

LOCKEAN ESSENTIALISM AND THE POSSIBILITY OF MIRACLES

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ABSTRACT: If the laws of nature are metaphysically necessary, then it appears that miracles are metaphysically impossible. Yet Locke accepts both essentialism, which takes the laws to be metaphysically necessary, and the possibility of miracles. I argue that the apparent conflict here can be resolved if the laws are by themselves insufficient for guaranteeing the outcome of a particular event. This suggests that, on Locke's view, the laws of nature entail how an object would behave *absent divine intervention*. While other views of laws also make miracles counterfactually dependent on God's will, I show how this view is consistent with the essentialist commitment to the view that the laws are metaphysically necessary. Further, I argue that Locke's view is a relatively attractive version of essentialism, in part, because it allows for the possibility of miracles.

Locke's view on the laws of nature is best characterized as a form of essentialism, the view that the behaviors of material objects are determined by their essential properties. A notable feature of this kind of view is that it makes the laws of nature metaphysically necessary. This is an attractive feature of essentialism in that the laws of nature are widely thought to be necessary in some sense. However, there is also a widely held intuition that, contrary to essentialism, the behavior of objects is in some sense contingent. For example, it seems possible (though perhaps not likely) that Jesus walked on water. Locke in particular has reason to allow for this possibility since he believes that the Biblical miracles actually occurred. But if the laws of nature are metaphysically necessary, as essentialism maintains, then it appears that it would be

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impossible, even for God, to violate the laws of nature. This implication would be problematic for Locke, and indeed other essentialists have tried to avoid it.¹ There is reason, then, to take another look at Locke's commitment to essentialism in order to see if it really does rule out the possibility of miracles. I will argue that it does not.

The usual view, and indeed the right thing to say, is that whether or not a miracle occurs on a particular occasion is counterfactually dependent on God's will: if God wills that the laws of nature be violated then a miracle will occur, but if God does not will that the laws of nature be violated then a miracle will not occur. Philosophers often distinguish between *metaphysical* necessity and possibility, on the one hand, and *natural* necessity and possibility on the other (e.g., Armstrong 1983, 77; Mumford 2001, 198); once this distinction is made, we can grant that a violation of the laws of nature is *metaphysically* possible while maintaining that it is not *naturally* possible. However, this way of accommodating the possibility of miracles is not open to essentialism. For Locke (as I will argue below), and other proponents of essentialism (Ellis 2001; Handfield 2001), take the laws of nature to be metaphysically necessary. In that case, it is not at all obvious that the laws of nature could be violated. This paper, then, contributes to the literature on essentialism by explaining how the metaphysical possibility of miracles is consistent with the claim that the laws of nature are metaphysically necessary.

The solution to the difficulty, I suggest, is that in Locke's view the laws of nature are not by themselves sufficient for guaranteeing a particular outcome in a given case. A historically important example of this kind of view is concurrentism, which was the standard late-medieval position on causation (Freddoso 1991). According to concurrentism, the essential properties of objects and the *presence* of God's "concurring" will (that the essential properties bring about an event) are jointly sufficient conditions for a natural event occurring. A miracle is then said to occur when the essential properties are present but God's concurring will is *absent*; in this case, the sufficient conditions are not satisfied and thus concurrentism can allow for the possibility of a miracle. I argue below that Locke's position is basically the inverse of concurrentism: the essential properties of objects and the *absence* of God's overruling will (that the essential properties *not* bring about an event) are jointly

¹ For example, medieval Aristotelians attempted to explain how essentialism is compatible with miracles (Freddoso 1991). As I explain below, Locke probably does not accept the sort of explanation favored by medieval essentialists. More recently, Toby Handfield aims to provide an account of essentialism that allows for the possibility of what he calls a "law-abiding miracle," since "a miracle in the normal sense of a law-breaker is ruled out as impossible" (Handfield 2001, 488). By contrast, I take it that Locke believes in miracles that violate the laws of nature.

sufficient conditions for a natural event occurring, whereas a miracle is then said to occur when the essential properties are present but God's overruling will is *present*. In this way, I argue, Locke takes the occurrence of a miracle to be counterfactually dependent on God's will, even though (like concurrentism) he also takes the laws of nature to be metaphysically necessary. Furthermore, I will argue that Locke's version of essentialism is a more attractive philosophical position than concurrentism, since Locke's position better captures the intuition that it is the objects themselves that cause natural events.

One of my aims in this paper is to argue that even though he appears to accept a kind of essentialism about laws, Locke nonetheless maintains that God *can* and *sometimes does* perform miracles that violate the laws of nature. This claim is significant for a few reasons. First, Locke takes miracles to serve as evidence for belief in revealed religion (cf. E 4.19.15; *Discourse of Miracles*, 262, 264; *Reasonableness of Christianity*, 32, 49, 84–85, 34), and so the possible or actual occurrence of miracles is relevant to his religious epistemology. Second, and more importantly for the purpose of this paper, Locke's views concerning the possibility of miracles give us some insight into his views on causation and the laws of nature. Locke's position is that the laws of nature are metaphysically necessary and yet God can, by willing that there be an exception in a given case, violate these laws of nature. A significant implication of this position, which I take Locke implicitly to agree with but which he does not state explicitly, is that the laws of nature are not sufficient to guarantee a particular outcome in a given case. Further, as I suggested above, the argument of this paper has implications relevant to the contemporary literature on essentialism. Another aim of the paper, then, is to argue that Locke's position, as I interpret it, is a theoretically attractive account of laws.

