

Divine intervention and the conservation of energy: a reply to Evan Fales

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Received: 21 February 2013 / Accepted: 1 June 2013
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Abstract Evan Fales has recently argued that, although I provide the most promising approach for those concerned to defend belief in divine intervention, I nevertheless fail to show that such belief can be rational. I argue that Fales' objections are unsuccessful.

In his recent monograph, *Divine Intervention: Metaphysical and Epistemological Puzzles*, Fales asserts that the most promising avenue for theists to take in defending the reality of divine intervention is to adopt Robert Larmer's suggestion that God adds energy to the universe, writing that "the best way for a theist to provide a suitable account of miracles is to dig in...and insist upon God's ability to create and destroy energy".¹ Fales' use of the term 'promising' in this regard is somewhat misleading; advancing the claim that God adds energy to the universe seems necessary if one is to defend divine intervention, since the creation, annihilation or moving of material entities by a non-physical agent involves the creation or destruction of energy.² Neither should Fales' use of the term 'promising' be taken to mean that he thinks that the prospects for successfully defending divine intervention are in fact bright.

Indeed, inasmuch as divine intervention in the physical universe implies the non-conservation of energy, Fales, along with many others, judges that the likelihood of successfully defending divine intervention is faint or non-existent. Thus, for example, William Stoeger writes that,

direct divine intervention...would involve an immaterial agent acting on or within a material context as a cause...This is not possible ...if it were

¹ Fales (2010, p. 15, 36).

² Larmer (1986).

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...energy...would be added to a system spontaneously and mysteriously, contravening the conservation of energy.³

Fales defends his judgment that a successful defence of divine intervention involving God's ability to create or annihilate energy is unlikely on the basis of the balance of probabilities argument in Part I of Hume's *Of Miracles*, writing that advocates of divine intervention will "be in the position of having to stare down Hume's argument, insofar as the evidence we have, apart from miracle reports, indicates that breaches of the world's energy and momentum economies do not occur."⁴ Although he does not lay it out explicitly, Fales seems to have something very like the following argument in mind:

Premise: The claim that divine intervention takes place and the claim that energy is conserved in the physical universe are contradictory, that is to say if one is true the other must be false.

Premise: In judging which of these claims it is reasonable to believe we ought to believe the claim with the most evidence in its favour.

Premise: The claim that energy is conserved in the physical universe has more evidence in its favour than the claim that divine interventions take place.

Conclusion: We ought to believe that energy is conserved in the physical universe and that divine interventions do not occur.

What are we to make of this argument? First, as Fales seems prepared to grant, there is considerable ambiguity in how the Principle of the Conservation of Energy gets formulated.⁵ The Principle is commonly stated either as 'Energy can neither be created nor destroyed', or 'In an isolated system the total amount of energy remains constant'. It is routinely assumed that these two statements are logically equivalent. This assumption is false, however. From the proposition 'Energy can neither be created nor destroyed' the proposition 'In an isolated system the total amount of energy remains constant' can be deduced. But from the proposition 'In an isolated system the total

³ Stoeger (1995, p. 244). This concern has led scientist-theologians such as Nancey Murphy, Arthur Peacocke, and John Polkinghorne to suggest that divine interventions into the natural order should be understood as imparting information, rather than energy, into the universe. This is to ignore, however, that the creation or transfer of information always has energetic implications. See, for example, Larmer (2009).

⁴ Fales, *Divine Intervention*, p. 17. Fales takes for granted that Hume, in Part I of the *Essay*, provides a clear and strong argument against the rationality of belief in miracles. It is far from evident that this is the case. Commentators substantially disagree on how the argument is to be interpreted and its strength. Earman (2000), in his *Hume's Abject Failure* takes Hume to task both on the basis of his lack of understanding of probability theory and the ambiguity of the text. On the basis of a close reading, Earman argues that

commentators who wish to credit Hume with some deep insight must point to some thesis which is both philosophically interesting and which Hume has made plausible. I don't think that they will succeed. Hume has generated the illusion of deep insight by sliding back and forth between various theses, no one of which avoid both the Scylla of banality and the Charybdis of implausibility or outright falsehood. p. 48

In the context of this paper, nothing hangs on how one interprets Hume. Fales' arguments, inasmuch as they appeal to balancing probabilities, have a Humean flavour, but what is important is to evaluate them on the basis of their own merits.

