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Miracles: metaphysics and modality

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Abstract: **It is argued that miracles are best understood as natural events with supernatural causes and that such causal interaction is logically possible. Such miracles may, or may not, involve violations of natural laws. If violations of laws are possible, Humean supervenience views of laws are best avoided. Where miracles violate laws, it shows that what is naturally impossible may be actual and what is naturally necessary may not be actual. Whether or not miracles actually occur, this demonstrates that the nomic modalities differ from the logical. The theory contrasts favourably with competitors and allows, contrary to an interpretation of Aquinas, that Creation would have been a miracle.**

Miracles are logically possible

I present, in this paper, an account of miracles which differs from recent theories presented by Clark, Hughes and Lowe as well as the more established theories of Swinburne and Hume.[1] In part this is based on new work on the metaphysics and modality of laws of nature.[2] If we begin with a basic intuition regarding the nature of miracles and couple it with an account of natural laws which differs from Humean predecessors, we will be able to form a coherent and defensible concept of a miracle. Nothing I say depends upon the actual occurrence, past, present or future, of any miraculous event. Rather, the desire is to find an account that satisfies the *modal* intuition that miracles are logically possible. A view of miracles as logically impossible is based on commitments that are both unnecessary and too strong.

I shall proceed by introducing the basic definition of a miracle and offering some clarification. I will then develop the metaphysical background concerning natural laws and unnatural causes and this will lead me to outline the modalities supported by natural laws if miracles are possible. I shall then test the theory against some potential problems and demonstrate that the theory delivers the right results.

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The theory

The theory begins with a basic definition of a miracle that at first looks too weak to deliver all the consequences we standardly require but which, with some explanation, can be seen to be satisfactory in many ways. (Later, I concede that an adjustment to D, which nevertheless preserves its spirit, will be necessary for some senses of 'miracle'.) The definition is:

(D) a miracle $=_{df}$ a natural event E with a supernatural cause E_s.[3]

Any degree of causation will suffice for D as whether E_s is both necessary and sufficient for E or merely necessary (or neither, for those who allow that real causes may overdetermine their effects), D deems the occurrence a miracle.[4] What D claims to be miraculous is causal interaction between the supernatural and natural and if E has E_s as but one of its causes, among others, D is satisfied; so there need be no further distinction between types of causation in this paper.

D does require clarification, however. First, it may be noted that D contains no reference to a deity. This is because it seems best to make as few claims as possible about the nature of the supernatural causes involved though, clearly, any supernatural cause would be regarded as miraculous *qua* outside intervention in the natural world. D thus would accommodate God's intervention in the natural world but would also count as miraculous any natural event caused by an angel or other subordinate agent of a deity, a supernatural 'machine', a committee of gods, a ghost, and so on.[5] It is thus an advantage of D that it contains no commitment to any particular view of the supernatural and is thus a definition that could be accepted regardless of one's religious view.[6]

Second, it may be thought that by definition a miracle must be an event which is good. Certainly if God is all-good, all-powerful and all-knowing, we would expect any natural event caused by Him to be a good one necessarily. But given that D allows the possibility of other supernatural causes it would allow a devil's interventions in the natural world to count as miraculous which, as they would presumably be bad, they should not so count. Though this may well involve important issues, I do not see it as a serious threat to D which could produce one of two responses. We could say, first, that there might be miracles that are not good – 'bad miracles' – or we could legislate against bad miracles by including the stipulation in D that the natural event with a supernatural cause is a good one. Either of these responses would suffice. I narrowly favour the first option, allowing good and bad miracles because, were we to have a devilishly-caused natural event, all the same metaphysical and modal problems would be raised. Hence, the account as it stands cannot be accused of avoiding problems by narrowing its scope.

Next, isn't any effect of a supernatural cause a miracle? I say not, but Robert Merrihew Adams thinks it is.[7] Adams follows the suggestion in Aquinas that miracles are everything God does apart from the natural order of things.[8] This

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misses the obvious point that some of the events that supernatural causes cause may be other supernatural events. If a supernatural event E_{s1} causes supernatural event E_{s2}, and causes no natural event as well, we have no reason to say that a miracle occurred as there is no causal interaction between the supernatural and natural. Hence D is preferred to the Adams/Aquinas view.

