized environment). Bowker does an

exceptional job of working his way though sociobiological jargon and sorting out the different permutations proposed by an assortment of scientists. In this manner, the foundation for the "God is a virus" concept is laid in a measured and organized fashion.

The heart of the matter is the "meme" theory of culture. Bowker rightly points out that memes are very different from genes. "Cultural items are woven from many strands, they are not discrete items, the essence of which can be identified and isolated as memes pass through brains apparently unaffected by the corrections and extensions of them" (p. 71). In order to defeat the "God is a virus" argument, Bowker first chips away at the theory of memes. But genes operate in concert, perhaps not unlike memes, and the genotype is not affected by the phenotype.

Logic is employed. "Dawkins has emphasized . . . that 'survival value' does not mean value for a gene in a gene pool [because the information carried in memes is parallel to the information carried in genes], but value for a meme in a meme pool. So the analogous question has to be, survival value in relation to what? The analogous answer follows, survival in relation to its own survival. What then gives survival value to memes?" (pp. 71–72).

Such tautologies are often used to discredit biological evolution. "Survival of the fittest" can be construed as "what survives, survives." A more carefully drawn system of selection circumvents these problems, for genes and also for memes. Memes have survival value because brains that contain those memes tend to allow their owners to live longer and have more children. The meme-survival argument is not effective.

Bowker shifts his attack. Instead of pulling props out from under the notion of memes, he turns to Dawkins's treatment of God. "[Dawkins] allows that the God-meme may have served some (dubious) purposes in the past, but now it has been demonstrated that God is 'imaginary'" (p. 72). This leads into a discussion of whether God is imaginary or not.

The engagement continues. The God-virus does not produce specific "symptoms" like the flu or malaria. Dawkins has a "passionate hatred of religion" and discounts faith as "blind trust." Bowker objects to this interpretation of faith and argues that faith "like many other words does not 'mean' any one, simple thing" (p. 75).

He applies George Pugh's concept of "the value-driven decision system" based in the human brain that points to cultural evolution through "selection by choice not simply by consequence, as it is for the genes" (p. 78). Yet it seems that choosing would be the selection mechanism that allows the memes in the meme pool to be retained by the brain.

So Bowker marshals a series of arguments against the theory of memes in general and the God-virus construct in particular. He ponders human nature and violence and then concludes that God is not a virus because "the analogy between genes and memes is too imprecise to be of any help in understanding the transmission of cultural items or information" (p. 115). More important, the possibility can't be ruled out that God does not argue within these networks of constraint. We cannot say, like Laplace, "I have no need of that hypothesis." Bowker invokes the Christian doctrine of creation. God continues to work creatively in the world. He points to the Incarnation of Jesus, the doctrine of *kasb/iktisab* in Islam, and

again the Christian criteria for deciding which claims are true: "by their fruits you shall know them" (Matthew 7:20).

The summation made by Bowker is "Dawkins is so unequivocally wrong about memes and 'God as virus' that we may dismiss as equally erroneous the angry passion against religion which leads him into this mockery and malice" (p. 118). He concludes that while Dawkins is mistaken, religions are exceedingly dangerous, leaving that thread to be picked up later in the next section of *Is God a Virus?*

Bowker may have made use of additional ammunition for the antivirus onslaught. First, after all, it is not God who is a virus. It is the *idea* of God that is the virus, the meme in question. There also are memes for fairies and unicorns. While these ideas do not have a basis in reality, there is no guarantee that the God meme does not refer to an actual real world referent. Just because God is called an idea or a meme or a virus does not in itself imply that God does not exist.

Second, the God-is-a-virus theorem is reminiscent of the thought of Ludwig Feuerbach. Feuerbach proposed that "God" is actually a projection that humans throw onto the empty screen of the cosmos. However, while humanity may project, it does not necessarily follow that their "home movies" are shown on a blank surface. They may well be superimposed on the reality of the divine which dwells beyond human projections.

Likewise, the idea of God may be a smoke screen. It may even be an enemy that deludes and causes suffering. Still, God's own self may transcend the delusion of the plague-like idea memes. While the God meme may hurt and wound, the God the meme points to may heal and give new life. When you point at the moon with your finger, the purpose is to look at the moon and not the end of your hand.

Perhaps Bowker could have employed a strategy from the Bible. The Gospels of the New Testament, amazingly enough, depict Jesus dealing with something like the "God is a virus" problem. After a healing, Jesus is accused of being able to cast out demons because Jesus is possessed with a demon himself. Jesus never denies it. Jesus never denies anything. He either keeps silent or responds without a denial. Jesus, in effect, says, "Even if I cast out demons by means of demons, it's still good news." That would mean that there's a civil war among demons. A house divided against itself cannot stand. Either way, "whether I work by the finger of God or through the leader of demons, the time of the demons is at an end. Healing is here, and the Reign of God is at hand" (Luke 11:20).