⁵ *Ibid.*, pp. 15–16.

amount of energy remains constant' the proposition 'Energy can neither be created nor destroyed' cannot be deduced'. The latter claim involves a much greater ontological commitment than the former.

Second, it is important that these two formulations of the Principle not be conflated. Theists cannot accept the claim that energy can neither be created or destroyed, since it not only rules out miracles but creation *ex nihilo*.⁶ They can, however, accept the claim that energy is conserved in an isolated system. They reject not the well-evidenced claim that energy is conserved to the degree that a system is causally isolated, but the speculative claim that the physical universe is an isolated system not open to the causal influence of God. In short, they are in a position to affirm the Principle when it is formulated as a scientific law and not as a metaphysical commitment which excludes the possibility of theism.

What this means is that, so long as there is good reason to accept the scientific rather than the metaphysical form of the Principle, there can be no basis upon which to generate a balance of probabilities argument opposing evidence which supports belief in divine intervention and evidence which supports belief in the Principle. The theist denies not that energy will be conserved in an isolated system, but that the physical universe is in fact an isolated system.⁷ Accepting the occurrence of a miracle does not commit the theist to denying the vast body of experimental evidence supporting the claim that energy will be conserved in an isolated system, but rather the far more speculative claim that the universe is not open to the causal influence of God.

Third, any attempt to move from the well-evidenced claim energy is conserved in an isolated system to the more speculative claim that the universe is in fact an isolated system is ill-founded. All that any experiment can be thought to show is that to the degree that a system is isolated the amount of energy in it will be conserved. This evidence is neutral regarding the further question of whether there exists something capable of creating or destroying energy. If the move from the claim that energy is conserved in an isolated system to the claim that energy can neither be created nor destroyed were to be justified, it would have to be on the grounds that there exists no evidence that energy is ever created or destroyed and that the claim that energy can

⁶ An essential claim of theism is that God causes the universe to exist. If the universe is conceived to be composed of forms of mass/energy that can neither be created nor destroyed, then this claim is false.

⁷ As Alvin Plantinga notes, conservation principles

apply to *isolated* or *closed* systems...there is nothing in them to prevent God from changing the velocity or direction of a particle. If he did so, obviously, energy would not be conserved in the system in question; but equally obviously, that system would not be closed, in which case the principle of the conservation of energy would not apply to it. Indeed, there is nothing here to prevent God from miraculously parting the Red Sea, or changing water into wine, or bringing someone back to life, or, for that matter, creating *ex nihilo* a full-grown horse in the middle of Times Square. It is entirely possible for God to create a full-grown horse in the middle of Times Square without violating the principle of the conservation of energy. That is because the systems including the horse would not be closed or isolated. For that very reason, there would be no violation of the principle of conservation of energy, which says only that energy is conserved in closed or causally isolated systems—ones not subject to any outside influence. It says nothing at all about conservation of energy in systems that are *not* closed; and, of course, if God created a horse *ex nihilo* in Times Square, no system containing that horse, including the whole of the material universe, would be closed. (2011, pp. 78–79).

neither be created or destroyed provides a deep structural explanation of *why* energy is conserved in an isolated system. Any such attempted justification is problematic on several counts.

First, the theist is able to provide an alternative deep structural explanation of the fact that energy is conserved to the degree that a system is causally isolated. The theistic conception of the universe as a contingent reality in which secondary physical causes operate equally explains why the scientific form holds true. It will not do, therefore, for the critic to suggest that the claim that energy can neither be created nor destroyed is the only possible deep structural explanation of energy conservation in isolated systems.