I come now to what is perhaps a more serious problem from a philosophical perspective. This is the concern that the definition still does not allow that miracles are logically possible because it contains essential reference to something that is itself logically impossible: the supernatural. The naturalist may deny that there is any such thing or even claim that the very notion of the supernatural is incoherent.

One leading naturalist, David Armstrong, explains his commitment as follows: 'The term ''Naturalism'' is often used rather vaguely, but I shall understand by it the doctrine that nothing at all exists except the single world of space and time.'[9] But what is the modal force of this claim? Armstrong is not saying that it is logically impossible that anything else exists outside the world of space and time.[10] Naturalism, if true, is true contingently. Hence, even if all that exists is, as a matter of fact, in the natural world, the supernatural world remains a logical possibility. It can then be argued that miracles will also be logically possible, as defined in D, provided that causal interaction (or at least one-way causal action) is possible between the supernatural and natural worlds. But, if the natural world is defined as the world of space and time and the supernatural world is defined as being outside space and time, can anything supernatural interact with the natural? We may answer that this would not demonstrate that causal interaction is logically impossible because the laws, if any, governing interactions between the supernatural and natural worlds could hardly be expected to be *natural* laws so may not restrict in the way suggested. Therefore, taking causal interaction between the supernatural and natural worlds to be logically impossible is far too strong a claim than our understanding warrants, so D stands as a realistic contender.

The metaphysics

What we require metaphysically is a theory of the natural world that has room for a certain problem-raising class of miracles, namely those that violate natural laws. To make such room we will almost certainly have to reject what has become known as Humean supervenience.

If the laws just are summaries or systematizations of the actual events in the natural world, as Humean theories of law claim, then all natural phenomena will tend to be 'law-abiding' as the laws supervene on them. This is why some have read in Hume a denial of the possibility of miracles.[11] If a miracle is understood as a violation of a law of nature but laws are just summaries of exceptionless regularities, then a miracle would entail that the supposed covering law was not a law. If the covering law really was a law, then no violation of it could occur. One of the

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more sophisticated Humean theories, the Ramsey–Lewis view, has similar problems. On Lewis's view, natural laws are what would be the theorems or axioms in the systematization that had the best combination of simplicity and strength and from which the omni-temporal history of the world could be deduced.[12] Perhaps this account could be made to accommodate miracles but with discomfort and compromise. A systematization that incorporated a putative miracle would be preferable, on Lewis's criteria, to one that didn't, if there was not too great a loss in the systematization's simplicity at the gain of its extra strength. But that is a big 'if'. Wherever possible, putative miracles are to be absorbed into the laws and thereby rendered non-miraculous.

What alternative is there? If the laws are allowed some kind of regulative force, as I suggest they have, then violations of them become a logical possibility. Such violations would be analogous to immoral acts violating moral laws or illegal acts violating the laws of the land. Such laws will also allow non-miraculous exceptions, what E. J. Lowe calls 'permissible exceptions', which do not violate the laws. A fully worked out theory of laws has yet to be presented to my satisfaction though Lowe's theory is close enough to meet the above requirements.[13] His laws concern behaviour, in a dispositional sense, of normal sort-members, for example: ravens are black, bread nourishes, horses eat grass. Such a law would connect the universals of ravenhood and blackness, for instance. I see this connection as something less absolute that the necessitation relation of the Dretske, Tooley, Armstrong view of laws.[14] The connection I would prefer is Aristotelian where it is *natural* for ravenhood to be connected with blackness.[15]

I believe we will have difficulties with any Humean theory of laws, not just concerning miracles.[16] We will have fewer problems if we understand laws to have some regulative force, as I will now demonstrate concerning miracles and the nomic modalities.

