

the authors' model and the standard one is the inability to account for the amazing fine-tuning required for life to be possible in a cosmic environment. It could well be that, a few centuries down the line, our current understanding of the cosmos will look downright Ptolemaic.

To sum up, this is an excellent and clear account, delivered in lively style, of modern cosmology as seen through the eyes of three protagonists in the great debate. The equations and occasional technical patches will, unfortunately, act as a barrier to many readers even although the essence of the story can be read between them. A charming feature of the book is that the authors, having been involved in the early debates, provide a unique "insiders" perspective on the rough-and-tumble of the period, bruised egos, dirty tricks and all. The villains are clearly identified!

Finally, what of the authors' claim that modern cosmology is conformist and dominated by a few "leading geese"? Certain facts are hard to refute. No doctoral student would dare to question the canonical picture, nor would a supervisor lead him into such a minefield. There is almost no chance that a proposal for telescope time to examine any aspect of (say) the discordant redshift claims would get through an allocation panel. No researcher on the make would risk her reputation by getting involved, and any paper giving support to (say) redshift periodicity would have to surmount a wall of hostility. For such reasons, at least in the short term, this book will have no significant influence on the community of cosmologists. I can thoroughly recommend it.

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Religion and Scientific Naturalism: Overcoming the Conflicts by David Ray Griffin. Albany: State University of New York, 2000. xvii +345 pp. paperback, ISBN 0-7914-4564-X, hardcover ISBN 0-7914-4563-1.

With this book, David Ray Griffin, general editor of the SUNY *Series in Constructive Postmodern Thought* (now nearly two dozen volumes) and himself author, co-author, or editor of half of the volumes in the series (as well as many other books and papers), has contributed a volume that should be required reading for all scientists, theologians, and philosophers—not only those who feel some unease with the current picture of the world as painted by either religion or modern science, but more importantly for those who do *not*. Readers—scientists and theologians alike—should come away from this book with the conviction that some radically new approach to or perspective on the problems of consciousness, free will, life, and their place in the material universe is badly needed. Even if all readers are not entirely convinced by the particular theoretical perspective that Griffin offers, most should come away also with

the conviction that his general argument is correct: that the continued polarization of scientific and religious views about controversial issues is not only unproductive but unnecessary, that both religion and science have discovered fundamental truths about the world but have reached erroneous conclusions by excluding those truths recognized by the other side, and that a more complete and accurate world view will emerge only when the facts and truths from both sides can be fit into some larger framework.

This “*tertium quid*” approach to controversial issues (as Edmund Gurney [1887] termed it) was the guiding principle behind the founding and development of psychical research (or parapsychology) in the late 19th century (Kelly, 2001), but it, like psychical research, seems to have been largely ignored in wider intellectual circles. It is heartening, therefore, to see that Griffin introduces the general SUNY series on postmodern thought with a statement defining his version of postmodernism as an approach that attempts to go beyond *both* the premodern (religious) world view and the modern (scientific) world view by taking the strengths from both and forging a third, postmodern world view. The central question for this book, therefore, as described in the Preface and in Chapter 1, is whether such a merging of the two views is even possible—that is, whether there is anything *essential* to science that absolutely conflicts with anything *essential* to religion. Griffin concludes that there is not, that the dualistic supernaturalism that has been assumed to be essential to the religious world can and must be replaced by naturalism, which acknowledges the lawful regularity of basic causal processes in the universe’s operation, but, conversely, that the mechanistic, physicalistic, reductionistic, nihilistic, and atheistic “maximal” version of naturalism, currently assumed to be essential in the modern scientific world view, can and must be replaced by a “minimal” version of naturalism that is nondualistic (in the traditional sense of Cartesian dualism) but that nonetheless also acknowledges will and purpose (whether divine, human, or both) as basic, ongoing natural influences in the world’s operation.