What if the same approach were taken with the God virus meme? What if God is a virus? First of all, it means that there is a God. God in this context may not be a personal deity or an all-powerful benefactor. Yet, there is a God. This appears to be a powerful beginning.

But if God is a virus, is this any worse than God being a human being or a lamb or a refining fire? Viruses are powerful. Disease viruses decimate entire nations. The AIDS virus strikes terror in our hearts and holds millions in its grip. Biological warfare viruses can wipe out armies. In light of all this, how can God be a virus?

Viruses are responsible for other things besides disease. In nature, viruses move pieces of DNA from one bacterium to another. Viruses are vectors for variety in the microbial world. Moreover, viruses move genes around in plants and animals as well. Viroids also are used in genetic engineering. As it turns out, viruses are agents of creation and creativity in genomes and the organisms they generate.

Viruses are the smallest living things that exist. They are so tiny that they're not even alive. This paradox is resolved when it's spelled out that they're alive only within living cells. Outside of cytoplasm, viruses are crystals, just clumps of chemicals. One characteristic of God is an emptying; in a kenosis, God becomes small. If God is a virus, then God's own self is poured out, emptied to the utmost. If God is a virus, does it mean that the love of God is very large because it is emptied down so very small?

Finally, if God is a virus, then God is everywhere. Viruses are exceedingly tiny, and they permeate the air, the water, the soil, and all living things. If God is a virus, then God is ubiquitous, not far away but with us, inside us, in the deep crevices of our beings.

Is God a virus? Is God an idea that sinks its hooks into the human mind? Why deny it? There is an omnipresent presence that has a relationship with every person on the planet. This presence is intangible and does not have the conventional limits of time and space. God the Virus is a powerful construct. With this spin, the memes fight against themselves. The house of Dawkins divided against itself cannot stand. There just may be room for virology within theology.

In the sections on "Why Religions Are So Dangerous" and "Women, Men and Authority," John Bowker hits his stride. He has a wealth of good material on the perils of religious belief, along the lines of his book *Licensed Insanities*. More attention could have been drawn to the temptations for abuse among clergy and church leaders, but overall, religious hazards are well portrayed. Prejudice against women in religious organizations is decried, and a call for fairness is raised. This meme has been too rare in the history of belief systems, and hopefully it is destined to be selected so that it increases in the meme pool.

Is God a Virus? is an exceptional book. It dares to enter the maze of culture and genes. Bowker takes on a heavy hitter such as Dawkins on his own terms. Organized religion with its weaknesses, such as unfair treatment of women over the centuries, also is targeted.

Not every detail is in place within *Is God a Virus?* This is to be expected given the complex disciplines involved. Some of the science is not exact, and some arguments are forced. However, John Bowker has made a good start in striking the ideas of sociobiology and the new genetics against the flint of faith. Sparks fly and provide light by which, at least for a few precious moments, science and religious beliefs can be seen side by side, no longer in the darkness.

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Religion and Science: Historical and Contemporary Issues. By IAN BARBOUR. San Francisco: HarperSanFrancisco, 1997. 368 pages. $19.00 (paper).

In 1990, Ian Barbour's magisterial *Religion in an Age of Science* appeared in print, providing the most comprehensive survey available of the science-religion field. Encyclopedic in scope, Barbour's work has been used as the backbone of most science-religion courses, furthering the dialogue that Barbour himself helped start. This work has now been revised and expanded as *Religion and Science: Historical and Contemporary Issues*. While essentially the same book, it nevertheless contains much new material that considerably enhances the book as a resource. While many will remain happy with their first edition, the new edition is a must for those engaged in teaching science and religion courses and for those new to the field.

Barbour helpfully outlines the changes to the original text in a preface. The original text was divided into three parts: "Religion and the Methods of Science," "Religion and the Theories of Science," and "Philosophical and Theological Reflections." These headings along with the chapter divisions are retained. They are prefaced, however, by a new section, "Religion and the History of Science." In addition to this, a new section has been added to each of chapters 4, 7, and 12. These, along with a glossary and a subject index, make up the bulk of the changes.

The new section, "Religion and the History of Science," represents the most important and most needed alteration for use as a textbook. History often is invoked in popular science and religion debates, particularly the Galileo case and the Scopes "monkey trial" and, as such, needs to be included in most science and religion courses. Dividing the history into three sections, Barbour covers "Physics and Metaphysics in the Seventeenth Century," "Nature and God in the Eighteenth Century," and "Biology and Theology in the Nineteenth Century." While the first chapter does begin with the medieval period, his treatment is brief, and those looking for a more extensive discussion of medieval and ancient antecedents of science will have to look elsewhere. From Galileo on, however, Barbour gives a brief yet superb account of the major developments in the sciences as well as the religious responses and interactions with these developments. Barbour also takes pains to point out the broad-scale assumptions underlying both the scientific and religious discourse. The consequences of the transition from medieval organicism to Newtonian mechanism are spelled out, as well as the antecedents (from Malthus to Lyell) that made Darwin's theory possible. Barbour is also careful to show the diversity of religious responses as well as putting them in their historical context. This allows Barbour to avoid the simplistic scenarios that envision either a warfare between religion and science or a perfect harmony.