Nomic modalities

It seems that we must allow much more to be naturally possible, that is, more permitted by the laws of nature, than on the Humean view of laws as exceptionless regularities for, although there is a law connecting ravenhood with blackness, this does not entail that *all* ravens are black. While the latter deems a white, albino raven naturally impossible, a white raven will be naturally possible, as a permissible exception, if the law does not claim universal scope. Those who wish to keep the universality of laws will have either to reject the law connecting blackness with ravenhood, deny that the albino raven is a raven, or fudge the issue and claim that the law is universal but *ceteris paribus*. These are desperate measures. If it can be shown that there is a credible account of nomic modalities, even though laws do not have universal scope, then these desperate measures will not be required.

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However, while I will argue that our modal intuitions can accommodate ordinary exceptions, they have difficulties in accounting for miraculous ones. In allowing miracles to be logically possible we will have to give up certain important modal claims that we think otherwise should hold: the axioms of necessity and possibility. I will show how we can do so for our nomic modalities without doing so for our logical ones.

Figure 1 depicts a pre-critical map of the nomic modalities where *L* is the class of the logically possible, *N* the class of the naturally possible and *a* the actual. The domain of quantification for this map is *events*, though we can consider the modal issues without commitment to them. Other ontologies can fit the map *mutatis mutandis* or it can be populated with propositions, the actual becoming the true, for those who think only propositions capable of such modification.[17]

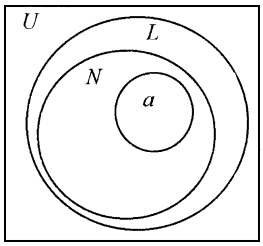


Fig. 1

I take the standard view to be that all that is naturally possible is logically possible and all that is actual – all the world's events – is both logically and naturally possible. This respects the *axiom of possibility* ($p \rightarrow \Diamond p$) whether we are talking of natural or logical possibility.

One difference that our rejection of Humean theories of law may make is that the class of the naturally possible becomes larger. Except in special cases, that it may be possible to construct, there is no guarantee that laws in Hume's and Lewis's sense, supervenient laws, will reach the limits of natural possibility that the realist view of regulative laws allows. Just as we cannot discover all the laws of the land from the behaviour of its citizens – not even its law-abiding ones – so we cannot discover all the laws of nature from the history of natural events.

The key modal issue is whether permissible and miraculous exception cases to laws are within or outside the scope of natural possibility. For the Humean, this issue is settled analytically by the definition of laws as summaries or systematizations of events. I come, therefore, to the first main question: where, in our map of the nomic modalities, do we locate the ordinary, permissible exceptions to laws, such as the occurrence of an albino raven? There are two realistic options.

The first option is one in which the permissible exception event *e* is placed within the class of the actual but outside the class of the naturally possible. A prima

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facie reason for this placing is that *naturally* ravens are black rather than non-black. A second reason might be that we need to allow that something can be logically possible which is not naturally possible for, otherwise, there would be a danger of collapsing natural and logical possibility. With the albino raven, we are able to point to something that is one (logically possible) but not the other (naturally possible).

This option is not to be preferred, however. For one thing, we said that a permissible exception was one where the law was not violated or broken. Even though the law is that ravens are black, a white raven would still be naturally possible. The laws of nature indeed permit such things because, for one reason, there are other laws, such as those of genetics, which explain why this particular raven did not acquire a property that was natural for its kind. Shouldn't we say, therefore, that what occurred is naturally possible and the naturally possible is a larger class than we may have thought? Hence, not just black ravens are to be considered naturally possible but also white ravens and ravens with no plumage at all.

This brings us to the preferred option for location of a permissible exception *e* to a natural law: that depicted in Figure 2. Here, *e* is naturally possible. But this does not entail that all that occurs is naturally possible, as there could be miracles. If a miracle occurs outside the boundary of the naturally possible, there is no reason to extend that boundary to incorporate it, as the Ramsey–Lewis theory is disposed to do, as there is no reason why every event with a supernatural cause is to be deemed naturally possible; indeed, it may be only *supernaturally* possible.