Second, the claim that energy can neither be created nor destroyed is at odds with the Big-Bang theory of the origin of the universe. This theory is commonly interpreted as implying an absolute beginning to the mass/energy that composes the universe.⁸ It is possible to accept both the claim that energy is conserved in an isolated system and the Big-Bang theory but it is hard to see how acceptance of the claim that energy can neither be created nor destroyed is consistent with Big-Bang cosmology, since it would imply that the mass/energy making up the universe had no beginning.⁹

Third, the claim that energy can neither be created nor destroyed, cannot be used as the basis upon which to frame a balance of probabilities argument designed to show conflict between the positive evidence taken to support belief in the Principle and the evidence in favour of miracles. Endorsement of the claim that energy can neither be created nor destroyed requires, at the very least, that there exists no positive evidence that energy is ever created or destroyed. The occurrence of miracles, conceived as events involving the creation or annihilation of energy, conflicts not with any positive experimental evidence supporting belief that energy is conserved to the degree that a system is isolated, but rather with the negative claim that there is no evidence for events involving the creation or destruction of energy. Faced with reports of miracles, the occurrence of which would constitute evidence that energy can be created or destroyed, it begs the question to dismiss such reports as antecedently improbable on the grounds that they imply the falsity of the claim that energy can neither be created

⁸ Craig and Sinclair (2009).

⁹ An anonymous referee suggests that to interpret Big Bang cosmology as implying an absolute beginning to the mass/energy that composes the universe is to commit to an untenable absolutist conception of time, and probably space. This appears mistaken. Leading writers on the topic such as Quentin Smith and William Lane Craig, explicitly argue that time and space began as a result of the big Bang, yet hold to an absolute beginning of the mass/energy making up the universe. Smith writes that “the empirically established cosmological theories that predict a beginning of the universe do so by predicting a beginning of time”. (1995, p. 118), and Craig notes that

the standard big bang model, as the Friedman-Lemaître model came to be called, thus describes a universe that is not eternal in the past, but which came into being a finite time ago. Moreover—and this deserves underscoring—the origin it posits is an absolute origin *ex nihilo*. For not only all matter and energy, but space and time themselves, come into being at the initial cosmological singularity. (2004, p. 223)

Also see Spitzer’s very detailed discussion in his *New Proofs for the Existence of God*. (2010, pp. 13–74) and Gordon’s “Postscript to Part One: Inflationary Cosmology and the String Multiverse” (2010, pp. 75–103) in Spitzer’s *New Proofs for the Existence of God*.

nor destroyed. One cannot rule out there being wolves in the forest on the basis that there is presumably no evidence of their presence, and then refuse to accept reports of tracks, scat, and sightings on the basis that one has already established that there are no wolves in the forest. Similarly, one cannot urge that the claim that energy can neither be created nor destroyed be accepted on the basis that this has never been observed, and then use one's acceptance of that claim to rule out the occurrence of miracles, on the grounds that they would constitute evidence that energy can be created or destroyed.

It seems evident, therefore, that attempts to move from the well-evidenced claim that, to the degree that a physical system is causally isolated, its energy will be conserved, to the speculative claim that energy can neither be created nor destroyed cannot be justified. The claim that energy can neither be created nor destroyed is at odds with our best cosmological theories, begs the question of whether miracles occur, and a priori rules out the possibility of theism being true. It functions not simply as a well-evidenced statement of observed regularity in nature but rather as a speculative defining postulate of physicalism.¹⁰

Fales is not persuaded that distinguishing between these two forms of the Principle makes it any more possible for theists to defend the reality of divine intervention. If we leave aside conceptual issues of the nature of causality and agency, Fales offers three criticisms of the suggestion that, so long as the Principle of the Conservation of Energy is conceived as a scientific law, that is to say the claim that to the degree that a physical system is causally isolated its energy will be conserved, rather than as the defining-postulate of physicalism, that is to say the claim that energy can neither be created nor destroyed, it provides no reason to reject miracle reports.

His first criticism is that we have evidence-abundant evidence—that the only sources of energy are natural ones. Our evidence is just this: whenever we are able to balance the books on the energy (and momentum) of a physical system, and find an increase or decrease, and we look hard enough for a physical explanation of that increase or decrease, we find one.¹¹

This, however, is to beg the question of whether miracles occur by conflating two distinct issues; one, is there good evidence an event occurred, and two, does it have a natural explanation. Having noted that miracles would involve the creation of energy *ex nihilo*, Fales is prepared to assert “there is no case in which, given sufficient understanding of a system we have failed to find...a physical explanation (i.e. the transfer of energy from physical systems).”¹² Given such an assertion, one would expect him to provide an argument that if events such as Jesus turning water into wine, multiplying loaves and fishes, or returning to life after three days of being dead actually occurred, there is a plausible natural explanation for such events, and that they are thus not

¹⁰ Ducasse, writing in 1951, fails to distinguish between the two forms of the Principle...He sees clearly, however, the implications of the claim that energy can neither be created nor destroyed, when he notes that “conservation of energy is something one has to have, if (as the materialistic ontology of...naturalism demands) one is to be able to conceive the physical world as wholly self-contained, independent, isolated.” (1951, p. 241).