While these chapters are significantly based on the historical chapters in his much earlier *Issues in Religion and Science* (Englewood Cliffs, N.J.: Prentice-Hall, 1966), changes have been made and the material and references brought up to date. For example, Barbour gives an informed and balanced discussion of the Merton thesis regarding the predominance of Puritan scientists in seventeenth-century England. Additionally, Barbour uses broad themes to tie this section into the rest of the work. Each chapter ends with a summary that includes headings under "Methods in Science," "Methods in Nature," "God and Nature," and "Human Nature." All of these subjects reappear prominently in later sections.

The other enlargements are on a much smaller scale. A section on "Nature-Centered Spirituality," highlighting the work of Brian Swimme, Fritjof Capra, and ecofeminists, is added to chapter 4. A section on "Chaos Theory and Complexity" is added to chapter 7, while chapter 12 features two new sections, "God as Determiner of Indeterminacies" and "God as Communicator of Information." While these are important additions in their own right, they are relatively minor given the scope of the text already, providing new options under already existing headings. Beyond these, Barbour has altered several smaller passages throughout the text to include current authors and positions. References are made to the positions of Daniel Dennett and Philip Johnson as well as to superstring theory and the controversial discovery of fossil life in a Martian meteorite.

A frequent criticism of *Religion in an Age of Science* has been the dense style of its writing. Since this work is now widely considered to be *the* textbook for science and religion courses, this has become something of a problem since undergraduates in particular struggle with the text. Given the sheer comprehensiveness of the subject, there is probably little that can be done for this in a single volume. Two features that may help, however, are an added glossary and subject index. Unfortunately, both of these are very brief and will be more useful for the beginning than for the advanced student.

The extent to which this revised edition is seen as a significant improvement over the older edition will depend on the needs of the reader. For first-time readers, people new to the science and religion dialogue, and instructors of science and religion courses, there is no question. Barbour's work remains the primary resource for the science-religion field today, and the revisions only enhance this book's value. Those who own and have read the older *Religion in an Age of Science* will have to make up their own mind. There is certainly nothing surprising in the new text, yet I found it valuable to read the whole again. For most *Zygon* readers, this work is already a classic. And a classic, by definition, should be read more than once.

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The Origins of Virtue. By Matt Ridley. New York: Penguin, 1996. 295 pages. $24.95 (paper).

Matt Ridley, D.Ph. in zoology from Oxford and journalist, provides a popular treatment of the relevance of evolutionary theories of human behavior to morality. He begins by describing the genetic underpinnings of human nature. Though his vision is deeply influenced by "selfish gene" theory, his attention to competition in nature is complemented with an extended treatment of cooperation via the "prisoner's dilemma" and Robert Frank's work on the social emotions. Extending his focus to human beings, Ridley exemplifies what he sees as the constant strife between individual selfishness and the demands of the common good. As such, this book often reads as a synthesis of Freud's *Civilization and Its Discontents* with

Huxley's *Ethics and Evolution* and Dawkins's *The Selfish Gene*, all coordinated and interpreted in terms of Hamilton's famous thesis on the evolution of cooperation and Trivers's theory of "reciprocal altruism."

From this vantage point Ridley's book considers a vast range of human behavior, running from sex, friendship, and revenge to economic exchange and war. His survey embraces a variety of topics familiar to behavioral biologists, including the sharing of food, pair bonds and the sexual division of labor, and the giving of gifts. There is nothing new here for the specialist, nor is there intended to be. Instead, Ridley attempts to provide a readable, provocative, and fast-paced account of the explanatory relevance of evolutionary theory for people interested in understanding where morality comes from.

For Ridley, following his British forebears, morality is essentially rooted in the emotions, which emerge from within a biological constitution that has been shaped by millions of years of evolution. We have evolved to be self-interested but also to recognize that often the optimal way to pursue self-interest is to be cooperative, friendly, and even compassionate toward others: "in a world where you only ever meet your immediate neighbor, it pays to be nice to him" (p. 80). We care about fairness and loyalty and not just brute self-interest, but most of our altruism is posturing to elicit trust and cooperation. We desire to live rationally (to seek what is in our best interests), but at times we are motivated by emotions like revenge that may be counterproductive in the short run but that play an important role in maintaining systems of what Alexander calls "indirect reciprocity." Morality is essentially a system of careful and discriminating altruism that generally rewards cooperators and punishes defectors. The human brain is equipped to enable us to develop, conform to, and often exploit moral systems.