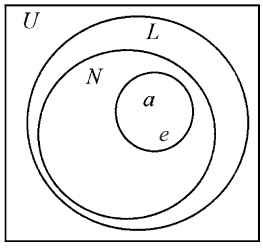


Fig. 2

Now let us return to a reservation that made our first option appealing; namely that there was a danger of collapsing the naturally and logically possible. This concern can be disarmed if we introduce an extra modal distinction, creating the sub-class of the naturally necessary (*Nn*) which respects *the axiom of necessity* ($\Box p \rightarrow p$). This is depicted in figure 3. It means that while all that occurs is naturally possible, some things that occur are also naturally necessary; for example, light travelling at 186,000 miles per second in a vacuum. These laws, if they are indeed universal, have no naturally permissible exceptions. We will let science, if it can, tell us whether there are such laws. The introduction of naturally necessary,

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exceptionless laws, allows us to see that some events would be naturally impossible; namely, exceptions to naturally necessary laws. Hence, a case of gravitational attraction between two objects, which was based on an inverse cube relation between masses and distance, would be naturally impossible but logically possible on this account. We have succeeded, therefore, in creating a space between the logical and natural modalities.

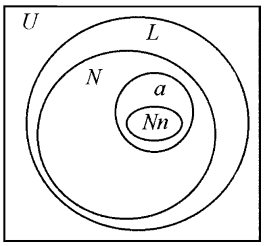


Fig. 3

Note that while all that is actual is logically possible, it is not all logically necessary (the rejection of Leibnizian determinism). Many events occur that are not naturally necessary; we can call these naturally contingent. All that is naturally necessary is naturally possible, however, consistent with the theorem of modal logic (derivable from the axioms of necessity and possibility) that $\Box p \rightarrow \Diamond p$ (proof: $\Box p \rightarrow p$, $p \rightarrow \Diamond p$, therefore $\Box p \rightarrow \Diamond p$).

Next, miracles. Figure 4 illustrates the logical space I allow for miracles, which may be either within natural possibility (m1) or outside natural possibility (m2 and m3). Supernatural interventions in the natural world are not necessarily violations of natural laws.[18] Miracles which are consistent with natural laws are events supernaturally caused which would otherwise have been either (i) naturally caused, (ii) not caused by anything, or (iii) possibly naturally caused. Some accounts have miracles as violations of laws by definition,[19] so cannot count cases such as m1 as miraculous.

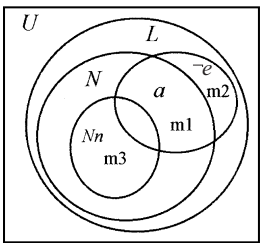


Fig. 4

What changes do we need to make to our nomic modal commitments to accommodate the logical possibility of miracles? We are allowing that something

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naturally impossible can be caused supernaturally ($\neg\Diamond p \,\&\, p$), i.e. m2, and that something could be naturally necessary but not actual ($\Box p \& \neg p$), i.e. m3.[20] This means that we must be prepared to drop the axiom of necessity, in the case of natural necessity, if a certain class of miracle is to be logically possible. For example, where the speed of light changes in one instance, by a supernatural cause, we will have a case where it is naturally necessary that p but not actual that p. This does not affect the validity of the axiom of necessity for logical necessity, which I am assuming is beyond even God's power to alter. It is easy to see that the axiom of possibility is also rejected.

This shows how the nomic and logical modalities are not entirely analogous and we may be helped by distinguishing the two by subscripts: $\Box_N p$ and $\Diamond_N p$ for natural or nomic necessity and possibility, $\Box_L p$ and $\Diamond_L p$ for logical necessity and possibility. Allowing the logical possibility of miracles requires, therefore, acceptance of

(i) $\Diamond_L(\neg\Diamond_N p \,\&\, p)$; that is, rejecting the axiom of possibility, and
(ii) $\Diamond_L(\Box_N p \,\&\, \neg p)$; that is, rejecting the axiom of necessity.

