

## DIVINE ACTION: EXPECTED AND UNEXPECTED

by R. J. Berry

*Abstract.* Miracles are signs of God's power. Confusion about them comes from misunderstanding or doubting the relationship between God and creation rather than from science properly understood.

*Keywords:* complementarity; God of the gaps; David Hume; miracles; providence.

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Miracles are a subsidiary or derivative perplexity of everyday life, whose credibility and acceptability depend on one's belief and understanding of divine providence. The Bible does not distinguish between God's constant sovereign providence and particular sovereign acts, which include miracles. For those who have moral or philosophical doubts about the ability or willingness of God to act in the world, there will always be questions about the occurrence and nature of miracles. This is well exemplified by the Enlightenment rationalizations of Thomas Jefferson, who revered Jesus for his benevolence and ethical teaching but rejected miracles and mysteries (such as the Trinity) as incompatible with nature and reason.<sup>1</sup> He twice produced his own edition of the gospels, leaving out all the miracles. The so-called Jefferson Bible, *The Life and Morals of Jesus of Nazareth*, appeared in 1820 (Jefferson compiled it for private use; it was formally published only in 1904). It ended with Jesus' burial: "they rolled a great stone to the door of the sepulchre, and departed." There Jefferson's version ended; there is no mention of the Resurrection, the greatest miracle of all.

Jefferson typifies the Enlightenment emphasis on reason at the expense of all other methods of understanding. Prior to the seventeenth century, miracles were largely unquestioned as part of the mysteries of the world. There were, of course, skeptics, but systematic doubts began to surface

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only with the modern rise of cosmological and physical sciences (Harrison 1998). Discussion of any current understanding of miracles therefore has to begin with the Enlightenment period, with its enthusiasms, iconoclasm, and optimisms—and especially with David Hume’s (in)famous definition of a miracle as “a violation of the laws of nature; and as a firm and unalterable experience has established these laws, the proof against a miracle, from the nature of the fact, is as entire as any argument from experience can possibly be imagined” (Hume [1748] 1902, 114). Hume’s arguments have reverberated ever since (see Brown 1984, 79–100; Alexander 2001, 426–50), together with a recurring unease that they are circular. As C. S. Lewis put it,

Of course we must agree with Hume that if there is absolute “uniform experience” against miracles, if in other words they have never happened, why then they never have. Unfortunately we know the experience against them to be uniform only if we know that all the reports of them are false. And we can know the reports to be false only if we know already that miracles have never occurred. In fact, we are arguing in a circle. ([1947] 1960, 106)

Indeed, Hume’s argument can be turned on its head to make the existence of God probable if there is ever an accumulation of testimony to particular miracles (Holder 1998).

The background for Hume’s distaste for miracles was his view that the world was ruled by “natural” laws, with God relegated to no more than the First Cause, a Creator who left his creation to run along the lines he laid down at the beginning. Such a Creator would be wholly transcendent and could affect the workings of the world only by intervening or suspending the laws he had set in place. Ironically, Hume himself understood the laws he had in mind to reflect the ordering of the human mind rather than any intrinsic properties of matter, but his arguments are commonly taken to reflect a general assumption of a world controlled by mechanical principles just like any other machine (or, for that matter, any living organism).

The Enlightenment of Hume’s times was a self-conscious attempt to shed past superstition and achieve freedom through aggressive secularization (Porter 2000). These rationalizing habits of the Enlightenment are now dissolving in a postmodern reaction against objectivity and an almost perverse acceptance of the miraculous as representing valid experiences for groups or individuals in particular cultures. Although postmodernism raises important questions and challenges for realism in general and science in particular, most of humankind—at least in the Western world—has not changed its realist assumptions.<sup>2</sup> The problem is still that faced by Hume—to fit God into a causal nexus: God may exist but is assumed to be powerless to intervene. If God exists, the argument goes, he must be thought of as operating on an entirely spiritual or metaphysical plane.

