Naturalism: Scientific and Religious

SCIENTIFIC NATURALISM, THE MIND-BODY RELATION, AND RELIGIOUS EXPERIENCE

by David Ray Griffin

Abstract. Although attempts to explain religious experience in terms of brain processes usually presuppose the identification of scientific naturalism with the *s*ensationist, *a*theistic, *m*aterialist version of naturalism (naturalism$_{sam}$), this version is inadequate for science, and human experience more generally, for numerous reasons. An alternative version, based on *p*anexperientialism, *p*anentheism, and a *p*rehensive doctrine of perception (naturalism$_{ppp}$), not only avoids those problems but also allows for religious experience understood as the soul's direct experience of a Holy Reality.

Keywords: atheism; interactionism; materialism; naturalistic theism; neuroscience; panentheism; panexperientialism; prehension; Hilary Putnam; Willard Quine; religious experience; scientific naturalism; sensationism; Alfred North Whitehead.

Religion, especially religious experience, has always constituted a problem for the version of scientific naturalism that has been dominant since the middle of the nineteenth century. Scientific naturalism in the generic (or minimal) sense is the doctrine that the world's normal causal processes are never interrupted. Naturalism in this sense is simply the rejection of the possibility of supernatural interruption of the world's web of cause-effect relations. Generic naturalism can also be called naturalism$_{ns}$, with *ns* indicating nonsupernaturalist. However, for reasons explained elsewhere (Griffin

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2000a), naturalism in this generic sense comes wrapped in a much more restrictive form of naturalism, which rules out the possibility of genuine religious experience. This more restrictive doctrine can be called naturalism$_{sam}$, with *sam* standing for sensationist-atheist-materialist. Each of the dimensions of this position—sensationism, atheism, and materialism—plays a role in ruling out the possibility of genuine religious experience, especially religious experience of the theistic type.[1]

According to sensationism (which comes to us from the philosophies of John Locke, David Hume, and Immanuel Kant), all of our experience of the world beyond our own minds comes by means of our bodily sensory organs, which are stimulated only by physical objects. According to this doctrine, there can be no nonsensory experience. Besides ruling out the genuineness of the apparent extrasensory perception studied by parapsychologists, this doctrine also rules out any genuine theistic experience, understood in the traditional sense as a perception of a Holy Reality distinct from the perceiver. Although Kant did not affirm naturalism$_{sam}$,[2] he did insist on the sensationist doctrine of perception, which led him to say that to affirm a "feeling of the immediate presence of the Supreme Being" would be a "fanatical religious illusion," because it would be to affirm "a receptivity for an intuition for which there is no sensory provision in man's nature" (Kant 1960, 163).

This insistence that there could be no direct experience of a Holy Reality raised the question of the very existence and persistence of religion. The nineteenth century, accordingly, gave birth to a plethora of psychological and sociological theories of religion, all aimed primarily at explaining why people always and everywhere have evidently been religious, even though genuine religious experience is impossible. As Emile Durkheim put it, the primary problem for the scientific understanding of religion is "explaining the sacred"—that is, explaining why religious people think in terms of the distinction between the sacred and the profane, even though "nothing in sensible experience seems able to suggest the idea of so radical a duality to them" (Durkheim [1912] 1963, 57). Simply presupposing the sensationist theory of perception, Durkheim assumed that any explanation, to be naturalistic and thereby scientific, would have to be expressed in terms of "sensible" (sensory) experience. This assumption is now widespread among intellectuals. For example, J. J. C. Smart said that "if mystical experiences are not mere aberrations of feelings, that are explicable in naturalistic terms, then they must be in some way miraculous" (by which Smart meant "impossible"). Smart's argument was that a naturalistic account of "getting in touch" with things, such as rabbits or even electrons, involves responses to physical stimuli but that no naturalistic account could be given of getting in touch with something nonphysical, which "mystical cognition of the supernatural" is supposed to involve (Smart 1996, 222–23).

The emergence of scientific naturalism, with its rejection of supernaturalism, is an essential part of this problem. Thinkers such as Locke and Kant, who still affirmed traditional theism—albeit in a more or less deistic form—could assume that religion existed because it had been divinely implanted in the human mind. Whereas Kant derived religion from morality, which he explained in terms of a divinely implanted a priori category of the human mind, other thinkers said that religion had its own a priori category. Rudolf Otto, standing in this neo-Kantian tradition, explained the existence of religion in terms of the divinely implanted category of the holy (Otto [1917] 1958, 175). Mircea Eliade, evidently influenced by Otto, famously (or notoriously) said that "the 'sacred' is an element in the structure of consciousness" (Eliade 1978, xiii). However, those who have adopted scientific naturalism cannot accept such an explanation, which is at least implicitly supernaturalistic. For example, J. Samuel Preus, in his book *Explaining Religion*, says, "in an academic setting where other scholars are struggling with the evolutionary emergence of our species, one legitimately wants to know how Eliade's remarkable 'element in the structure of consciousness' might have gotten there" (Preus 1987, xix). Preus's critique will be endorsed by everyone who accepts scientific naturalism in the generic sense.