In Chapters 2 and 5, Griffin argues that “the rise of modern science itself was heavily conditioned by theological ideas and motives” (p. 110) and that, ironically, the materialistic, atheistic world view is deeply rooted in the supernaturalistic dualism of founders such as Galileo, Descartes, and Newton. This original theism is depicted in the familiar picture of inert, mechanical, purposeless matter; a free, active, and immortal soul; and an omnipotent God who made the interaction of the two possible. The glaring problem in this picture, however, of accommodating the evil and suffering in the world with an omnipotent God began a long process in which the concepts of God, purpose, free will, and meaning were gradually pushed off the stage, in a retreat from theism to the deism of scientists like Darwin, who believed in God as the first cause but as having no subsequent role in the operation of the world, to the ultimate nihilism of the modern scientific world view.

This world view, however, is inadequate to account for the rise of conscious

experience out of inert matter and for human freedom in a deterministic world, a freedom that all of us, scientists included, assume in action. In failing to account for such fundamental phenomena—"the reality, the efficacy, and the freedom of consciousness" (p. 167)—modern "maximal" naturalism shows itself inadequate not only for religion and ethics, but also for science. As a result, religious thinkers are increasingly challenging the adequacy of the modern scientific world view, and in Chapter 3 Griffin describes three recent attempts to accommodate both the religious and the scientific perspectives. In Griffin's estimation, however, all such attempts fail because they fail to recognize that *both* the supernaturalism assumed to be essential to religion and the materialism assumed to be essential to science are false.

In Chapter 6 Griffin argues that the core of the problem with all modern world views, dualistic as well as materialistic, is that they are rooted in the early modern scientific view of matter as inert. Griffin argues that what is needed now is a more serious consideration of pantheism, and in Chapters 4 and 6, he describes the version of pantheism that he finds most persuasive, the "pantheism" or "panexperientialism" of Alfred North Whitehead, so-called because in it all matter has some degree, not of mind or consciousness, but more fundamentally of experience and spontaneity.

In Whitehead's system, as described here by Griffin, observations and experiences that led to religious views can be accommodated with those that led to modern scientific views. First of all, Whitehead's system includes a naturalistic theism, in which natural laws are not part of an externally imposed and fixed or unyielding mechanism but are simply longstanding "habits" of the universe that are shaped and directed to varying degrees by many causal factors, the most basic and universal of which is divine influence. Divine influence, therefore, should be understood as "persuasive" and not "coercive," involving no "miracles" or "*interruption of the normal cause-and-effect pattern*" but being instead "an essential *factor* in that pattern" (p. 94). Second, Whitehead's system involves a more open, comprehensive scientific naturalism in which complex levels of perception, freedom, mind, and consciousness can be seen as having arisen, not *ex nihilo*, but out of the elementary experience and spontaneity of elementary levels of matter. Even the creation of the universe itself, in Whitehead's naturalism, did not involve an exception to the natural order, because it is seen as a process of bringing order out of chaos, not creation out of nothing (pp. 97, 312). Whitehead's God is not the "God of the gaps," as depicted by supernaturalism, but more fundamentally the universal force permeating every pore of the universe.

In two final and lengthy chapters, Griffin discusses in some detail two specific areas of scientific research that expose the modern scientific world view as having many "gaps" of its own. In Chapter 7 he discusses the controversy about parapsychology, which he considers "religion's basic science" (p. 20), even though most orthodox religious thinkers and liberal theologians, like most scientists, have ignored or rejected it. He concludes that parapsychology does in-

deed conflict with the modern scientific world view, and most especially with its assumption that there can be no causal influence at a distance, an assumption that he describes as growing historically out of modern science's foundation on classical dualism's mechanism and supernaturalism. On the other hand, he believes that parapsychological data directly support the more open naturalism advocated by Whitehead and thus provide a strong empirical basis for the development of a postmodern reconciliation of science and religion. Moreover, because the present scientific world view fails so completely to account for other important aspects of human experience, such as consciousness, free will, and aesthetic and ethical norms, "the fact that psi is not consistent with it provides no reason whatever for being suspicious of psi" (p. 219).