## SKEPTICISM, CREDULITY, OR REALITY

In 1984 the Church of England appointed David Jenkins, a university professor of theology, Bishop of Durham. Jenkins was on record as insisting that no educated person could believe in physical miracles; any such belief could only be a hangover from prescientific times, when we knew far less about the causes of natural events than we do now. For him,

Miracles are part of encountering the openness and presence of God within the textures, structures and activities of the created world. They are produced and experienced by means of the space which is kept open, or made open, in that world by the intercourse of God with free and searching persons. . . . Miracles can be perceived and identified only by personal faith within the tradition, story and community of faith. (Jenkins 1987, 30)

Jenkins described Christ's resurrection as "a conjuring trick with bones." Although he explicitly denied that miracles were "only subjective experiences," his definition contradicted this: for him, miracles were "*gifts*—to faith and for faith, but not public and objective pressures into faith" (p. 31).

Jenkins's arguments were stimulating counters for academics but were widely regarded as unacceptable for a church leader. His appointment produced widespread protests. I wrote to the London *Times*, in a letter co-signed by thirteen other scientists, six of them Fellows of the Royal Society:

In view of the recent discussions about the views of Bishops on miracles we wish to make the following comments. It is not logically valid to use science as an argument against miracles. To believe that miracles cannot happen is as much an act of faith as to believe that they can happen. We gladly accept the Virgin birth, the Gospel miracles, and the Resurrection of Christ as historical events. We know that we are representative of many other scientists who are also Christians standing in the historical tradition of the churches.

Miracles are unprecedented events. Whatever the current fashions in philosophy or the revelations of opinion polls may suggest it is important to affirm that science (based as it is upon the observation of precedents) can have nothing to say on the subject. Its "laws" are only generalisations of our experience. Faith rests on other grounds. (*The Times*, 13 July 1984)

Six days after this letter was published, *Nature* carried an editorial titled "Miracles Do Not Happen."<sup>3</sup> The editor, John Maddox, wrote:

A group has invited trouble by claiming that science has nothing to say about miracles. . . . Nobody can sensibly complain that scientists of various kinds are often religious people of one persuasion or another, or quarrel with the conclusion of Berry *et al.* that the "laws" of science are "only generalisations of our experience" and that "faith rests on other grounds." But it is a travesty of something to assert that science has nothing to say about miracles.

Take an uncontentious miracle, such as the turning of water into wine. This is said to have happened at a wedding feast, when the supply of wine was unexpectedly exhausted. The only published account has it that jars of drinking water were found to have been transformed into wine in the socially embarrassing circumstances that had arisen. The account is now firmly a part of the Christian legend,

but that is not the same as saying it is the account of a phenomenon. Obvious alternative explanations abound. As scientists, the signatories would not have given a favourable referee's opinion of such an account for a scientific journal. And far from science having "nothing to say" about miracles, the truth is quite the opposite. Miracles, which are inexplicable and irreproducible phenomena, do not occur—a definition by exclusion of the concept.

Ordinarily, the point would not be worth making. The trouble with the publication from Berry *et al.* is that it proves a licence not merely for religious belief (which, on other grounds, is unexceptionable) but for mischievous reports of all things paranormal, from ghosts to flying saucers. (Maddox 1984)

This criticism prompted a number of replies, mostly agreeing with us and dissenting from the editor's assumptions. For example, P. G. H. Clarke objected:

Your concern not to licence 'mischievous reports of all things paranormal' is no doubt motivated in the interest of scientific truth, but your strategy of defining away what you find unpalatable is the antithesis of scientific. It is disheartening that *Nature* should sell its empiricist birthright for the stale soup of *a priori* rationalism. (Clarke 1984)

Donald MacKay wrote,

If, as Christians have traditionally believed, the whole spatio-temporal sequence of events that make up our world owes its being to our Creator, then it is thanks to Him that our scientific explanations normally prove as reliable as they do. But by the same token nothing whatever in our observation of "normal precedents" can make it impossible for the Creator to bring about a totally unprecedented event, if His overall purpose for His creation requires it. (MacKay 1984)

MacKay went on to make an important assertion:

For the Christian believer, baseless credulity is a sin—a disservice to the God of truth. His belief in the resurrection does not stem from softness in his standards of evidence, but rather from the coherence with which (as he sees it) that particular unprecedented event fits into and makes sense of a great mass of data. . . . Both wishful thinking and wishful unthinking are evils.