The former is not to be confused with $(p \rightarrow \Diamond_L p)$; that is, the axiom of *logical* possibility remains valid and so would an axiom of logical necessity. The nomic modalities still respect the principle that $\Box_N p \rightarrow \Diamond_N p$, even though the proof using the axioms of possibility and necessity is no longer available. We can see that figure 4 contains the claim that $\forall x(\Box_N x \rightarrow \Diamond_N x)$.

These nomic modalities are in accord with Lowe's claim that the entailments that hold for laws of nature have more in common with the laws of the land that the laws of logic.[21] Bigamy may be legally impossible (i.e., prohibited) but still occur, and payment of income tax may be legally necessary (i.e., required) but fail to occur. What is needed, therefore, is that we understand the nomic modalities to be suited to a form of deontic logic rather than any of the other standard modal logics but there is every reason to believe that such a logic can be successfully developed.[22]

I have shown, therefore, how it is possible to allow exceptions to natural laws, both permissible and miraculous, and retain a sensible and coherent account of the relation between the logical and nomic modalities. This demonstrates that one possible concern over a theory of laws that permits such exceptions is not a threat to the theory after all.

Testing D

In this final section, I show that the definition D, interpreted in the way I have developed, delivers the right results. What we think ought to count as a miracle will indeed count as one under D (or a slightly adapted form of D) so that theological claims about the occurrences of miracles can be accommodated. The

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intuitive and philosophical appeal of D is accompanied by a theological appeal. I take it as adequately demonstrated that the standard miracle cases, such as water turning into wine, are deemed miraculous by D without difficulty, where this is indeed an event in the natural world that is caused supernaturally. I will concentrate as a test of the theory, therefore, on three problem cases.

Case 1

It might be thought, on theological grounds, that the natural world is sustained at all times and at each instant only through the direct intervention of God. Only by divine intervention does the natural world have continued existence. D delivers the result that miracles occur at all instants; namely, supernatural intervention to sustain the world at each instant.

D delivers the right result. If the world was indeed sustained by a succession of direct outside interventions then we could rightly say that the persistence of the world was miraculous. This may lessen the significance of miracles somewhat (though see case 2), as they are now abundant in the highest degree, but some may see reason to thank God for each such moment of existence. On case 1, therefore, D does seem to accord with our intuitions.

Case 2

Were we to allow that a miracle happened at each time (case 1), we would not have available a sense of miracle to apply to those cases where something truly unnatural occurs, such as a man walking on water or water turning into wine. These cases are of such religious significance that they ought to be distinguishable.

D delivers the right result. It rules that both cases are miraculous and, as explained, we can distinguish between two types of miracle in a way that explains the significance of the latter. The latter case is one where there is a violation of a law that could, thus, be evidence of supernatural intervention, powerful and good, and of religious significance for that reason. Miracles could, therefore, be signs from God, as Adams stresses.[23]

Case 3

We come now to a difficulty that will require an adapted version of D. The concern is with creation and the alleged transitivity of causation.

If there was a supernatural act of creation, for instance, if God caused the Big Bang (henceforth 'Creation'), then all natural events will indirectly have had a supernatural cause – namely, the First Cause – therefore all natural events are deemed miraculous by D. There is a sense in which, in these circumstances, we would be right to say that all natural events are ultimately miraculous as all ultimately have a divine, hence supernatural, cause. However, D will have also been weakened in that, in proclaiming all natural events miraculous, there is now no way of distinguishing the miraculous *qua* natural event *simpliciter* and mir-

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aculous *qua* caused directly by a subsequent supernatural cause. I propose, therefore, that we make available a restricted sense of D for, if the Big Bang was an act of creation, then we do indeed have two senses of miracle. As shown, the standard definition of a miracle in D will suffice for miracles *simpliciter* but we also need a notion of a miracle that is subsequent to the Creation. What I propose is to define this second sense of miracle in a way that also says when something is non-miraculous in a world that has been created. Hence:

> (D*) a miracle* $=_{df}$ a natural event E with a supernatural cause E_s and there are no further natural causes, $E_1, E_2, \ldots E_n$, in the causal chain between E_s and E.