However, naturalism$_{sam}$, the currently reigning form of scientific naturalism, does not merely reject all explanations that rely on supernaturalist versions of theism. By virtue of its atheism, naturalism$_{sam}$ leads its proponents to reject *any* explanation that involves the idea of a Holy Reality distinct from the totality of finite entities, events, and interactions. Naturalism$_{sam}$ goes beyond naturalism$_{ns}$, which merely rejects the idea of supernatural interruptions of natural processes, to affirm that "nature is all there is" (with nature here understood to mean the totality of finite entities, events, and interactions). Naturalism in this sense can be called naturalism$_{nati}$, with *nati* meaning "nature is all there is." This naturalism denies not only traditional Western theism but also the more general idea, shared by most of the religious traditions of the world, that there is a divine actuality that is distinct from the world (understood as the totality of finite entities, events, and interactions) and exercises agency in the world.[3] Preus, accordingly, says that the naturalistic analyst rejects the account that religious believers give of their religious experiences "because the analyst does not believe their explanation that mysterious transcendent powers beyond the realm of natural [read "finite"] causation . . . really create this experience" (Preus 1987, 174). Proponents of naturalism in this sense assume that the academic student of religion must, in Preus's words, "explain religions—that is, their universality, variety, and persistence until now," on the assumption that "God is not given" (1987, xv). In the same vein, Robert Segal, in *Explaining and Interpreting Religion*, says that social scientists should assume that "believers never encounter God" (Segal 1989, 71).[4]

This conviction is based on the twofold idea that there is no Divine Actuality and that, even if there were, we, being able to experience things only through our sensory organs, would be unable to experience it. Far from being held only by those involved in the academic study of religion, this position is shared by many theologians, including Gordon Kaufman. Agreeing with Kant that concepts without percepts are empty and that percepts are exclusively sensory, Kaufman says, in response to the question as to what the word *God* might refer, "Certainly not to anything we directly experience" (Kaufman 1993, 415). On this basis, Kaufman says that the idea of God, not being at all similar to the idea of a perceptual object (such as a table or a person), is "constructed imaginatively in the mind" (p. 323). Although Kaufman does not like to have his position called atheistic, the distinction is difficult to discern.

This twofold idea—that there is no Divine Actuality and that, even if there were, we would not be able to experience it—has led to the assumption that a naturalistic approach is necessarily, in Preus's word, "reductionistic," so that religious experiences must be explained without recourse to the categories of transcendence and the sacred (Preus 1987, ix n. 2, xx, xxi). The most prevalent way of carrying out this program has been to understand religious experience purely as the result of cultural beliefs. For example, Wayne Proudfoot, in his book *Religious Experience*, argues for "a historical or cultural explanation of religious experience" (1985, 223; cf. 197, 215). What James called a religious *sense*, says Proudfoot, is really a *thought* (p. 161). Proudfoot's point is that what constitutes experiences as religious is the interpretive framework that individuals bring to the experiences, not something inherent in the experiences themselves. Rather than explain the existence of religious beliefs, at least partly, in terms of religious experiences, we ought to explain the occurrence of religious experiences in terms of religious *beliefs*, which are to be explained in entirely nonreligious terms. In the same vein, Bryan Rennie, in a critique of Ninian Smart's view of religious experiences, suggests that we should understand such experiences in terms of responses to nonreligious stimuli. According to this approach, the religious dimensions of the experience, such as awe, belong entirely to the response, which would be understood to be, in its entirety, internally generated. The awe would not be seen as involving a *receptive* element, as if something inherent to the stimulus—such as a quality of holiness or sacredness—evoked the awe. In terms of this analysis, Rennie concludes that "there is nothing identifiable as 'religious' experience" per se (Rennie 1999, 65, 68).

These analyses by Proudfoot and Rennie exemplify Segal's stipulation that for an explanation of religion to count as *scientific*, it must say that religion has "a naturalistic *rather than* divine origin" (Segal 1989, 19). The analyses also exemplify what Preus calls the program of explaining and interpreting religion in terms of a "naturalistic paradigm," understood as

"an altogether nonreligious point of view" (Preus 1987, xiii, xiv). These analyses thereby exemplify the ideal of bringing the study of religion into line not only with scientific naturalism in the generic sense but also with the sensationism and atheism of naturalism$_{sam}$.

This program of explaining religion reductionistically, in terms of nonreligious causes, is reinforced and expanded by the materialism of naturalism$_{sam}$. *Materialism* can be defined as the twofold doctrine that (1) the ultimate units of the world are entities or events devoid of both experience and spontaneity and (2) nothing exists except such units, interactions among them, and aggregations of them. Materialism is thereby a descendant of the mechanistic dualism of René Descartes and most of the other founders of the early modern worldview, which affirmed the first of these two points, thereby giving a mechanistic account of the physical world, while denying the second point. That is, far from saying that nothing exists except bits and aggregations of matter, these early modern thinkers affirmed the existence of three nonmaterial realities: (1) human minds or souls, understood to be different in kind from the bits of matter comprising the human body; (2) God, who created both matter and souls and also, being omnipotent, could make them interact or at least seem to; and (3) ideal entities, such as moral and mathematical forms, which exist in God. In the transition from this supernaturalistic, dualistic worldview to the worldview of naturalism$_{sam}$, all three of these exceptions to complete materialism, being closely intertwined, were given up. The rejection of a supernatural deity left the interaction between mind and body, understood dualistically, unintelligible, and science-based thinkers eventually gave up dualism in favor of some form of materialistic identism,[5] which holds that what we call the mind or soul is identical with the brain. This elimination of the mind or soul left the idea of a divine actuality distinct from the universe without analogy, thereby contributing to the transition from supernaturalism to atheism.[6] The rejection of theism meant, in turn, that there was no locus in the universe for ideal entities, so both morality and mathematics had to be regarded as invention, not discovery. With this threefold rejection of God, souls, and ideal entities, everything, including human experience, had to be understood solely in terms of the causal powers of subatomic particles and aggregates of these.