Ridley is ambitious, but his knowledge of popular sociobiology and knack for the provocative phrase is not matched by philosophical sophistication or ethical analysis. He disappointingly repeats many of the mistakes already made, and strongly criticized, by the pop sociobiologists of the late 1970s and 1980s. His greatest flaw, perhaps a professional liability in the case of journalists, is his tendency to offer gross and unjustified overgeneralizations regarding areas of human conduct that are vastly more complex than he recognizes. He claims, for example, that "religion teaches its adherents that they are a chosen race and their nearest rivals are benighted fools or even subhumans" (p. 190). "Religion" or a sect of ultra-orthodox Israeli militants? Ridley's grasp of theological ethics also leaves a lot to be desired. Some of his claims display a degree of insouciance that ignores the real complexity of these issues on which he opines, for example, that Christians teach virtue in order to "get to heaven—a pretty big bribe to appeal to their selfishness" (p. 132). Ridley would have been well served by studying serious theories of Christian virtue developed by thinkers such as Thomas Aquinas or John Calvin rather than by consulting the quite minor (or even unnamed) sources upon whom he relied.

This is not to deny that there is some grain of truth in Ridley's book. Everyone knows that Christians have exemplified in-group loyalty and out-group prejudice. Of course morality can function as a form of social control, people who appear to be altruistic might be motivated by self-serving goals, and sex is too often a form of asserting or deflecting power. Unfortunately, whatever insight that can be attained from behavioral biology to the "origins of virtue" is obscured by this book's

methodology, the most fundamental flaw of which is the author's failure to recognize properly philosophical problems as such. Philosophy, ethics, and theology are not reducible to social science or biology or a hybrid of the two.

This book is more remarkable, then, in what its author does not say than in what he actually claims. Contrast it with Aristotle's *Nicomachean Ethics*, for instance. What, after all, is the meaning of "virtue"? How is our understanding of the "origin of virtue" to encompass habituation, the passions, and human choice and deliberation? What is the difference between "true virtue" and the mere "semblance of virtue," or "moral weakness" or "vice"? How is "virtue" related to friendship, self-denial, and the "common good"? These and other quite fundamental topics have been at the center of serious ethical reflection in the West since the time of Plato, yet Ridley does not provide a single page of careful and nuanced attention to even one of these issues in his book. Thus, though it treats a vast array of human behavior and cites numerous social scientific studies, this book comes up short. In the end, it will disappoint all who neither grant its premises nor share its prejudices.

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Nature's Grace: Essays on H. N. Wieman's Finite Theism. By Marvin C. Shaw. New York: Peter Lang, 1995. 160 pages. $29.95 (paper).

When most scholars discuss theology in relation to the contemporary sciences, they think about God in terms of either classical theism or panentheism. Usually overlooked is a development in twentieth-century American theology that is naturalistic—religious naturalism or naturalistic theism. Correcting this theological oversight is Marvin Shaw's helpful volume *Nature's Grace: Essays on H. N. Wieman's Finite Theism.*

This volume is important for readers of *Zygon* because Wieman's theology is based on the same naturalism and rational-empirical methodology that undergirds contemporary science. This is one reason why, in the first volume of *Zygon*, Wieman was its most published author, with four essays appearing in the journal's first year.

While some, including myself, see Wieman more as a philosopher of religion, Shaw sees him as a theologian who occasionally thinks within the Christian (even within the Calvinist) framework. Yet Wieman does not advocate a personal, transcendent deity. Instead, he sees God as the creativity within the world that transforms human beings as we cannot transform ourselves, thereby saving us from evil to ever greater good, provided we commit ourselves to it. Thus, Wieman's theology is salvational, even while his thinking about God is nonpersonal, naturalistic, and empirical.

Throughout *Nature's Grace* (and especially in chapter 6) Shaw shows how this theological understanding is grounded in experience, particularly in a kind of mystical experience that does not reveal an otherworldly dimension to things but opens up ever greater vistas of the natural world and our life in it. This is an

everyday, "problem solving" mysticism of which the creative scientist and artist as well as the ordinary person can speak. It is an experience in which categories of perception and thought are broken up when, for example, we experience an undifferentiated wholeness to things, leading to a reorganization of our thinking and acting that is richer and deeper than it had been. In his Introduction Shaw illustrates such an experience had by Wieman when in graduate school at Harvard (pp. 7–8).