Having published a clutch of such letters, the editor of *Nature* then asked me to write a 3,000-word article on miracles, which he published as "What to Believe about Miracles" (Berry 1986). (My proposed title was less presumptuous; it was similar to that of this section—"Miracles: Scepticism, Credulity or Reality?") This produced its own crop of responses, including an examination of the subject by William Kruskal in his Presidential Address to the American Statistical Association (Kruskal 1988) and a letter to me from a leading U.S. biologist saying that the only miracle to him was "that *Nature* would publish such dreary bullshit."

#### MIRACLES AND MECHANISM

The (commonly unexpressed) assumption about divine action is that knowledge of the cause or mechanism of some phenomenon implies that we know everything there is to know about its effective agency. This is un-

warranted reductionism. As long ago as the fourth century B.C.E. Aristotle pointed out in his *Metaphysics* that there were differences between material, efficient, final, and formal causes (roughly the matter, cause of change, purpose, and essential nature of a thing). Nowadays we rarely separate these four causes, but we frequently distinguish between ultimate and proximate causation. In normal scientific work we tend to concentrate on a particular cause for the purpose of analysis or experiment; if carried out consciously, this is a legitimate practice. It can be described as operational or pragmatic reductionism. On the other hand, it can be positively confusing to insist that the cause in question is the only and therefore relevant one. Such an assumption should be recognized as doctrinaire or ontological reductionism (Ayala 1974). MacKay labeled it “the fallacy of nothing-buttery.” He illustrated its dangers with the Morse Code. To the uninitiated or even to a physicist with the capability of analyzing the periodicity and spectrum of light, the dots and dashes of the Code would be “nothing but” flashes; to someone who could decode the message, they might reveal information about a person in distress or even an impending threat to the decoder (MacKay 1965, 57). David Wilkinson (1993, 98) has made the same point, pointing out that a kiss can be accurately defined as “the approach of two pairs of lips, the reciprocal transmission of carbon dioxide and microbes, and the juxtaposition of two orbicular muscles in a state of contraction,” but that his wife had another and no less accurate definition of a kiss, albeit in nonscientific language.

Michael Polanyi approached the same situation in terms of “levels” of explanation. He argued that all machines (and even life itself) operate by principles made possible and limited by physical and chemical laws but not *determined* by them. They are restricted by what he called “boundary conditions.” Without transgressing the laws of physics and chemistry, machines can be controlled by a set of laws that enable them to harness lower (physicochemical) laws by a principle different from and for a purpose outside those laws. In other words, one set of basic laws may not fully describe the control because they have boundary conditions imposed on them (Polanyi 1969, 232).

MacKay has done more than anyone else to develop these insights into a model for divine providence in a scientific deterministic world. He built on the well-known paradox that light and electrons can behave—or be described—as either particles or waves. Danish physicist Niels Bohr suggested that these different properties can be usefully described as *complementary*: “The phenomena transcend the scope of classical physical explanation, [but] the account of all evidence must be expressed in classical terms . . . by alternative conceptual systems.” For example,

In biological research, references to features of wholeness and purposeful reactions of organisms are used together with the increasingly detailed information on structure and regulatory processes. . . . It must be realised that the attitudes termed

mechanistic and finalistic are not contradictory points of view, but rather exhibit a complementary relationship which is connected with our position as observers of nature. (Bohr 1958, 92)

Other scientists have seized upon complementarity as a valuable concept. Robert Oppenheimer applied it to mechanistic versus organic analyses of life processes and to behavioral versus introspective descriptions of personality; Charles Coulson to problems of mind versus brain, free will versus determinism, theology versus mechanism; William Pollard to human freedom versus divine providence (Barbour 1966, 292). MacKay has extended the notion to dynamic processes, using the example of a television transmission, which is produced by known physical mechanisms and received by known physiological mechanisms, and yet can convey a "story" (a drama or ball game, for instance) independently of the mechanisms involved.