This means that in the second sense of miracle, D*, a miracle* occurs only at that threshold in a causal chain between supernatural and natural events. Thus, where we have a succession of adjacent events in time, each the cause of its successor

$$E_{s1}, E_{s2}, E_{s3}, E_1, E_2, E_3, \ldots$$

the occurrence of E_1 is a miracle* while E_2 and E_3 are not, though E_1 through E_3 all count as miraculous in our broader sense of miracle *simpliciter* supplied by D.

However, Clark notes that some miracles occur later than a supernatural intervention, after further natural events, which D* rules out. It was a miracle that the Israelites reached the Promised Land, for example, even though natural processes occurred after the supernatural intervention that caused the parting of the Red Sea.[24] I think we would be wrong to say that their arrival was a miracle literally. Perhaps the Israelites arrived safely *owing to* an earlier miracle, or *with the benefit of* one, but when God was thinking how to realize His intention He decided He needed but one miracle: that parting of the Red Sea. Their arrival itself could have been miraculous, however, had it been by a supernaturally caused instantaneous change of spatial location.

A question related to case 3 is whether the Creation itself is a miracle? D deems it so. Hughes says not,[25] but there is no reason to accept his position. His argument is that a miracle involves a divine intervention in nature but, for the act of Creation, there is, as yet, no up and running nature in which to intervene. He says:

> **I have been suggesting that a miracle is an event directly caused by God. But not every event directly caused by God will be a miracle. The world's coming into existence is caused directly by God's creative will, but Aquinas holds – correctly, I think – that it is not a miracle … because it is not an intervention within nature: nature can not be intervened with, unless it is already up and running.**

Hughes begins, therefore, with an account close to D, but the requirement of an up and running nature is not implied by that account and appears without argument. Why, then, should we accept the restriction? It seems wholly arbitrary and unnecessary to say that the first event in history cannot be miraculous but the second or third can. D, in contrast, requires only a natural event with a super-

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natural cause so can be satisfied even when the natural event in question is the first in natural history. Creation, according to D, is a miracle, therefore.

This concludes the argument for D and its special case D* which I take to be the best account so far in combining a realist account of laws with the logical possibility of miraculous exceptions to them. I take the onus now to be on rival accounts of miracles to produce something that matches it.[26]