¹¹ Fales, *Divine Intervention*, p. 16.

¹² *Ibid.*

miracles. He provides no such argument. His assumption seems to be that there is no need to provide a natural explanation of such events, since they do not in fact occur.

This, however, is to beg the question against the theist. If such events do in fact occur, it is far from obvious that there is good reason to think they can be explained in terms of natural causes.¹³ Indeed, it is precisely the difficulty of explaining such events in terms of natural causes which leads many to insist that they did not occur, though this is to beg the question of the truth of naturalism. One cannot in good conscience endorse naturalism on the basis that there are no events which require supernatural explanation, and then reject reports of miracles on the grounds that the occurrence of such events is inconsistent with the truth of naturalism.

If Fales is to reject belief in such events, he must provide good reasons to dismiss the testimonial evidence in favour of them. He cannot do this, however, on the basis that such evidence is in conflict with the evidence taken to support belief in the Principle of the Conservation of Energy, since that evidence only supports the claim that energy will be conserved to the degree that a system is causally isolated, and says nothing regarding the question of whether the physical universe is in fact an isolated system not open to the causal influence of God. Fales is left, therefore, simply asserting in the face of a large body of testimonial evidence to the contrary that no events ever occur which require explanation in terms of supernatural intervention.

This is in no way to deny that the class of physical events which can be explained in terms of the operation of physical causes—for the theist, these will be seen as created secondary causes—will be much larger than the class of miracles, that is to say events arising from divine intervention. It is therefore true—leaving aside the issue of the origin of the mass/energy that makes up the physical universe—that the class of events which can be explained in terms of the transfer of energy from one physical system to another will be much larger than the class of events which must be explained in terms of the *ex nihilo* creation of energy. It is clear, however, that the numerical size of a class of events has little to do with the probability that a particular member of that class has or has not occurred. As Gary Colwell notes, “the likelihood of occurrence of a particular event should be determined by all the weight of evidence, *pro* and *con*, relevant to that one event, and not simply by contrasting the number of past events in the class to which the particular event belongs with the number of related contrary events outside the class.”¹⁴ To insist, as Fales appears to do, that, since many events have purely natural explanations, the testimony supporting belief in events that cannot be plausibly thought to have natural explanations must be rejected, is to make the specious argument that because there exist events which are not miracles, there cannot exist events which are miracles.

Fales’ second criticism is that the nonconservation of energy that is required for stock-in-trade miracles must be localized... What we need is a measurable, quite macroscopic input of energy that is well localized... There are excellent reasons—just the sorts of reasons upon

¹³ If there exists no complete explanation in terms of natural causes it will be impossible, to use Fales’ phrase, to ‘balance the books’ on energy conservation.

¹⁴ Colwell (1982, p. 331).

which we invoke a law-for thinking that the world is constructed in such a way as not to allow this.¹⁵

It is unfortunate that Fales does not make explicit what he takes these reasons to be. Very likely, these are based upon his view that miracles are to be defined as violations of the laws of nature. Given, however, that there is no reason to think that God adding energy to the universe would violate any law of nature, including the Principle of the Conservation of Energy, he is under an obligation to make clear what exactly are the reasons to think that the world is constructed in such a way as not to allow localized input of energy by a supernatural agent. Until he does this, we have assertion, not argument.