Finally, in Chapter 8, Griffin discusses the problem of evolutionary theory, not only because it has been so central in the conflict between science and religion, but also because in its modern, neo-Darwinist form, it illustrates many of the failings as well as strengths of modern scientific thought. Griffin first describes fourteen features of current Darwinian evolutionism, in an effort to identify which aspects are valid and essential for a naturalistic theory of life and its many forms and, conversely, which may be inadequate or invalid. He then summarizes some of the more important shortcomings of modern Darwinism. Some of the difficulties are philosophical, such as its materialism and positivism; but perhaps its more glaring weaknesses are its empirical shortcomings, two of which Griffin discusses in some detail. First, there is evidence, contrary to Darwinian theory, that some kind of Lamarckian, or need-induced, inheritance occurs, and new findings in genetics suggest that this is no longer an implausible hypothesis. As Griffin points out, the importance of such an hypothesis is three-fold in that it suggests "that there *are* factors involved other than natural selection of random variations... [that] purposes can directly bring about structural changes... [and] that all living things, rather than being passive results of forces acting on them, are self-determining organisms" (p. 276). Second, there is the problem of major gaps—the absence of transitional forms of life—in the fossil record, gaps that have become more, not less, pronounced during the 150 years of paleontological research since Darwin's day. Moreover, the issue involves not only this evidential problem, but several related conceptual problems, including how new and complex species could have developed through random variations, when the viability of a species would often have required the simultaneous and instant appearance of several interacting organs, skeletal structures, or other features; and also how life itself arose, especially how the myriad forms of complex life arose so suddenly and rapidly, at the time of "Biology's Big Bang" during the Cambrian period. In the remainder of the chapter, Griffin outlines "how the wider naturalism articulated in this book provides a more helpful framework" (p. 290) for addressing these and other problems and, more broadly, how it takes into account the strengths of the hitherto polarized views of religious creationists and neo-Darwinian scientists.

This is a complex, challenging book, so full of ideas that it is not easy to read, and even less easy to summarize; I have only scratched the surface in my summary here. Griffin examines closely a variety of controversial issues and provides extensive references for readers who want to look more deeply into them. More importantly, he has also presented in detail his—and Whitehead’s—proposal for a scientific naturalism that goes beyond the polarization of thought in which all of these issues remain mired. I share completely Griffin’s belief that a reconciliation of religious and scientific perspectives in the context of a wider naturalism is essential for any significant advancement in either religion or science. I am less convinced—or perhaps just puzzled—by some of his specific arguments. His explanation (pp. 219–229) of paranormal phenomena in the context of Whitehead’s theories was bewildering to me, perhaps because I have not read enough of Whitehead’s own work to understand fully his ideas. I also found puzzling Griffin’s categorical denial of the possibility of precognition (pp. 228–229). Given his castigation of theologians and scientists who reject phenomena *a priori*, based on their beliefs, world views, or systems of philosophy, one would think that he would be more cautious or restrained in rejecting the idea of precognition as “logically impossible”; and I found completely unconvincing his explanation (p. 229) of why his *a priori* rejection of precognition is different in kind from the similar rejection of psi by other scientists and philosophers. (Another reviewer in this journal of one of Griffin’s books finds his dismissal of precognition equally unconvincing; see Beloff [1998]).

Similarly, like many other people before him, Griffin rejects classical dualism in part because of the interaction problem: “We realize that mind and body do interact. We realize, further, that if they were different in kind, this interaction would be impossible,” apart from the influence of a *deus ex machina*. The conclusion, according to Griffin, must therefore be that mind and body are *not* different in kind and “that the mechanistic view of matter must be untrue” (p. 148). This conclusion may be perfectly valid (I am inclined to think it is), but I am unconvinced by his premise, that two unlike things cannot interact, because I do not think that Griffin (or anyone else) has found a more adequate definition of causation than Hume’s basically neutral description of it as simply our observations of “constant conjunction.” As Griffin himself points out, this understanding of causation provides “no good reason to stipulate *a priori* that only things with a common nature can causally interact” (p. 148), and without a more definitive understanding of the nature of causation, I do not see how we can do otherwise but take an agnostic position on what can and cannot interact.