According to Wieman, such experiences are seen as ways in which a reality more than human, yet within the world, brings about an incremental, this-worldly kind of salvation. Shaw argues that Wieman develops this view of God in three main phases of thinking. In the first phase during the 1920s (discussed in chapter 1 in relation to the naturalistic theologies of Edward Scribner Ames and Shailer Matthews), Wieman used Alfred North Whitehead's "principle of concretion" to identify God. As Wieman became more empirical in the 1930s, he became critical of metaphysics and developed an understanding of God as the process of creativity or progressive integration throughout the natural world. Shaw examines this development in chapter 2. In chapter 3 he discusses how, in the 1940s and 1950s, Wieman attempted to construct a more precise concept of God and the conditions under which God is effective. He did this by arguing that God is a social process, namely, the process of creative communication among humans, continually creating the human mind and the only world we know, that is, the world as it is related to the human mind.

In chapters 1 through 3, Shaw argues for a continuity of religious or mystical experience underlying Wieman's empirical theology, even as his naturalistic concept of God undergoes the three-stage development. Shaw's own distinctive contribution is that he focuses on the usually overlooked middle phase of Wieman's thinking. Here God is an experienced reality present throughout the world and in human life. For Wieman, God is, in Shaw's own terms, "Nature's Grace." He argues that this is a more helpful concept of God than either Wieman's earlier use of Whitehead's metaphysical "principle of concretion" or his later settling on God as a social process of creative communication. "Nature's Grace," a creativity within the natural world, may also resonate more with the thinking of those who attempt to relate scientific, evolutionary theory to religious or theological naturalism.

One of the most helpful features of Shaw's book is that he discusses Wieman's thought in the context of the wider movement of naturalistic thinking in religion in America. Shaw begins by outlining six ways of thinking about the divine in relation to nature: (1) monism, in which only the divine is real; (2) theistic dualism, often called "classical theism," in which the divine is wholly other than and transcendent of nature; (3) panentheism, in which the divine is more than but includes nature; (4) pantheism, in which the divine and nature are in some sense identical; (5) immanent theism, in which the divine is within nature; and (6) atheism, in which nature alone is real (pp. 14–15). The last three of these options Shaw calls the naturalist options. They are represented in this volume by the pantheism of William H. Bernhardt, the immanent and naturalistic theism of Wieman, and the religious humanism of John Dewey. Two of the most interesting chapters of the book, 4 and 5, compare and contrast the thought of Wieman with that of Dewey and Bernhardt.

In chapter 4 Shaw traces how Dewey's formulation of the divine in *A Common Faith* (1934) gave rise to a misunderstanding on the part of Wieman that resulted in a further clarification of the latter's naturalistic theism. Dewey had said that "God" is a symbol of the "unity of all ideal ends arousing us to desire and action" (p. 77) as well as "all the natural forces and conditions—including . . . human association—that promote the growth of the ideal and that further its realization" (p. 78). In reviewing Dewey's thinking, Wieman placed the emphasis on the total interrelationship between the natural and human; he argued that this totality is a process that is more than human and that it shapes new visions of the ideal and its consequent actions. In other words, it is the process of creativity or progressive integration. Dewey did not accept this as a valid interpretation of his thinking. For him, the emphasis should be on the role of human imagination in drawing out the ideal possibilities for human thought and action latent in the natural world. Nature supports these ideals, but humans determine what they are. In contrast to Wieman's naturalistic theism, Dewey advocated a religious humanism. The key issue is whether one sees the creation of ideal ends for humans as an act of human creativity or as an act of a creative process that includes humans but is more than human and not subject to human control. In choosing the latter, Wieman in his own way continued the Calvinistic notion of the sovereignty of God.

Equally interesting and important is Shaw's analysis of the disagreement between Wieman and his student William Bernhardt, because their differences hinge in part on how each regards the central task of religion. For Wieman, God is the process that creates human good. For Bernhardt, God is the process that creates existence. The issue is whether God is primarily conceived in terms of value or power. Bernhardt chose the latter: God is the "dynamic determinant" of all existence, whether existence is good or evil in human terms. The task of religion is then to help human beings come to terms with existence as it is, in such a way as to find serenity and peace. Bernhardt argued that this was a more scientific approach to religion and challenged Wieman to justify methodologically his focus on God as source of human good. Even though many have thought Wieman was disinterested in traditional religion, a view supported by the lack of explicit discussions of specific religious traditions in much of his writing, in the debate with Bernhardt Wieman grounded his view of religion and God on the "most magnificent lives in our Christian tradition" (p. 93). He chose Paul as his primary example and argued that Paul's beliefs (even if they were supernaturalistic) still functioned to put him under the control of a creativity that was life-transforming in the direction of greater good (pp. 93–94). Wieman then went on to affirm the classical Christian distinction between God as creator and the values of human life as created, between the process of creativity ("creative good") and its products ("created goods"). The issue between Wieman and Bernhardt remains important today: to what extent is the divine associated with the power of being, of all being regardless of whether it contributes to human well-being, and to what extent should God be associated with that which brings humans toward greater fulfillment?