Fales' third criticism is puzzling. Recognizing "that the best way for a theist to provide a suitable account of miracles is...[to] insist upon God's ability to create and destroy energy and momentum,"¹⁶ he nevertheless maintains that "this will mean denying the relevant conservation laws" adding the caveat that "one can nevertheless retain those laws for closed systems...[that is to say] retain their correctness so long as only natural forces are operating."¹⁷ Given that one must deny the Principle of the Conservation of Energy, this means that the theist must deal with Hume's balance of probabilities argument, since "the evidence we have, apart from miracle reports, indicates that breaches of the world's energy and momentum economies do not occur."¹⁸

Fales' comments seem confused on several counts. First, he ignores the distinction between the two forms of the Principle. Only if he is prepared to defend the claim that energy can neither be created nor destroyed is he entitled to claim that defending miracles involves denying the Principle of the Conservation of Energy, yet he provides no such defence and takes no notice of the fact that one cannot move easily from the claim that energy is conserved in an isolated system to the claim that energy can neither be created nor destroyed.

Second, his comment that the theist will nevertheless be able to retain the Principle as applying to closed systems is strange. The theist is quite willing to grant that, to the degree that a system is causally isolated, its energy will be conserved. Having granted this, it bears mention that the only completely isolated system ever proposed is the physical universe, since all systems within the universe are causally affected by their surrounding physical environment. To presuppose, however, that the universe is an isolated system is to beg the question of whether there exists a God who may choose to intervene in its workings.¹⁹ Perhaps what Fales has in mind, is that in a closed

¹⁵ Fales, *Divine Intervention*, p. 16.

¹⁶ *Ibid.*, p. 17.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ Lest it be objected that this is to make the Principle vacuous, finding no application in the physical universe, it should be noted scientists routinely make reference to ideal gas laws, even though they are cognizant of the fact that no gases actually behave in such a manner. Just as an ideal gas law conveys genuine information, inasmuch as it tells us that to the degree that an actual gas resemble an ideal gas the actual gas will behave in a certain way, the scientific form of the Principle of the Conservation of Energy conveys genuine information, inasmuch as it tells us that to the degree that a physical system is causally isolated its energy will be conserved. As Ellis notes that

physical system there will be no creation or destruction of energy. This may be so, but hardly implies that energy can neither be created nor destroyed, or that there is no good evidence that energy is ever created or destroyed.

Third, Fales' comment that the theist is "still in the position of having to stare down Hume's argument, insofar as the evidence we have, apart from miracle reports, indicates that breaches of the world's energy and momentum economies do not occur"²⁰ needs clarification. Is he suggesting this on the basis of the claim that energy can neither be created nor destroyed? If so, he needs to provide a defence of that claim and is not entitled to assume that the evidence that supports the claim that energy is conserved in an isolated system equally supports the claim that energy can neither be created nor destroyed. Not only does he need to provide such a defence, he would have to show that it has more evidential support than the claim that there occur events which involve the creation or destruction of energy. He provides no such arguments. Until he does, he is in no position to claim that in acknowledging miracles the theist must deny the Principle of the Conservation of Energy.

Alternatively, Fales may be suggesting that the evidence that supports the claim that energy will be conserved to the degree that a system is causally isolated conflicts with the evidence for miracles, understood as event which involve the creation or destruction of energy. If this is his suggestion, it seems difficult to defend. The evidence that supports the belief that energy is conserved to the degree that a system is not causally acted upon by something external to it, is neutral as regards the possibility that God may decide to intervene in the working of a particular system. It will not do, therefore, to insist that evidence for miracles must be taken as being in opposition to the evidence that energy will be conserved to the degree that a system is causally isolated from external causes. It is thus wrong for Fales to claim that the theist must 'stare down' a Humean balance of probabilities argument based on two conflicting bodies of evidence.

Fales' claim that the only evidence we have apart from miracle reports supports the idea that the universe's energy remains constant and that this should count as a reason for disbelief in miracles is weak. As noted earlier, it commits him to the fallacious argument that because there are many events which are not the result of divine intervention, we should disbelieve any evidence for events which need to be explained as the result of divine intervention. Two further comments concerning Fales' claim are in order, however.

First, it is far from clear that miracles are unique in suggesting the creation or destruction of energy. Our best cosmological theories suggest an absolute beginning to the universe and are at odds with the claim that energy can neither be created nor destroyed. Equally, there are many competent philosophers who defend mind-body

Footnote 19 continued

ideal laws often remain the fundamental ones, even when much more realistic laws are known. The perfect gas laws...are still the fundamental laws of the theory of gases, even though real gases are not perfect. (2002, p. 94)

²⁰ Fales, *Divine Intervention*, p. 17.

dualism. If immaterial minds do act upon bodies then miracles are not the only events involving the creation or destruction of energy.