MacKay applies this approach directly to God's action in the world:

The God in whom the Bible invites belief is no "Cosmic Mechanic." Rather is He the Cosmic Artist, the creative Upholder, without whose continual activity there would be not even chaos, but just nothing. What we call physical laws are expressions of the regularity that we find in the pattern of created events that we study as the physical world. Physically, they express the nature of the entities "held in being" in the pattern. Theologically, they express the stability of the great Artist's creative will. Explanations in terms of scientific laws and in terms of divine activity are thus not rival answers to the same question; yet they are not talking about different things. They are (or at any rate purport to be) complementary accounts of different aspects of the same happening, which in its full nature cannot be adequately described by either alone. (MacKay 1960, 10)

A valuable implication of MacKay's model is that it allows a traditional and robust understanding of God's providence. It also permits a God who is outside time as well as space. Such a God is difficult for us to comprehend. To picture a God outside time is not to imagine God as static or uninvolved but as seeing creation—its complete span of space and time—as a whole. The purpose setting, the planning, the unfolding of the drama with all of its interconnected parts, combine to make up that whole.

We may find it just about possible to conceive of God within time and even of God outside time, but thinking of God as both together is much more difficult. John Polkinghorne (1989, chap. 7) talks of God "being" (God outside time) and God "becoming" (God within time) as opposite poles of the model; in contrast MacKay (1988, 193) distinguishes between two persons in one Godhead: God-in-eternity and God-in-time, God transcendent and God immanent.

The two interpretations are fundamentally different. MacKay believes that God's sovereignty is unaffected by the discoveries of modern science. No hidden gap is needed, for God is able to write into the history of the universe whatever he chooses. This is supported for MacKay by "logical indeterminacy," the idea that no human agent can predict the future abso-

lutely without changing the conditions on which the prediction was made.<sup>4</sup> This means that the future cannot be determined, even in a totally deterministic world.

Polkinghorne approaches the problem by referring to the inherent openness of complex dynamical systems. For him the future is contained within an envelope of possibilities so that the actual pathway followed can be selected by input of information (not energy) from the mind. This approach has been criticized on the grounds that

to attribute the information input to an act of the mind, it needs to be preceded by a mental decision on the desired outcome. But if the mind is embodied, this decision would already have a physical correlate and so the information input cannot be the point of choice. Freedom must lie elsewhere. Alternatively, if the information input is not seen to be the result of a previous state of mind, then we get back to a “liberty of indifference”—and what causes this information input, chance? All such attempts to explain the freedom of a non-dualistic mind through the openness of physical process are likely to meet this problem. (Doye *et al.* 1995, 127)

Wider questions of determinism and consciousness are beyond the scope of this essay. My immediate aim here is to describe the complementarity model as it applies to God’s work in general and the interpretation of miracles in particular. I took this approach in my *Nature* paper:

As far as miracles are concerned, this [complementarity together with the limits to conventional science (see Medawar 1984)] means that they are impossible to prove or disprove on normal scientific criteria; we accept the possibility of their occurrence by faith, and equally deny them by faith. Even if we know or deduce the mechanism behind a miracle, this does not necessarily remove the miraculous element. For example, the Bible tells us that the Israelites crossed the Red Sea dryshod because “the Lord drove the sea back by a strong east wind and made the sea dry land” (Exodus 14:21 NIV); the significance of the miracle lies in its timing and place rather than its actual occurrence. (Berry 1986)

I know of no reason to change my conclusion.