The plan for the paper is as follows. In section 1, I give textual evidence that the view Locke accepts is a kind of essentialism and explain why such a view takes the laws of nature to be metaphysically necessary. Here I largely follow the well-known interpretation of Michael Ayers and Lisa Downing. In section 2, I argue, against Ayers, that Locke believes God can and does violate the laws of nature. In section 3, I show how essentialism is consistent with the possibility of miracles. I also show how Locke's version essentialism differs from other essentialist views and argue that Locke's position is the most plausible of these views.

1. LOCKEAN ESSENTIALISM

Essentialism is the view that the real essences of material objects determine their properties, powers, and behavior (Downing 2007, 368; 2013, 160). Now, Locke rarely uses the phrase "law of nature" (Ott 2009, 186; Downing

2013, 162), instead typically referring to the “ordinary course of Nature” (E 4.16.9; cf. E 4.16.13). However, on Locke’s view nonaccidental regularities observed in nature are explained by the essential properties of material objects, and it is now an established use of “law of nature” to refer to these regularities (cf. Mumford 2009, 478). I will adopt this usage for the sake of convenience. In this section, I provide textual evidence that Locke’s view is best characterized as a kind of essentialism according to which the laws of nature are metaphysically necessary.

Locke holds that each material object has a “real essence” that makes it what it is. The real essence of an object is, ontologically, the set of fundamental properties on which the other properties of that kind of thing depend. (By contrast, a “nominal essence” is, epistemically, the set of those observable properties we use to distinguish one kind of substance from another.) For example, the real essence of gold is that “**on which depend all those Properties** of Colour, Weight, Fusibility, Fixedness, *etc.* which are to be found in it” (E 3.3.18, italics in original, emphasis added). Elsewhere he says, “By this *real Essence*, I mean, that real constitution of any Thing, which is the **foundation** of all those Properties, that . . . are constantly found to co-exist” in a certain kind of object (E 3.6.6, italics in original, emphasis added). Although Locke repeatedly insists that objects do have a real essence that determines their observable properties and behavior, he also insists that we do not know what the real essences of those objects are.² As Lisa Downing explains (1998, 384–85; 2013, 166), though, a real essence is *whatever* fulfills an abstract metaphysical role of being the ontologically fundamental properties that ground the other properties of that kind of object. Locke can then be committed to there being real essences that govern the behavior of material objects while, at the same time, remaining skeptical about our ability to know what those real essences are (cf. Downing 2007).

By way of explaining the role of real essences in his view of nature, Locke draws an analogy between the fundamental properties (or real essence) of a triangle and the fundamental properties (or real essence) of material objects. Locke takes the real essence of a triangle to be a shape having three straight sides (E 3.3.18), and from this real essence follows all the properties of a triangle *qua* triangle. (A triangle will also have accidental properties, such as color and location, that are not determined by its real essence.) For example, it follows from the real essence of a triangle that any triangle will have

² Downing persuasively argues that on Locke’s view the real essences of material objects are probably the primary qualities of the tiny particles which constitute them (Downing 1998; cf. E 3.3.17 and 2.31.6). While much of what Locke says presupposes this view of real essences, accepting this view is not necessary for the problem and solution discussed in this paper.

interior angles of 180° (cf. 2.32.24 and 4.1.2), so if x has the real essence of a triangle then, necessarily, x has interior angles of 180° . Similarly, on Locke's view, all the properties of a material object *qua* that kind of object follow from its real essence. *If* we knew the real essences of material objects, then we could deduce the properties and causal relations of objects from their real essences:

Had we such *Ideas* of Substances as to know what real Constitutions produce those sensible Qualities we find in them, and how those Qualities flowed from thence, we could, by the specific *Ideas* of their real Essences in our own Minds, more certainly find out their Properties, and discover what Qualities they had, or had not . . . and to know the Properties of *Gold*, it would be no more necessary, that *Gold* should exist, and that we should make Experiments upon it, than it is necessary for the knowing the Properties of a Triangle, that a Triangle should exist. . . . (E 4.6.11)

I doubt not but if we could discover the Figure, Size, Texture, and Motion of the minute Constituent parts of any two Bodies, we should know without Trial several of their operations one upon another, as we do now the Properties of a Square, or a Triangle. (E 4.3.25)

Suppose, for example, it follows from the real essence of gold that gold dissolves in mercury or "*aqua regia*" (cf. E 3.6.6). In this case, it is a law of nature, following from the real essence of gold, that if x is gold then x will dissolve when placed in mercury. Further, we could (at least in principle) deduce this law of nature from the real essence of gold and the real essence of mercury. Thus, according to essentialism, the laws of nature are determined by the real essence of material objects in the same sort of way that the properties of a triangle are determined by the real essence of a triangle (Ayers 1991, 119; Downing 2013, 160–63).