Second, even if miracles are thought to be the only events which involve the creation or destruction of energy, this cannot constitute a reason for not taking seriously the evidence in their favour. The assumption that miracle reports are few and only come from uninformed, less than critical, sources cannot be maintained in light of the evidence. A conservative estimate of people claiming not simply to believe in miracles, but to either have directly experienced or witnessed first hand what they consider to be a miraculous healing would be at least three hundred million.²¹ To dismiss serious consideration of this body of evidence on the basis that there are many events which do not require divine intervention for their explanation is irresponsible.

One suspects that Fales' somewhat superficial treatment of the distinction that must be drawn between the two forms of the Principle of the Conservation of Energy, and the relevance of that distinction to discussions of divine intervention, is based on his conviction that miracles must be defined as violations of the laws of nature. He is thus prepared to say that if Jesus had a normal human body then it would be metaphysically impossible for him to walk on water.²² The upshot, of course, is that if miracles involve violations of the laws of nature it is going to be difficult, perhaps impossible, for the theist to defend their occurrence on either metaphysical or epistemological grounds.

The theist, however, is under no necessity to grant that miracles violate the laws of nature, even if one takes the laws of nature to express metaphysical necessities. Laws of nature always come with a *ceteris paribus* clause; they describe what will happen in the absence of an intervening cause. The law of gravity is not violated by an object moving away from the earth's surface. As Jan Cover notes,

believing in events having supernatural causes, needn't saddle one with believing that there are *false laws of nature*, laws having exceptions. Miracles are so to speak 'gaps' in nature, occurrences having causes about which laws of nature are simply silent. The laws are true, but simply don't speak to events caused by divine intervention.²³

²¹ Keener (2011, p. 238). Keener goes on to note that,

of course many of these claims would not withstand critical scrutiny, and presumably an even higher percentage would fail to persuade others predisposed not to believe. But those who would simply reject all healing claims today...should keep in mind that they are dismissing, almost without argument, the claimed experiences of at least a few hundred million people. (p. 239)

In his two volume work, Keener presents case after case of dramatic instances of healing that are well attested by reliable witnesses and have no even remotely plausible natural explanation. Such cases are not confined to any one geographical area of the world or any particular social class. In many instances there exists not only testimonial evidence, but physical traces, e.g. before and after medical records. Those doubting the massive amount of evidence that exists for such cases would do well to consult Keener's *Miracles* (2011), especially pp. 309–765.

²² Fales, *Divine Intervention*, pp. 35–36.

²³ Cover (1999, p. 362).

Robert Young makes essentially the same point writing,

God is an active agent-factor in the occurrence of miraculous events such that his presence introduces a new (possibly unique) set of causally sufficient factors. His presence *ceteris paribus* alters the outcome from what it (perhaps would have been if, contrary to fact, he had not been present. Here there is no sense of violation or physical impossibility, [or] mere coincidence.²⁴

Once this is realized, it becomes clear that the laws of nature do not, in and of themselves, allow the prediction or explanation of any physical event.²⁵ Scientific explanations must make reference not only to laws of nature but also to the material conditions to which the laws apply. It is, for example, impossible to predict what will happen on a billiard table by making reference solely to Newton's laws of motion. One must also make reference to the number of balls on the table, their initial position, the condition of the felt, the angle the cue stick is held at, and so on. It thus becomes clear that, although we often speak as though the laws of nature in and of themselves explain the occurrence of an event, this is not the case. As Lewis comments,

we are in the habit of talking as if they (the laws of nature) caused events to happen; but they have never caused any event at all. The laws of motion do not set billiard balls moving: they analyse the motion after something else (say, a man with a cue, or a lurch of the liner, or, perhaps, supernatural power) has provided it. They produce no events: they state the pattern to which every event—if only it can be induced to happen—must conform, just as the rules of arithmetic state the pattern to which all transactions with money must conform—if only you can get hold of any money. Thus, in one sense the laws of Nature cover the whole field of space and time; in another, what they leave out is precisely the whole real universe—the incessant torrent of actual events which makes up true history. That must come from somewhere else. To think the laws can produce it is like thinking that you can create real money by simply doing sums.²⁶