There are several ways in which this materialistic outlook provides reinforcement for the urge to give reductionistic interpretations of religious experience. In the first place, the identist equation of the mind with the brain reinforces the sensationist doctrine of perception. Those who affirm extrasensory perception usually regard this perception as involving influence at a distance, in which the causal influence from the perceived object to the perceiving mind is direct and unmediated, whereas they see sensory perception, by contrast, as involving a chain of contiguous influences from

the object to a sensory organ and then to the brain. Extrasensory perception is, in other words, usually understood to be a mode of perception that bypasses the body's brain, with its sensory system. If the mind is not distinct from the brain, however, all perception necessarily involves the brain.[7] Materialism thereby reinforces the idea that religious experience must be explained without appeal to nonsensory perception.

That idea is further reinforced by the doctrine that nothing exists except bits and aggregations of matter. Religious experience has usually been understood to involve the nonsensory experience of some "presence" or "spirit" that could not be understood in terms of the categories customarily used to describe material objects. Materialism entails, however, that no such spirits or presences exist, so even if we had the capacity for nonsensory perception there would be no objects for it to perceive.

According to some materialists, however, this twofold fact—that there is no nonsensory perception and that there are no spiritual realities, whether in the human body or the universe at large—does not mean that inherently religious experience cannot occur. Religious experience can be understood as a type of experience generated by a particular part or functioning of the brain. According to proponents of this view, this interpretation is superior to the cultural-source theory, which, as we saw, involves denying that any experiences are inherently religious. Although a neuroscientific explanation may be equally reductionistic in the sense of viewing a religious experience as generated entirely from within rather than as a response to a Holy Actuality transcending the individual, it is not reductionistic in the sense of explaining away the apparently religious quality of that experience. A neuroscientific explanation can in principle, some of its proponents would say, give an account of the varieties of religious experience, summarized by James ([1902] 1982) and Richard Maurice Bucke (1940), that agrees with their view that such experiences are inherently religious. It remains true, nevertheless, that this explanation is reductionistic in the sense that, by denying that religious experiences point to the truth of religious interpretations of the universe and human destiny, it would be regarded by most religious believers as a hostile interpretation.

In any case, besides reinforcing the urge to explain religious experience reductionistically that is provided by the sensationism and atheism of naturalism$_{sam}$, its materialism also expands this urge. Although I have thus far concentrated on theistic religious experience, meaning experience felt to be that of a Holy Actuality distinct from the perceiver, religious experience (in both theistic and nontheistic traditions) also includes experiences suggestive of life after death. Some of these involve apparitions of someone who has died; the reported postcrucifixion appearances of Jesus would fit into this category.[8] I will focus here, however, on a second type of experience suggestive of life after death: the out-of-body experience, in which one seems, to oneself, to be experiencing from a perspective outside

of one's physical body.[9] The out-of-body experiences that have been studied most intensely lately, especially by many medical doctors, are *near-death* out-of-body experiences, which occur when the persons are physically near death, often in hospitals. Materialism usually leads thinkers simply to dismiss reports of such experiences as fraudulent, mistaken, or pathological.

Insofar as thinkers who presuppose naturalism$_{sam}$ take such experiences seriously enough to try to explain them, they offer some type of "intrasomatic" explanation, according to which the experiencer, contrary to her or his own perspective, was really still in the body. These intrasomatic explanations can largely be divided into the same two types as the materialistic explanations of theistic religious experiences, namely, cultural-psychological and physiological explanations. Cultural-psychological explanations typically say that people who report out-of-body experiences are fulfilling fantasies, denying death, experiencing depersonalization, dreaming, or simply lying. The most prevalent physiological explanations attribute the experience to schizophrenia, temporal-lobe seizure, drugs, endorphins, or insufficient oxygen in the brain (see Griffin 1997a, 239–43).

Whichever type of explanation is preferred, the more general assumption is that any explanation, to be scientific, must be intrasomatic. For example, Richard Blacher, a physician who classifies the near-death out-of-body experience as a "fantasy of death," defends his a priori rejection of extrasomatic interpretations by saying that it would be unscientific to "accept the ideas of spirits wandering around the emergency room" (Blacher 1980, 30). Philosopher Susan Blackmore argues that a scientific explanation would have to be an intrasomatic interpretation, because science supports the materialistic view that "mental phenomena depend upon, or are an aspect of, brain events" (Blackmore 1993, 47). An extrasomatic interpretation would also be unscientific, she holds, because it would suggest that we have a soul that could survive death, whereas "science tells us that death is the end" (1993, xi).

The Question of the General Adequacy of Naturalism$_{SAM}$

In the aforementioned ways, the acceptance of scientific naturalism, equated with naturalism$_{sam}$, leads to reductionistic interpretations of religious experiences, according to which they signify something radically different from what most of those having such experiences take them to signify. Although many of those who offer such interpretations may consider it unfortunate that their interpretations diverge so radically from the experiencers' self-interpretations, they assume that this divergence is unavoidable, because only an interpretation that is consistent with naturalistic$_{sam}$ can be considered scientific or even academic. This assumption is based on the further assumption that naturalistic$_{sam}$ has proved to

be a satisfactory basis for explanations in science and in life more generally. Given this further assumption—that naturalistic$_{sam}$ has proven itself adequate for virtually everything except religious experience—it would certainly make sense to try to bring the interpretation of religious experience into line with it. The intellectual ideal behind this move is domain uniformitarianism, according to which we should try to interpret every domain using the same basic principles.