Notes

1. Steve Clark 'Hume's definition of miracles revisited', *American Philosophical Quarterly*, **36** (1999), 49–57; Christopher Hughes 'Miracles, laws of nature and causation', *Proceedings of the Aristotelian Society*, supp. vol. **46** (1992), 179–205; E. J. Lowe 'Miracles and laws of nature', *Religious Studies*, **23** (1987), 263–278; Richard Swinburne *The Concept of Miracle* (London: MacMillan, 1970), David Hume 'Of miracles' in *Enquiry Concerning Human Understanding*, L. A. Selby-Bigge (ed.), rev. P. H. Nidditch (Oxford: Oxford University Press, 1975), 10.
2. E. J. Lowe *Kinds of Being* (Oxford: Blackwell, 1989) chs 8, 9 and 10; *idem* 'Miracles and laws of nature'; Stephen Mumford 'Normative and natural laws', *Philosophy*, **75** (2000), 265–282, and 'L'état des lois' in J.-M. Monnoyer (ed.) *La structure du monde* (Paris: Vrin, forthcoming).
3. Note that while Lowe's account of laws enables much of what is to be said about miracles below, this definition of a miracle differs wholly from his. D, instead, follows the suggestion in Peter van Inwagen *An Essay on Free Will* (Oxford: Clarendon Press, 1983), 14.
4. I support a realism about causation in which causation is something more than counterfactual dependence but D has no commitment to any particular theory of causation. The causation in D may be understood as counterfactual dependence, or whatever, without any loss of cogency.
5. Clark 'Hume's definition of miracles revisited', 55–56, distinguishes magic from miracles though both involve supernatural causation. The magician, in the natural world, compels a supernatural agent to act on the natural world, according to Clark. I do not see why it is necessary for the magician to so invoke supernatural assistance and would instead account for magic as a natural cause (the magician) violating natural laws. As incredible as such a thing may seem, there is no danger of it satisfying my D.
6. Hughes 'Miracles, laws of nature and causation' has an account similar to D but without the generality, restricting miracles to God's interventions, e.g. 202.
7. Robert Merrihew Adams 'Miracles, laws of nature and causation', *Proceedings of the Aristotelian Society*, supplementary vol. **46** (1992), 207–224, 217.
8. St Thomas Aquinas *Summa Theologiæ*, Ia. 105. 7.
9. David Armstrong *A Combinatorial Theory of Possibility* (Cambridge: Cambridge University Press, 1989), 3.
10. This is not explicit in the text but has been confirmed in conversation.
11. I accept that it is a controversial question of Hume exegesis whether he did of did not hold miracles to be logically impossible. For a pertinent discussion see Clark 'Hume's definition of miracles', 49f.
12. David Lewis *Counterfactuals* (Oxford: Blackwell, 1973), 72–77; *idem* 'A subjectivist's guide to objective chance', postscripts B and C in his *Philosophical Papers* 2 (Oxford: Oxford University Press, 1986); and *idem* 'Humean supervenience debugged', *Mind*, **103** (1994), 473–490.
13. For my differences from Lowe, see my 'Normative and natural laws'.
14. Fred Dretske 'Laws of nature', *Philosophy of Science*, **44** (1977), 248–268; Michael Tooley 'The nature of laws', *Canadian Journal of Philosophy*, **7** (1977), 667–698; David Armstrong *What is a Law of Nature*? (Cambridge: Cambridge University Press, 1983); and *idem A World of States of Affairs* (Cambridge: Cambridge University Press, 1997), chs 15 and 16.
15. My justification for calling this an Aristotelian theory of laws is based on the account of Aristotle found in Julius Moravcsik 'Essences, powers and generic propositions', in T. Scaltsas, D. Charles, and M. L. Gill (eds) *Unity, Identity and Explanation in Aristotle's Metaphysics* (Oxford: Oxford University Press, 1994), 229–244.
16. A good account of the pertinent difficulties of Humeanism can be found in Dretske's 'Laws of nature'.

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17. I allow the 'logical space' of that which is not logically possible. Dialethism might be true; but, at the same time, it might not. However, I would place here the warning adapted from those on ancient maps: 'here there be contradictions'.
18. In agreement with Hughes, though the example he gives in support is unconvincing. He cites Aquinas's case of God bypassing the normal workings of nature to bring about an event that is naturally possible; Hughes 'Miracles, laws of nature and causation', 196. It is not clear that this would be a miracle that does not violate some natural law at some stage, even though it *results* in something naturally possible. Clark also allows miracles in this class; Clark 'Hume's definition of miracles', 51.
19. Such as Swinburne's *The Concept of Miracle*, where a miracle is a violation of a law of nature by divine intervention, and in Lowe 'Miracles and laws of nature', 276, where a miracle is a violation of the *entire system* of laws.
20. In these cases it is more natural to read the conjunction as 'but'.
21. Lowe 'Miracles and laws of nature', 273.
22. See, for instance, Dagfinn Føllesdall and Risto Hilpinen 'Deontic logic: an introduction' in D. Føllesdall and R. Hilpinen (eds) *Deontic Logic*: *Introductory and Systematic Readings* (Dordrecht: Reidel, 1971).
23. Adams 'Miracles, laws of nature and causation'.
24. Clark 'Hume's definition of miracles', 53. Clark wishes to emphasize the importance for miracles of events God intended rather than the supernatural intervention itself, wrongly, in my view.
25. Hughes 'Miracles, laws of nature and causation', 202.
26. I have benefited chiefly from discussing these ideas with Janet Raistrick and John Ashwin and from presenting earlier versions to audiences at North London University and the Nottingham Philosophy Weekend at Cornford. The referees and Editor of *Religious Studies* also made comments that I found helpful.

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