Most of those who have studied Wieman's thought, including myself, see him thinking beyond the bounds of any particular religion. But Shaw points out how, in the interchange with Bernhardt, Wieman used Paul's writings as normative. In another instance (chapter 7), Shaw argues that Wieman used the Christian tradition as illustrative. Wieman illustrates his view of God as the creative event or

creative communication with a process, relational Christology. In this Christology, Jesus himself remains fully human; the divine becomes manifest in his relationship with others. The human Jesus, according to Wieman, facilitated a kind of interaction that became the creative center of the Christian community after his death. The Resurrection, for Wieman, is the experience of the creative interchange among his followers that Jesus had awakened when he was alive. Through the Crucifixion it was released from the human Jesus and his Jewish heritage. It became and continues to be the experience of the transformative Christ-event—what has traditionally been called the "Spirit of Christ" present in the community.

Nature's Grace provides a valuable introduction to Wieman's thought as it evolved in the course of his life in relation to American naturalism and humanism. However, as one involved in science and religion, I would like to have seen a more positive expression of the relation between naturalistic theism and modern science. Shaw limits his discussion to thinkers in the American theological and philosophical community. He does not take us into Wieman's relation to developments in psychology, especially the 1940s transactional psychology of Harry Stack Sullivan, which Wieman uses in his later period. Neither does Shaw draw out the relationship of Wieman's thought to that of psychologist Regina Westcott-Wieman in their joint book *Normative Psychology of Religion*. Nor does he consider the impact of the thought of Ralph Wendell Burhoe and others on Wieman, even though he mentions that Wieman participated in conferences of the Institute on Religion in an Age of Science and in the founding of *Zygon* (p. 6).

More seriously, Shaw does not adequately represent science when he criticizes Bernhardt for supporting a method of inquiry that "embodies a faith in the possibility and value of 'scientific objectivity.'" Shaw says this is "a faith which may strike the reader as naive, but that was common enough half a century ago" (p. 98). To imply that scientists today have given up on "objectivity" is to overlook its continued affirmation as an assumption—as part of what Lindon Eaves calls the "spirit of science." In his June 1989 *Zygon* essay ("Spirit, Method, and Content in Science and Religion," pp. 197, 199) Eaves indicates how the "spirit of science" involves a "sacrifice of subjectivity" and a "reverse asceticism" that insists on data, experimentation, and implied determinism—all features of objectivity. Further, Shaw's remarks do not consider how sophisticated the notion of objectivity is, for example, when it is reformulated as "intersubjective testability."

I have been critical of Shaw's way of presenting scientific objectivity in the debate between Bernhardt and Wieman. However, in analyzing this debate Shaw makes the significant suggestion that Wieman seems like a postmodernist or antifoundationalist (p. 99; cf. pp. 43, 67–69). At the same time, Shaw is critical of Wieman for moving away from a concept of God as the creative process in the natural world to a concept of God as the process of creative communication among humans. Shaw adequately shows that Wieman does this in order to construct a more specific or precise concept of God. This, in turn, allows for the possibility of Wieman's theology becoming more scientific (a point I argued in my own Ph.D. dissertation on "The Concept of God and the Method of Science"). However, what Shaw overlooks is that Wieman's argument for making this move is a postmodernist argument, based on what Wieman calls the "egocentric predicament." Wieman argues that the only world we can know is the world relative to human minds as knowers. Anytime we assert, scientifically or otherwise, something about

the world, we do so within a particular framework conditioned by our biology and our culture. This is so even when we talk about God. Only by studying creative communication or creative interchange, that is, only by rationally-empirically investigating the interactions among humans and between humans and the rest of the world that give rise to all our ideas and hence our world, can we gain greater knowledge about the divine creativity that is the source of human good. So, Wieman's narrowing the domain of inquiry from the more general creativity in the world to that among humans allows him to be more specific in rationally-empirically investigating God as the creative event. It allows him, in other words, to become more scientific. At the same time, his argument for doing this makes the postmodernist point that everything we think about is from within our own particular frameworks. Is it possible that Wieman (well ahead of his time) thus suggests a way to resolve (or at least lessen) the modern/postmodern tension that has surfaced in the last decade? To reflect with Shaw on Wieman's naturalistic theism with the modernist/postmodernist question in mind would be a worthwhile way to read or reread *Nature's Grace*.

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The Divine Constitution. By Jeh-Tween Gong. Chicago: Adams Press, 1992. 214 pages. $35.00.