The crucial question here is whether the further assumption is true. Has naturalistic$_{sam}$ in fact proven itself adequate for virtually everything else? Although the assumption that it has seems to be widespread in intellectual circles, the truth is otherwise. Each aspect of naturalism$_{sam}$—its sensationism, its atheism, and its materialism—creates problems that stand in the way of a worldview that is adequate for science in particular and for experience more generally. I deal with each aspect briefly.

Problems Arising from Sensationism. The general nature of the problems created for science by sensationism is that science claims to be an empirical enterprise, which means, among other things, that its fundamental notions are based on experience. The sensationist version of empiricism, however, does *not* provide an experiential basis for a number of notions presupposed by the scientific enterprise. I will mention six such notions.

1. The external world. "The belief in an external world independent of the perceiving subject," declared Albert Einstein (1931, 66), "is the basis of all natural science." But Hume's analysis of sensory perception showed that it provides only sensory data, not knowledge of an actual world. Although Hume pointed out that *in practice* he necessarily presupposed such a world, his philosophical *theory* entailed solipsism. The irrationality to which sensationism leads is illustrated by physicalist Willard Quine. Having insisted that "whatever evidence there *is* for science *is* sensory evidence" (Quine 1969, 75), so that "our statements about the external world face the tribunal of sense experience" (1953, 41), Quine agrees with Hume that we have no knowledge of physical objects, so they are in the same boat as Homer's gods. Quine nevertheless "believe[s] in physical objects and not in Homer's gods" (1953, 44). He thereby continues Hume's irrational divorce of theory from inevitable presuppositions of practice.

2. The past and (therefore) time. As George Santayana pointed out (1955, 14–15), the consequences of the sensationist theory of perception are even worse than Hume acknowledged. It implies "solipsism of the present moment," because sense perception provides no knowledge of the existence of a past. With no knowledge of the distinction between past and present, we can have no knowledge of time. Quine, acknowledging that sensory experience gives us only the "specious present," asks how we take the "momentous" step involved in "the transcending of the specious present." Then,

however, showing no awareness of Santayana's analysis, he says that we begin with "a state of language that is limited to the specious present *and to short-term memories and expectations*" (Quine 1995, 36; emphasis added). He thereby simply presupposes the knowledge of temporality that was to be explained.

3. Causation and induction. As Hume also showed, sensory perception provides no basis for affirming causation, in the sense of the real influence of one thing on another. Sensory perception therefore provides no basis for affirming a necessary connection between cause and effect, hence no basis for scientific induction. Pointing out the seriousness of this problem for the rationality of science, Hans Reichenbach said that it suggests that science "is nothing but a ridiculous self-delusion" (Reichenbach 1938, 346). The widespread belief that the problem is insoluble (in terms of naturalism$_{sam}$) is illustrated by A. J. Ayer's whistling-in-the-dark assertion that we should "abandon the superstition that natural science cannot be regarded as logically respectable until philosophers have solved the problem of induction" (Ayer 1952, 49).

4. Mathematical objects. Mathematics seems to deal with a "Platonic realm" of nonphysical objects, which by definition cannot be perceived by the senses. One famous mathematician, Kurt Gödel, said that our knowledge of these objects comes through a nonsensory type of perception, which we call mathematical intuition (Gödel 1990, 268). Most philosophers of mathematics, however, have rejected this idea. Hilary Putnam, insisting that "we think with our brains, and not with immaterial souls," declared, "We cannot envisage *any* kind of neural process that could even correspond to the 'perception of a mathematical object'" (Putnam 1994, 503).[10] This reaffirmation of the view that we have no source of knowledge about reality other than sensory perception leaves only three alternatives: (1) Affirm formalism, according to which mathematics is merely a game with meaningless symbols; given the fact that most mathematicians are Platonic realists in practice (Hersh 1997, 7; Maddy 1990, 2–3), this option entails a complete divergence between theory and practice. (2) Overcome the problem of "unobservable Platonic entities" through the desperate attempt to think of mathematical objects as part of the physical world so that they can be perceived by sensory perception (Maddy 1990, 44, 59, 178). (3) Ignore the problem, which is Quine's response. Being a physicalist in the sense of considering physics the final arbiter of ontology, Quine affirms the existence of the abstract entities of mathematics on the grounds that they are indispensable for physics. But he simply "ignores the problem," as Putnam puts it (1994, 153), of "how we can know that [these] abstract entities exist." Putnam, disavowing the type of argument he expressed earlier, here endorses this Quinean attitude. Those who think science should be a rational enterprise will not find any of these solutions acceptable.

5. Logical truth. Because, as Putnam points out (1994, 500), "the nature of mathematical truth" and "the nature of logical truth" are one and the same problem, sensationism creates the same problem for logical knowledge, which is even more widely presupposed by science. Although Putnam at one time endorsed the denial (famously made by Quine in "Two Dogmas of Empiricism," reprinted in Quine 1953) that there are any a priori truths different in kind from empirical truths, Putnam later declared, in "There Is at Least One A Priori Truth" (1983, 98-114), that the principle of noncontradiction is an absolutely unrevisable a priori truth. Putnam's continued acceptance of sensationism, however, leads him to ignore the question of how we know this truth.