#### MIRACLES THROUGH TIME

I am not competent to review in detail the ways in which our understanding of miracles has changed with our worldview or our knowledge of science (for an authoritative survey see Brown 1984), but some comments are in order. As we have noted, “modern” skepticism developed with the notion of a deterministic world controlled by “natural” laws. Baruch Spinoza, Conyers Middleton, Hume, and (later) Friedrich Schleiermacher were all significant contributors, and the contemporary debates are well chronicled. However, an interesting revival of interest in miracles took place in the 1830s over the question of whether new species could arise. This rapidly became part of a more general debate about the mechanism(s) by which geological change could take place and, specifically, whether

“uniformitarianism” (gradual and to some extent progressive change) was possible. There was no problem with the contemporarily accepted “catastrophism” or “diluvialism,” because this could be attributed to God’s judgments. Uniformitarianism, on the other hand, offended the prevailing Deism of the time (Cannon 1960).

The uniformitarians gradually gained the ascendancy on scientific grounds, but the debate sank below overriding arguments following publication of the Charles Darwin and Alfred Wallace papers in 1858. However—and this is the reason for introducing this particular debate—rapid acceptance of biological evolution (including the possibility of novel species) in the next two decades<sup>5</sup> was accompanied by clarification of theological issues, culminating in Aubrey Moore’s essay in *Lux Mundi*, in which he pointed out that

The question of miracles became [in the nineteenth century] the burning question of the day, and the very existence of God was staked on His power to interrupt or override the laws of the universe. Meanwhile, His immanence in nature, the “higher pantheism,” which is a truth essential to true religion as it is to true philosophy, fell into the background. Slowly but surely that theory of the world has been undermined. The one absolutely impossible conception of God in the present day, is that which represents Him as an occasional Visitor. Science had pushed the deist’s God farther and farther away, and at the moment when it seemed as if He would be thrust out altogether, Darwinism appeared and under the guise of a foe, did the work of a friend. It has conferred upon philosophy and religion an inestimable benefit by showing us that we must choose between two alternatives. Either God is everywhere in nature, or He is nowhere. . . . It seems as if in the providence of God, the mission of modern science was to bring home to our unmetaphysical ways of thinking the great truth of the Divine immanence in creation, which is no less essential to the Christian idea of God than to a philosophical view of nature. It comes to us almost like a new truth. . . . (Moore 1889, 99–100)

In view of subsequent arguments about evolution and Darwinism, there is considerable irony in recognizing that Darwin “under the disguise of a foe, did the work of a friend.”<sup>5</sup> In terms of understanding and accepting God’s work through evolution, it is worth remembering that Darwin’s ideas found a more ready welcome among evangelicals than among liberals because of the stronger doctrine of providence held by the former (Livingstone 1987).

Modern creationism should be distinguished from the nineteenth-century version in that it has most of its roots in early twentieth-century Adventism and only tenuous connections with earlier debates (Numbers 1992). Notwithstanding, contemporary creationism highlights the persistence of deism. Its advocates assume a Unitarian god who lit the touch paper for the Big Bang and then retreated above the bright blue sky to preside over creation, occasionally intervening in its working. The currently fashionable antievolutionists’ insistence that evolution can be equated with materialism (see Johnson 1991) owes more to assumptions of Deism than to the biblical theism elaborated by Moore (Pennock 1999).



This lack of understanding of a God who is both immanent and transcendent was illustrated by the outburst of horror in Britain when John Robinson published *Honest to God* (1963) to challenge the idea of God solely “out there.” Robinson’s proposal was complicated because he followed Paul Tillich in secularizing God by separating him from religion, and the implications he drew from this attracted widespread condemnation. But on the main issue, Lewis was certainly overoptimistic when he wrote, “The Bishop of Woolwich [John Robinson] will disturb most of us Christian laymen less than he anticipates. We have long abandoned belief in a God who sits on a throne in a localised heaven” (cited by Hooper 1996, 115). “Christian laymen” still seem to have a naive and limited view of the God revealed in the Bible and treat miracles as, in Polkinghorne’s words (1983, 54), “embarrassments” rather than as the traditional and biblical understanding of them as signs of divine power and the inauguration of God’s kingdom on earth.