Perhaps the most important problem, however, that I find with the Griffin/Whitehead position is that, although Griffin says that “panexperientialism... , and apparently it alone, can solve the mind-body problem” (p. 173), it is not so clear to me that it really does. As Griffin explains it, in panexperientialism “a distinction is made between experience as such, which even the low-

est-level individuals (i.e., particles of matter) are said to have, and *conscious* experience, which emerges only in very high-level individuals” (p. 167). Furthermore,

a distinction is made between two ways in which low-level individuals can be organized: into ‘compound individuals,’ in which a higher-level of experience (which might be conscious) emerges, and merely ‘aggregational societies,’ such as rocks and telephones, in which no higher-level experience emerges. (p. 167)

In other words, in some complex aggregates of particles, a higher-level entity—a “mind”—emerges that makes the aggregate a “*self-determining* organism” (p. 155). In other complex aggregates, no such “higher-level experience” emerges from the group of particles. This distinction is not an “ontological dualism” but instead “an *organizational duality*” between compound individuals, which are “*self-determining*,” and aggregational societies, which are not (pp. 176, 155). But what makes a higher level of experience emerge in one group of particles (e.g., a bird, or a human) but not in another (e.g., a rock, or [I would add] a computer)? Perhaps more problematically, what makes a higher level of experience emerge in one set of particles (e.g., a living bird) but not in the (apparently) same set at another time (the corpse of the same bird)? Panexperientialism, or any form of panpsychism in the broad sense, is in my view a theory deserving much more serious consideration, as Griffin urges, than it has so far received, in large part because it answers a problem fundamental in materialistic philosophies, namely, how (and when) life, mind, and consciousness emerge from insentient, inert matter. Unfortunately, in the Griffin/Whitehead system the problem of emergence has simply been placed on another level, that of how consciousness emerges from some sets of particles and not from others.

The problems that I have in fully understanding or accepting all aspects of Griffin’s panexperientialism in no way detracts from what I believe is the importance of this book. One can argue with details or even with Griffin’s whole theoretical system; one cannot, I am convinced, argue with the premise that the reconciliation of religious and scientific perspectives, data, and insights within the framework of a wider theory of naturalism is essential, and long overdue.

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Outposts of the Spirit by William M. Justice. Charlottesville, VA: Hampton Roads Publishing Company, 2000, 213 pp. \$12.95. Softcover, ISBN 1-57174-157-7.

William M. Justice was a Protestant minister for most of his professional life. His interest in understanding the implications of psychical research urged him to consult with many personalities of the day, ranging from scholars such as Albert Einstein, Robert Thouless, and Robert Crookall to celebrated psychics like Edgar Cayce and Arthur Ford. Justice subsequently presented these interactions and the ideas they evoked in a book entitled *Outposts of the Spirit*. That work, published approximately twenty years ago, reflected Justice's striking spiritual interpretation of psychic phenomena, phenomena that he felt were ways to achieve "communion with God." "Outposts of the Spirit are those outposts along the front lines to which the brave pioneers of the human race have reached in their search for the truth" (p. vii).

In the editor's introduction to this reprint, the question is posed, "Why publish a book written almost twenty years ago about a rapidly evolving field that moves forward with new developments almost every month?" (p. v). The Editor's answer is that there still persists the need for a way of looking at the field that accommodates prior beliefs, doubts, and natural skepticism. To assess the veracity of this answer as well as Justice's conclusions would place any reviewer in an uncomfortable position. Given my skeptical attitude toward the purported evidence for spirit communication and the paranormal in general, I am not persuaded by Justice's convictions that parapsychological phenomena provide evidence for God. Yet his convictions are admirably strong and well-articulated.

Therefore, I would like to offer a possibly better reason why it was helpful to reprint *Outposts of the Spirit*. A reader does not have to agree with the contents in order to appreciate this book. At the very least, this book offers a wonderful case study on how an intelligent and spiritual man was confronted by and subsequently integrated the paranormal into his personal and professional life. This is true human drama. To be sure, an increased interest in spiritual matters, a sense of well-being, and optimism frequently attend paranormal or transcendent experiences (Kennedy & Kathamani, 1995a,b). However, facing anomalous phenomena can also pose a serious challenge to a person's world views and psychological stability. Many people to this day struggle to accomplish what Justice did—and the inclusion of the new diagnostic code "Religious or Spiritual Problem" in the *DSM-IV* (American Psychiatric Association, 1994, p. 685; cf. Turner et al., 1995)—demonstrates that such struggles