6. Moral (and aesthetic) ideals. Much scientific activity presupposes the objectivity of moral ideals. Most medical research, for example, presupposes that some states of affairs—such as the absence of suffering—are better than others and that it is right to promote those states of affairs. (Science also presupposes various aesthetic ideals, such as the idea that certain things are "fitting" and certain proofs "elegant.") But many philosophers reject the idea that moral assertions are cognitive, in the sense of being capable of being true, on the grounds that we, being limited to knowledge gained through our sensory organs, can have no knowledge of moral principles or ideals (Mackie 1977, 38–39; Harman 1977, 9–10; Williams 1985, 94). For example, although Quine allows mathematical objects to slip by his "tribunal of sense experience," he enforces this tribunal with regard to moral objects, thereby excluding moral judgments from the realm of cognitive assertions (Hahn and Schilpp 1986, 663–65).

Problems Arising from Materialism. Materialism was defined earlier as "the twofold doctrine (1) that the ultimate units of the world are entities or events that are devoid of both experience and spontaneity and (2) that nothing exists except such units, interactions among them, and aggregations of them." Although this position creates problems for analyses of time, causation, induction, gravitation, and evolution (see Griffin 2001a), I will limit my discussion to five other problems, the first four of which are involved in the overall mind-body problem.

1. The emergence of experience. One problem is how things with experience could have emerged out of things wholly devoid of experience. Colin McGinn, saying that we have no understanding of how "the aggregation of millions of individually insentient neurons [constituting the brain] generate subjective awareness," declares the problem to be insoluble in principle (McGinn 1991, 1). McGinn even says that at this point "scientific naturalism runs out of steam," because "it would take a supernatural magician to extract consciousness from matter" (p. 45). McGinn thereby gives inadvertent support to the position of Richard Swinburne, who has long included an "argument from consciousness" in his arguments for the exist-

ence of an omnipotent, supernatural deity (Swinburne 1979, chap. 9; 1986, 198–99). McGinn and other naturalists cannot, of course, accept this solution, so they are left with a problem that, by their own admission, is insoluble in principle.[11]

2. Freedom. Another dimension of the mind-body problem involves the question of how freedom is possible. John Searle has provided an especially clear analysis. Searle, on one hand, believes that science "allows no place for freedom of the will," because science teaches that the world "consists entirely of mindless, meaningless, physical particles" (Searle 1984, 92, 13). Explicitly rejecting any numerical distinction between the mind and the brain, Searle says of the human head that "the brain is the only thing in there" (1992, 248). The implication is that the behavior of human beings, like the behavior of all aggregations of physical particles, is to be explained in terms of bottom-up causation (1984, 93). We must hold, therefore, that "the psychological facts about ourselves, like any other higher level facts, are entirely causally explicable in terms of . . . elements at the fundamental micro-physical level" (1984, 98). This means that the causal relations behind our experiences "are entirely a matter of neurons and neuron firings at synapses" (1984, 93). Consciousness, as an emergent property of the brain, cannot "cause things that could not be explained by the causal behavior of the neurons" (1992, 63). The idea of statistical indeterminacy at the quantum level also provides no basis for affirming freedom, Searle adds, because all such indeterminacy is canceled out in macro-objects, such as billiard balls and human bodies, and "the human mind can[not] force the statistically-determined particles to swerve from their paths" (1984, 87).

Searle says, on the other hand, that this deterministic conclusion is not a position any of us can live with in practice, because "our conception of ourselves as free agents is fundamental to our overall self-conception." Accordingly, "we can't act otherwise than on the assumption of freedom, no matter how much we learn about how the world works as a determined physical system" (Searle 1984, 86, 97). Although some materialists try to reconcile these two conclusions by redefining freedom to make it compatible with physical determinism (see Lycan 1987, 113–18),[12] Searle rightly rejects this move, pointing out that the freedom that we all presuppose involves "the belief that we could have done things differently from the way we did in fact do them" (Searle 1984, 92).[13] The upshot of Searle's discussion is that, although he cannot help presupposing freedom, the fact that it is not reconcilable with scientific materialism means that it must be an illusion that evolution has built into the structure of human experience (1984, 5, 94, 98).[14]

3. Mental causation. Closely related to the problem of freedom is that of mental causation. We all presuppose in practice that our thoughts, especially our decisions, exert "downward causation" on our bodies. For

example, we know that we walk to the water fountain *because* we want a drink. Materialist philosophers, however, have been unable to explain how this is possible, given their commitment to the idea that the microlevel of the world studied by physics is causally sufficient for all effects, so all vertical causation is *upward* causation. An example is provided by Jaegwon Kim, a highly respected materialist philosopher of mind who has worked for many years on this issue. Kim said early on that for a position to affirm epiphenomenalism, according to which "our reasons and desires have no causal efficacy at all in influencing our bodily actions," would constitute a *reductio ad absurdum* of that position (Kim 1993, 104–6). Kim eventually realized, however, that materialism could not avoid epiphenomenalism, at which point he declared that his position seemed to be "up against a dead end" (p. 367).[15]

4. Rational activity. Closely related to the problem of mental causation—indeed, an aspect of it—is the problem of how we can engage in rational activity.[16] According to the materialist worldview, all causation is *efficient causation*, the influence of one thing or event on another. The rational activity of a philosopher of science is, however, action in terms of some norm, such as the norm of adequacy to the facts or self-consistency. Rational activity is, in other words, an example of *final* causation, causation in terms of a norm or goal. The materialist worldview has no room for such activity, however, because the mind is equated with the brain and the brain's activities are said to be, like everything else, determined by the causal activities of their most elementary parts, which are assumed to consist entirely of sequences of efficient causation. McGinn raises this problem by asking "how a physical organism can be subject to the norms of rationality. How, for example, does *modus ponens* get its grip on the causal transitions between mental states?" (McGinn 1991, 23 n.). McGinn admits that materialism can provide no answer, thereby illustrating Putnam's charge that most science-based philosophies are self-refuting, because they "leave no room for a rational activity of philosophy" (Putnam 1983, 191).