#### CONCLUSION

Science per se can neither prove nor disprove the occurrence of miracles. The common and often explicit assumption about them is that science excludes them by its demonstration of a deterministic network of cause and effect that leaves “no room” for God to act except by breaking or at least suspending the laws which he established in the first place. Attempts to find ways in which God can operate in such a world are all variations of seeking gaps in the casual nexus, some of them highly sophisticated endeavors involving concepts from quantum indeterminacy or chaos theory. It must be emphasized as firmly as possible that science does not and can never substantiate such a mechanistic universe; to claim that God is beholden to physical laws in this way is an unwarranted extrapolation that ignores the existence of emergent properties in complex systems, levels of explanation in the sense of Polanyi, and complementarity in the sense of MacKay.

We can, of course, disbelieve in the very existence of God; such atheism is logically coherent—but it is an assumption that is dependent on faith. Once we accept the possibility of a god, we have to ask how (s)he relates to the world in which we live: is (s)he an impersonal deistic force or the personal creator and sustainer of Judeo-Christianity and Islam? The Enlightenment descent into Deism (ironically upheld by creationists) is not the biblical God who is immanent as well as transcendent and who, as Christians believe, came into history and reconciled the world to himself (Colossians 1:20) in a way testified by the “signs” (or miracles) described in the Gospels, especially the Incarnation and the Resurrection (Edwards and Stott 1988, 169–233). As faith in inevitable progress spawned by Enlightenment rationalism falls into apparently terminal decay in the face of

recalcitrant evil (Bowler 2001), we have to acknowledge that a god of the gaps is not worth belief: if God is not lord of all, (s)he is little more than religious vapor (Swinburne 1998). We do not have to exercise great faith to believe in miracles; what we need is faith in a great God.

#### NOTES

1. "When we shall have done away with the incomprehensible jargon of the Trinitarian arithmetic that three are one and one is three . . . when in short, we shall have unlearned everything which has been taught since his [Jesus'] day and got back to the pure and simple doctrines he inculcated, we shall then be truly and worthily his disciples" (Thomas Jefferson, in Dickensen 1983, 403).

2. The almost inevitable persistence of realism in practical living is emphasized by Paul Gross and Norman Lefitt (1994, 234): "Reality is indeed the overseer at our elbow, ready to rap the knuckles or spring the trap into which one has been led by over confidence, or by a too complacent reliance on mere surmise. Science succeeds precisely because it has accepted a bargain in which even the boldest imagination stands hostage to reality. Reality is the unrelenting angel with whom scientists have agreed to wrestle."

3. This episode and the subsequent correspondence is referred to by Terence Nichols in his article on miracles in this issue (Nichols 2002).

4. "Logical indeterminacy" is consistent with a freedom of spontaneity (or compatibilist freedom) and precludes the need for invoking a liberty of indifference (or libertarian freedom). It should be noted that Polkinghorne does not accept MacKay's conclusion on the grounds that any prediction must involve processes in the brain, hence "in no way does it seem that the inevitability of the future is mitigated" (Polkinghorne 1986, 95).

5. Frederick Temple (who had preached at the beginning of the 1860 British Association meeting when the notorious confrontation took place between T. H. Huxley and the Bishop of Oxford) is often credited with giving an ecclesiastical imprimatur to evolution in his Bampton Lectures, published as *The Relations Between Religion and Science* (1885), "God did not make things, we may say; no, but he made them make themselves." Temple's argument was essentially deistic, but he fully accepted the fact that evolution had occurred.

6. This is still denied by modern-day creationists: see, for example, C. J. Collins (2001), who apparently equates the possibility of "natural" explanations for miracles as materialism.

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