The necessity of drawing this basic distinction between the laws of nature and the 'stuff' they describe means that miracles, as instances of divine intervention, can occur without violating any laws of nature. If God creates or annihilates a unit of mass/energy, or simply causes some of these units to occupy a different position, then

²⁴ Young (1972, p. 33). This line of argument has a long pedigree, going back at least as far as Mill, who writes

in order that any alleged fact should be contradictory to a law of causation, the allegation must be, not simply that the cause existed without being followed by the effect, for that would be no uncommon occurrence; but that this happened in the absence of any adequate counteracting cause. Now in the case of an alleged miracle, the assertion is the exact opposite of this. It is, that the effect was defeated, not in the absence, but in consequence of a counteracting cause, namely, a direct interposition of an act of the will of some being who has power over nature;... A miracle... is no contradiction to the law of cause and effect; it is a new effect, supposed to be produced by the introduction of a new cause (A *System of Logic*, Bk. 3, Chap. 25, Sect. 2).

²⁵ Alston (1971, pp. 17–24).

²⁶ Lewis (1947, p. 71).

He changes the material conditions to which the laws of nature apply. He thereby produces an event that nature would not have produced on its own but breaks no laws of nature. One would not violate or suspend the laws of motion if one were to introduce an extra ball into a group of billiard balls on a billiard table or alter the position of one of the balls already on the table, yet that action would alter the outcome of what would otherwise be expected to happen. Similarly, if God were to create *ex nihilo* a spermatozoon which fertilized an egg in the body of a virgin no laws of nature would be broken, yet the usual course of nature would have been overridden in such a way as to bring about an event nature would not otherwise have produced.

It should be emphasized that to claim that a miracle is an event which nature is incapable of producing on its own, is not to claim that natural processes cannot be involved. Thus the miracle of the Virgin Birth can be seen as an event in which divine intervention combined with existent natural processes, namely the normal growth and development of a fetus during pregnancy. Lewis is again helpful when he writes,

if God annihilates or creates or deflects a unit of matter He has created a new situation at that point. Immediately all Nature domiciles this new situation, makes it at home in her realm, adapts all other events to it...If events ever come from beyond Nature ...the moment [they] enter her realm they obey all her laws. Miraculous wine will intoxicate, miraculous conception will lead to pregnancy, inspired books will suffer all the ordinary processes of textual corruption, miraculous bread will be digested. The divine art of miracle is not an art of suspending the pattern to which events conform but of feeding new events into that pattern. It does not violate the law's proviso, 'If A, then B': it says 'But this time instead of A, A₂, and Nature, speaking through all her laws, replies, 'Then B₂' and naturalises the immigrant, as she well knows how.²⁷

The claim that God can produce a miracle not by violating the laws of nature, but by changing the material conditions to which the laws apply implies that Humean balance of probability type arguments pitting the evidence for the laws of nature against the evidence for miracles cannot be generated, since there is no intrinsic conflict between the two bodies of evidence. The burden of proof, therefore, is upon those who wish to dismiss the evidence for miracles; that is to say critics must produce good reasons why such evidence should not be accepted.

The usual response to the line of argument I have just described is that God's changing the material conditions to which the laws of nature apply would involve at least one violation of a law of nature, namely the Principle of the Conservation of Energy, and thus that the theist does not escape balance of probabilities arguments of a Humean nature. Once the distinction is drawn between the two forms of the Principle, however, this objection is seen to fail, despite Fales' claims to the contrary. The occurrence of miracles conflicts not with the well-evidenced scientific claim that energy is conserved in an isolated system, but rather the speculative metaphysical claim that energy can neither be created nor destroyed. There is, therefore, no reason to hold that the testimonial evidence for miracles in any way conflicts with the evidence

²⁷ Ibid., p. 72.

for the laws of nature. This means that Humean balance of probabilities arguments based on a presumed conflict between these two bodies of evidence are a red herring, providing no principled basis upon which to dismiss testimonial evidence in support of miracles. Given the abundance and quality of such evidence, rational justification of belief in miracles is a far easier matter than Fales allows.

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