5. Ideal entities. According to sensationism, as we have seen, even if ideal entities corresponding to mathematical, logical, moral, and aesthetic judgments existed, we could not perceive their existence. Materialism, as the doctrine that nothing exists except physical particles and aggregations thereof, adds the further point that ideal entities do *not* exist, so that judgments involving them cannot be true in the sense of corresponding to anything. As we saw earlier, however, Quine affirms the real existence of mathematical objects on the grounds that physicists presuppose them. Quine, accordingly, assumes the existence of "abstract objects over and above the physical objects" (1981, 14–15), so his position "is materialism, bluntly monistic except for the abstract objects of mathematics" (1995, 14). Although Quine is right to say that physics presupposes the existence of mathematical objects, his affirmation of their existence is arbitrary, be-

cause he does not explain how these abstract or ideal entities could exist in an otherwise materialist universe. It is also arbitrary because, as we have seen, Quine denies the real existence of moral ideals, even though our moral judgments presuppose them in the same way that mathematical judgments presuppose the existence of mathematical objects. This point is made by moral philosopher Charles Larmore, who argues that any worldview that denies the existence of normative ideals is inherently self-contradictory. We must, therefore, reject the current naturalistic view of the world, which says that it contains only the objects of the physical and psychological sciences, agreeing instead with Plato's insistence that it also contains normative values (Larmore 1996, 86, 90, 116).

Problems Created by Atheism. The atheism of naturalism$_{sam}$ is also responsible for many of its inadequacies. I have argued elsewhere (Griffin 2001a, chap. 5) that atheistic cosmologies are unable to give intelligible accounts of a wide range of features of our world, including the metaphysical and cosmological order underlying the evolutionary process; the repeated occurrence of novelty, the upward trend, and the apparent jumps *in* this process; and our inevitable presuppositions about ultimate truth and importance. Here, however, I focus solely on the additional problem that atheism creates for our knowledge of ideal entities.

Paul Benacerraf, a philosopher of mathematics, has argued cogently that true beliefs can be considered knowledge only if that which makes the belief true is *causally* responsible for the belief (Benacerraf 1983). For example, we would not consider our idea of a tree to be knowledge, even if the idea happened to be true, unless we thought that this idea had been to some extent produced by the tree itself. The resulting problem for mathematical knowledge is that mathematical objects, being ideal rather than actual entities, cannot be thought to exert causation. As Reuben Hersh points out, this was not a problem for traditional thinkers, for whom numbers could be causally efficacious in the world by virtue of being thoughts in the mind of God. "Yet most mathematicians and philosophers of mathematics," while no longer believing in God, "continue to believe in an independent, immaterial abstract world—a remnant of Plato's Heaven . . . , with all entities but the mathematical expelled. Platonism without God is like the grin on Lewis Carroll's Cheshire cat. . . . The grin remained without the cat" (Hersh 1997, 2). The implication of Benacerraf's insight, in other words, is that atheism renders unintelligible the idea that we can have knowledge of a Platonic realm of numbers. Several philosophers of mathematics, including Hersh himself, use Benacerraf's insight as the basis for rejecting a Platonic realm (Maddy 1990). As Quine points out, however, such a realm is presupposed by physics. Benacerraf's insight, plus Quine's observation, implies that atheism makes an adequate philosophy of mathematics impossible.

The same conclusion is implied by our presuppositions about moral norms. Several philosophers have used Benacerraf's insight to support the denial that moral knowledge could consist of knowledge of normative values existing in an ideal realm (Mackie 1977, 38–39; Harman 1977, 9–10; Williams 1985, 94). Larmore demonstrates, however, that our normative knowledge implies the existence of such values. Although Larmore evidently does not himself see this point, his demonstration, in conjunction with Benacerraf's insight, implies that atheism makes an adequate moral philosophy impossible.

The upshot of this discussion is that naturalism$_{sam}$ is not even close to providing a worldview adequate for our experience in general and science in particular. In light of the fact that those who endorse this version of naturalism cannot account—at least without cheating—for our presuppositions about the external world, the past, time, causation, induction, rational activity, conscious experience, mental causation, freedom, mathematical objects, and logical, moral, and aesthetic norms, there is no reason to try to bring our understanding of religious experience into line with it. Indeed, the fact that naturalism$_{sam}$ cannot allow for genuine religious experience, rather than being a reason to doubt such experience, is simply one more reason to consider naturalism$_{sam}$ a woefully inadequate framework for interpreting human experience in general and scientific experience in particular. There is no good reason, accordingly, to think of a reductionistic interpretation of religious experience, whether it be in terms of culture, pathology, or brain processes, as an especially "scientific" explanation.

An Alternative Version of Scientific Naturalism

To say this is *not* to say, however, that a scientific explanation need not be naturalistic in the generic sense. Naturalism in this generic sense—that is, as the rejection of the possibility of supernatural interruptions of the world's normal pattern of causal relations—is now simply presupposed by the scientific community. And, unlike naturalism$_{sam}$, it does not contradict any of our inevitable presuppositions or any well-documented phenomena.[17] It is not objectionable, therefore, to think that explanations of religious experience, to be acceptable from a scientific or even a more broadly academic point of view, should be naturalistic in this generic sense.