In *The Divine Constitution* Jeh-Tween Gong develops a personal synthesis of God's nature and God's fit into the modern concept of the cosmos. The author relates that, since youth, he has yearned to go beyond simply sensing and feeling God's existence to know how God came to be and what God's essence might be like. To try to pinpoint the essence of God is an extremely daunting if not audacious task, and throughout the book one gets the impression that Jeh-Tween Gong is trying to pack more into his system than can possibly fit, sometimes not without bias as to how the parts should be orchestrated. But the reader never gets the feeling that the author is at a loss for ideas. The book brims with profound views on the deeper nature of God and the God-enshrouded universe.

Dr. Gong approaches his task using "the Bible as the root, Christianity as the trunk, and the sciences as the branches" (p. 184). In the chapter entitled "The Grand Detour," he takes a brief historical look at the evolution of the Judeo-Christian concept of God. The author holds that what started as Jesus' teaching of the coming of God's kingdom became supplanted after Jesus' passage by messianic hopes. The long delayed *parousia* created a sense of "doubt" among believers in Jesus' fulfillment of prophecy, which created a counterbalancing need for "faith," further flamed by the concretizing of stories of miracles between the writing of Paul's epistles and the synoptic Gospels. The inexplicabilities, the existence of miracles and the Pauline Trilogy, then led to a pendulum swing that gave birth to the critical tenor of modern science in the Renaissance. Dr. Gong contends that the search for God's nature should be neither too rigidly scientific nor too religiously

unquestioning. Gong seeks to go beyond the traditional principle of induction dealing with particulars of the same kind. He argues for a type of "transcendental faith," which attains "utmost truth" by sewing together elements of different "kinds" from science, philosophy, and religion. Gong's notion of "transcendental faith" parallels Kant's "transcendental synthesis," but the former knits together conceptual blocks from differing fields, not just representations within the sphere of personal consciousness.

Transcendental faith becomes the vehicle for uniting antinomies ingrained in the universe that relate to the nature of self, totality, and God, covered in chapter 3. Cantor's paradox points out the contradiction inherent in the notion of "self," that the "power set," that is, the set of all subsets of its elements, is always greater than the "set of all sets" (the "Self") which contains the elements. Russell's paradox suggests a similar contradiction in the notion of "totality." The paradox of Jesus is that his mortal self is seemingly subsumed by his immortal self. The author claims that what is needed to resolve these metaphysical paradoxes is the recognition of a higher symmetry structure binding the contradictory halves of each. In the case of set theory, the notion of transfinite numbers must be introduced to make equivalent the power set and the original set of elements. In the case of metaphysical categories such as elements of totality and aspects of the self, he claims they emerge from a perfect symmetry which makes them equivalent to the Totality and the whole "Self." This perfect symmetry also makes it possible for the same being to have both a mortal and an immortal nature.

In chapter 4, Dr. Gong describes the breaking of the universe's perfect symmetry into two complements, the mortal universe and a "ghost partner." This dyad contrasts with the "immortal sphere" at the apex of the triangle. A weakness of the book is that it does not clearly define or describe the "ghost partner." In section 6 of the chapter he suggests that God's essence is the union of an "utmost chaos" with two opposites, infinity and nothingness, which infuse the immortal sphere. The infinity of which he speaks is the condition of unboundedness, and the nothingness is the universe infinitely curved in upon itself as a totipotent singularity. The reader should not be fooled into believing that these polarities of God's essence represent only the initial and final states of the universe—they are the matrix for creation at every point of the universe's existence. As for the immortal sphere, Gong describes it as a "timeless" realm, the storehouse of concepts, moral principles, and "fictitious objects" represented by myths (pp. 65, 69). The contents of the "immortal sphere" could stand some unpacking, which is to some extent performed in later chapters, but the main contribution of this chapter is to describe a cosmology. God's triune nature, the union of the utmost chaos with infinity and nothingness, gives rise to a triune universe, containing an "immortal" and a "mortal sphere" plus its complement.

Gong also tackles the perennial question, Why should there be a universe at all? For us mortals this question seems unanswerable, but the author mounts a reasoned scientific response. Like the scientist-philosopher Emanuel Swedenborg three centuries before, who also believed in a multitiered triune universe and was concerned with different levels of truth and faith, Jeh-Tween Gong considers the universe to be made of "degrees." In the cosmic sense, the degrees are dimensions in which the universe is free to develop. The maximal number of degrees of freedom represents the highest symmetry and the utmost chaos. Dr. Gong uses a

mathematical theorem and the second law of thermodynamics to show that it is the inherent nature of this totally homogeneous chaos to degenerate into pockets of orderliness containing beings and entities in time. The immortal sphere and the mortal sphere are intertwined—if one exists, so must the other.