The implication of this point, when conjoined with my argument against naturalism$_{sam}$, is that we need an alternative, more adequate version of naturalism$_{ns}$. My recent books (1997a; 1998; 2000a; 2001a) have been devoted to showing that the philosophy of Alfred North Whitehead provides such a version of naturalism, which I call naturalism$_{ppp}$, with *ppp* standing for "prehensive-panentheist-panexperientialist."[18] In this version of naturalism, the sensationism of naturalism$_{sam}$ is replaced by Whitehead's

prehensive doctrine of perception, according to which sensory perception, rather than being our only or even most fundamental form of perception, is derived from a more fundamental mode of perception, in which there is a nonsensory "prehension" of other things. The atheism of naturalism$_{sam}$ is replaced by a panentheistic cosmology, according to which the universe, in the sense of the totality of finite things, exists within God, understood as the soul of the universe. And the materialism of naturalism$_{sam}$ is replaced by panexperientialism, according to which all true individuals—as distinct from nonindividualized, aggregational groupings of individuals, such as rocks—have at least some experience and spontaneity.

This version of naturalism can account for all the presupposed notions that naturalism$_{sam}$ cannot. Thanks to the panexperientialism of naturalism$_{ppp}$, we can understand how our conscious experiences can arise out of our brains, enjoy a degree of free self-determination, and then act back upon our brains and thereby upon the larger world. The materialistic view that the mind must be numerically identical with the brain resulted from the failure of dualistic interactionism, articulated most famously by Descartes. Because Descartes thought of the brain, along with the rest of nature, as composed of bits of matter devoid of both spontaneity and experience, he necessarily thought of the human mind, with its freedom and conscious experience, as different in kind from the brain's components, which we now call neurons. He could explain the interaction between brain and mind, therefore, only by appealing to God's supernatural power. Materialists, wanting to avoid this appeal to a *deus ex machina*, rejected the idea of a mind that is numerically distinct from the brain, instead making conscious experience a property of the brain. It is this idea, that the mind and the brain are numerically identical, that makes it impossible for materialists to do justice to our presuppositions about freedom, rational activity, and mental causation and to accept the possibility of nonsensory perception and genuine out-of-body experiences. Panexperientialism, by contrast, allows a return to the idea that mind and brain are numerically distinct but without affirming the problematic idea of dualistic interactionism. Because the brain's neurons are thought of as having their own experience and spontaneity, we can think of the mind or soul as a distinct actuality that arises out of the brain and, on the basis of its own partially self-determining experience, acts back upon it. This is a return to interactionism, but it is a *nondualistic* interactionism, so it is intelligible without supernatural assistance. With this panexperientialism, we avoid the impossible question of how experience emerges out of nonexperiencing things; we can take our experiences of freedom, rational thought, and mental causation at face value; and we can conceive of the possibility of nonsensory perception and even experiences out of the body.

Thanks to the panentheism of naturalism$_{ppp}$, we can reaffirm the old idea that mathematical, logical, moral, and aesthetic ideals can both exist

and have causal efficacy in the world because they exist in God. Implicit in this assertion is the idea that the God of panentheism exerts influence in the world. But this idea does not make panentheism a version of supernaturalistic theism, because this divine influence is understood as part and parcel of the world's normal causal relations, not an interruption thereof.[19] Because of its denial of the possibility of divine interruption, furthermore, this version of theism is not undermined by the problem of evil, which was one of the main reasons for the decline of the supernaturalistic version of theism.[20] This doctrine can, nevertheless, explain those features of the world, mentioned in passing earlier, that an atheistic cosmology cannot explain—namely, the world's order; the novelty, upward trend, and apparent jumps in its evolutionary process; and our presuppositions about ultimate truth and importance.[21]

Finally, thanks to the prehensive, nonsensory doctrine of perception of naturalism$_{ppp}$, we can understand that we inevitably presuppose the reality of the external world, the past, time, and causation because we have a direct, presensory experience of them. We can likewise understand our mathematical, logical, moral, and aesthetic intuitions as reflecting, to some extent, patterns really existing in the nature of things, because we experience these patterns, even if dimly, by virtue of our prehension of God. On this basis, we can see that theistic religious experience can involve a direct experience (prehension) of a Holy Actuality, in whom we live, move, and have our being. And on this basis, in turn, we can understand why human beings always and everywhere have been religious, orienting their lives around the idea of something holy or sacred.[22] Insofar as such an explanation of the existence and persistence of religion is based on a naturalistic worldview that is more adequate and coherent than naturalism$_{sam}$, it should be regarded as superior from an academic, including a scientific, point of view.

The widespread view against which the present essay is directed can be illustrated in terms of the following statement, quoted at the outset of a recent essay by Willem Drees (1997, 525): "Materialism is now the dominant systematic ontology among philosophers and scientists, and there are currently no established alternative ontological views competing with it. As a result, typical theoretical work in philosophy and the sciences is constrained, implicitly or explicitly, by the various conceptions of what materialism entails."[23] I agree that materialistic naturalism is currently dominant and that it does, in fact, typically constrain theoretical work in philosophy and the sciences. But I emphatically do not agree that it *should* constrain our theoretical work, if we see not only that it is woefully inadequate but also that an alternative ontological view, which is equally naturalistic, is available.[24] Of course, as the quotation indicates, this alternative view is not currently "established," in the sense of being widely accepted in

philosophical and scientific circles. But if enough of us allow the criteria of adequacy and self-consistency to count more heavily than the current majority vote, it could in time become the established view.