A consistent feature of Gong's book is that it takes a piece of knowledge from science or mathematics and shows the religious or spiritual significance behind it. In the general theory of relativity, the universe is laid out like an expanding beach ball, with each point seemingly expanding outward from any given observer. Gong equates objects on the ball's surface with persons and galaxies inhabiting the relative, mortal sphere. Each observer has an equivalent perspective because each has the same relationship to the center of the ball, which Gong posits as absolute and eternal. Gong asserts that the absolute and relative aspects of the universe are the outward manifestations of the transcendent and immanent aspects of God. He conceives the Einsteinian universe as a divine one. In chapter 5, Gong equates the center of the ball with a region of infinite possibility. "Possibility" here goes beyond the physical notion of "quantum possibility." It is "ontological possibility," giving rise to categories like thought, feeling, and love, binding self to God. Thus, the quantum realm is spiritualized. Gong also introduces a "ball-donut transformation" into his model to make it dynamic and open-ended. The chapter "Sutra of All Sutras" highlights several differences with Buddhism, which labels the temporal as false and ultimately illusory and in the end claims that God is totally transcendent and indefinable (The Diamond Sutra). Gong's model is a bit more warm-blooded, leading to a final concept of God's essence, an infinite recursion from absoluteness to relativity, then back to absoluteness (p. 86).

The separation of the immortal and mortal spheres in Gong's system, which leads to the first appearance of gravity, time, and space, is the start in a series of symmetry-breaking steps. The skewing proceeds from the ungluing of the quark colors to the separation of the weak and electromagnetic forces, leading to galaxies, creatures, and consciousness. In chapters 7 through 10, Gong uses the principle of "example-in-kinds," or what both Russell and Swedenborg referred to as "correspondences," to describe this Whiteheadian succession. Taoism comes very close to the author's ideal for an explanatory system that meets the physicist's needs. Dancing between the Chinese sage Fuhsi's "trigrams" and physicists' quark colors, he shows how both the ancient and the contemporary can be used to construct the fundamental particles of the universe, quarks and leptons, from a "pre-quark" structure. One conclusion the author reaches in chapter 10, that the universe has sixty-four dimensions, which reduce down to the more limited number of quark colors, seems almost like an attempt to make physical theory comport with the Taoist concept of "Kwa forms" and its sixty-four hexagrams. Though the author claims he developed his ideas prior to looking back and rediscovering the religion of his paternal ancestors, there can be no doubt that the essentials of that religion influenced the threads of his thought.

The book also has sections that will appeal to the life sciences audience. The author refers to DNA replicability, cancer cell mutation, and histocompatibility, giving the deeper meaning of each of these processes. In chapter 7 he uses embryogenesis, from zygote formation to brain organogenesis, to create homologies illustrating the development of consciousness. The embryo example also demonstrates how the divine process of transformation recapitulates the ternary pattern at

numerous levels. The book fails to mention that it is the very nature of chaotic systems to replicate the same basic pattern in novel arrangements at different levels of structure, a property called "self-similarity."

The Divine Constitution contains chapters dealing with philosophical implications. Like Whitehead, the author holds that Platonic ideals, including moral truths, have both an eternal reality and relationship with the temporal world. Gong writes that moral truths are not divinely given but, in the more modern sense, bring the moral agent into proximity with God. Gong treats the human soul like he does moral principles. The soul in his metaphysics is the aggregate of Platonic forms of truth and love, thus partakes in their inheritance of immortality. In part, this view of personhood is a derivative of Gong's model of the universe—that two spheres exist, and humans, being a reflection of the divine, stretch between them. Human beings share in Jesus' immortality. The author's belief in immortality also exhibits a strong Taoist influence. Being and nonbeing are as natural together as yin and yang. The human being is like Chuang Tzu's butterfly, not knowing whether it is a person dreaming it is a butterfly or a butterfly dreaming it is a person. One side is birth and life, the other death and immortality.

Dr. Gong's system is sure to unsettle materialistic readers as well as religious conservatives. Process philosopher Charles Hartshorne once wrote, "In the era of relativity physics the concept of inextended mental events is peculiarly inappropriate" ("Panpsychism: Mind as Sole Reality," *Ultimate Reality and Meaning* 1 [1978], 115). Hartshorne would also be reluctant to claim that humans leave more than a physical trace in God after their death. On the other hand, many theologians would no doubt feel disoriented in basing their faith and experience of God's personal presence on cosmic concepts. Nevertheless, Jeh-Tween Gong has proposed a model of the divine universe that reaches farther than many other modern cosmologies in linking philosophy and religion with physicists' and biologists' current view of the universe. Some of the technical examples he uses are a bit challenging but do not involve equations and are within bounds for the lay reader. The book's greatest weakness is also its most commendable strength—that it covers too many areas to specialize in any, yet it fashions them into a progressively coherent whole. Gong makes considerable strides in formulating a modern concept of God's makeup and explaining how a transcendent God could create a material universe. After reading *The Divine Constitution*, readers will want to take stock of what the book has done to expand their worldview and ponder what facets of the divine universe still crave explanation.

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