NOTES

1. I have discussed the distinction between theistic and nontheistic religious experiences in Griffin 2001a, especially chap. 7, "The Two Ultimates and the Religions."
2. Except to the extent that Kant argued that theoretical, or scientific, reason had to presuppose a deterministic, nontheistic worldview.
3. This general view could, in contrast with naturalism$_{nati}$, be called supernaturalism$_{da}$, with the *da* standing for either "distinct actuality" or "distinct agent." Although my own position, Whiteheadian panentheism, is a version of this doctrine, I resist calling it a type of supernaturalism, because the term *supernaturalism* almost invariably suggests supernaturalism in the interruptionist sense (which can be called supernaturalism$_{in}$). For example, William James used the term *piecemeal supernaturalism* for his own doctrine, according to which there is a divine actuality (1) that is distinct from the "sensible" world (the world known through sensory perception) and (2) that acts variably in this world—"interpolat[ing] itself piecemeal between distinct portions of nature," rather than merely working wholesale on the whole world, as Hegelian idealists had said (James [1902] 1982, 515–16, 520–25). However, although James, I am convinced, meant this piecemeal divine activity to be a normal part of the world's causal processes, *not* an occasional supernatural interruption thereof, his use of the term *supernaturalism* has led many interpreters, such as John Mackie (1982), to interpret James as an interruptionist.
4. I have given a critique of the positions of Preus and Segal in Griffin 2000b.
5. This transition from dualism to materialistic identism often went through the "halfway house" of epiphenomenalism, according to which the mind is a nonefficacious by-product of the brain's activity. That is, although epiphenomenalists regard the mind as distinct from the brain, they do not allow it to exert any "downward causation" on the body.
6. Just as the transition from dualism to identism often went through epiphenomenalism, the transition from supernaturalism to atheism often went through deism, according to which God is distinct from the world but, after creating it, exercises no further downward causation in it. Both views were designed to support the idea of the physical world as a completely autonomous, deterministic system.
7. Some materialists have argued that this position does not strictly rule out the possibility of nonsensory perception, but it does, at the least, make it much less plausible.
8. For an account that agrees with this point even while holding to a traditional, supernaturalist interpretation of the resurrection of Jesus, see Perry 1959.
9. Those who regard at least some apparitions as veridical—that is, as evoked by the discarnate existence of the person in question—typically consider out-of-body experiences and apparitions the insider's and the outsider's view, respectively, of the same occurrence; see Griffin 1997a, 267.
10. This quotation comes from an essay originally published in 1979, when Putnam still held a materialist worldview, with a functionalist, cybernetic view of the mind—a view he repudiates in later essays reprinted in the 1994 collection of essays.
11. I document these admissions from other materialists in Griffin 1998, Introduction and chapter 6, and in Griffin 2000a, chapter 6.
12. I discuss Lycan's position in Griffin 1998, 212–17.
13. A similar analysis of the problem of freedom and determinism is provided by Thomas Nagel (1986, 110–23), who says that he cannot help holding himself and others responsible but can see no coherent way to affirm responsible (incompatibilist) freedom.
14. I discuss Searle's position on freedom more fully in Griffin 1998, 38–40, 163–70; 2000a, 151–57.
15. Chapter 10 of Griffin 1998 is devoted to a critique of Kim's position. That chapter is reprinted, in slightly revised form, as Griffin 1999, which is followed by a response from Kim and a counter-reply from me.
16. Kim points out that thinking of ourselves as capable of mental causation is closely related to thinking of ourselves "as reflective agents capable of deliberation and evaluation—that is, . . . as agents capable of acting in accordance with a norm" (1993, 215).

17. Although some religious thinkers would claim that scientific naturalism$_{ns}$ is contradicted by numerous well-documented miracles, I have argued that the alternative version of naturalism recommended here can accommodate the various kinds of phenomena traditionally called miracles; see Griffin 1997a and, for a more thorough philosophical discussion, Griffin 1993.

18. It is, however, only in Griffin 2000a and 2001a that I thematize the notion of scientific naturalism and develop the terminological distinction between naturalism$_{sam}$ and naturalism$_{ppp}$ as alternative ways to embody naturalism$_{ns}$. I should add that the discussion in the former book was less clear in that, while (properly) referring to naturalism$_{ns}$ as "minimal naturalism" (which I have here called generic naturalism), I usually referred to naturalism$_{sam}$ as "maximal naturalism" rather than recognizing (except in a footnote on p. 106) that naturalism$_{sam}$ and naturalism$_{ppp}$ are alternative "maximal" ways to embody naturalism$_{ns}$.

19. This denial that panentheism involves supernaturalism depends on the definition of naturalism as the denial of interruptionism. As I mentioned earlier, however, some thinkers define naturalism as the doctrine that "nature is all there is." See note 3.

20. I discuss the problem of evil in Griffin [1976] 1991; 1991; 2001b.

21. I discuss these and other reasons to affirm the existence of God, naturalistically conceived, in chapter 5, "Natural Theology Based on Naturalistic Theism," of Griffin 2001a.

22. In chapter 2, "Perception and Religious Experience," of Griffin 2001a, I show that Whitehead's category of the "initial conformity of subjective form" can explain how the direct prehension of an actuality with the quality of "holiness" could sometimes evoke a conscious experience of holiness in us.

23. Drees quoted this statement from Moser and Trout 1995. Although Drees claims that materialistic naturalism need not be atheistic and can otherwise be compatible with a religious outlook, I have argued that the theism and religion allowed by Drees's version of naturalism are extremely minimal (Griffin 1997b; 2000a, 64–79).

24. Drees himself has generously said that he considers the Whiteheadian form of religious naturalism one of the most challenging alternatives to his own position (Drees 1996, 236).

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