Is it possible for God to make it so that a piece of gold does *not* dissolve when it is placed in mercury, even though it is a law of nature that gold dissolve in these conditions? It may seem obvious that God can violate the laws of nature, but this is too quick. Even though God is omnipotent, he cannot make a triangle that has interior angles of 360° :

a right-lined Triangle **necessarily** carries with it an equality of its Angles to two right ones. Nor can we conceive this Relation . . . to be possibly mutable, or **to depend on any arbitrary Power**, which of choice made it thus, or could make it otherwise. (E 4.3.29, emphasis added)

It is not up to God whether the interior angles of a triangle equal 180° or not; this is a necessary relation that follows from the real essence of a triangle. So, if the laws of nature likewise follow from the real essences of material objects, then the laws of nature are similarly necessary and independent of

God's will. Thus, essentialism raises a genuine question about whether God can violate the laws of nature.

Ayers argues that on Locke's essentialist view God cannot violate the laws of nature. "To suppose that matter exists which does not obey the laws *flowing from its very being* would be like supposing that a triangle exists the angles of which are not equal to two right angles" (Ayers 1991, 119, emphasis added). Ayers here makes two assumptions about essentialism. One assumption is that the real essences of objects entail the causal powers of those objects, and the second assumption (which I will later suggest Locke rejects) is that these causal powers entail that objects behave in certain ways under specified conditions. These two claims, along with the nature of gold, entail that, necessarily, if x is gold and is placed in mercury then x will dissolve. No arbitrary power, not even the omnipotence of God, can make it otherwise. Consequently, Ayers concludes, "whatever God does, *he cannot really bring about what is naturally impossible*. . . . Bringing about the physically impossible would be . . . a contradiction" (Ayers 1991, 220–21, emphasis added).

If Locke is committed to the essentialist view that Ayers ascribes to him, then on his view the laws of nature are metaphysically necessary and so it looks like miracles are metaphysically impossible. There is some reason, though, to resist an essentialist interpretation of Locke. As Margret Wilson (1979) points out, if Locke were fully committed to essentialism then he would explain mind-body interactions in terms of the real essences of objects, but he instead appeals to "the arbitrary Determination of that All-wise Agent" (E 4.3.28). Similarly, as Edwin McCann (1994) points out, essentialism would appeal to the real essence of matter to explain the laws of motion and the law of gravity, whereas Locke appeals to the arbitrary will of God to explain both the laws of motion (E 4.3.29) and gravity (*Works* vol. 9, 189; cf. *Works* vol. 4, 467–68). These passages suggest that it is the divine will (rather than the real essences of objects) that determine the laws of nature. Call such a view voluntarism, since on this view the laws of nature are determined by God's will.

If Locke were committed to voluntarism, rather than essentialism,³ he would have little difficulty explaining the possibility of miracles. On such a view, the laws of nature are not metaphysically necessary; they are instead dependent on God's will. Further, if God's will explains why objects behave the way they do, then God's will can explain why there is an exception in a

³ Another possibility is that Locke has a heterogeneous conception of laws, an essentialist conception of body-body causation and a voluntarist conception of mind-body causation. However, my interest really is in whether God can intervene in cases of body-body causation (though, if he can, presumably he could also intervene in cases of mind-body interaction), so I will not pursue this possibility further.

given case: God wanted there to be an exception, and so there was. In the next section, I argue that Locke holds that God can and sometimes does violate the laws of nature. This might be taken as additional evidence for a voluntarist interpretation of Locke since such a view allows for violations of the laws of nature whereas Ayers's essentialist interpretation of Locke (wrongly) does not allow for the possibility of such a miracle.

In my view, voluntarism fails to capture Locke's assertion that we could have a *a priori* knowledge of nature, if only we knew what the real essences of material objects were. McCann suggests that, while not *a priori*, a demonstrative proof that a given event will occur is possible only if we somehow learn what the laws of nature are that God has arbitrarily decreed (McCann 1994, 72). But this interpretation fails to account for why Locke repeatedly insists that the behavior of an object depends on its real essence and that (without any mention of God's will) we could use the real essences of objects to determine how those objects would behave (E 4.6.11 and 4.3.25, quoted above; cf. E 3.4.3; 3.6.19; 4.22.12). That is, Locke repeatedly takes the real essences of objects to be the *locus* of explanation of the behavior of material objects.

Yet, there is something right about the voluntarist interpretation of Locke: the outcome of particular events is dependent on God's will, since God could violate the laws of nature if he chose to do so. This may appear to undermine Locke's claims to the possibility of the *a priori* knowledge of nature. For example, Locke implies that if we only knew the real essences of things, we could deduce that "hemlock kill[s], and opium make[s] a man sleep" (E 4.3.25). This might suggest that we could deduce that if Socrates drinks hemlock on a given occasion then he will die. But if it is even possible for God to intervene and miraculously prevent Socrates from dying after he drank hemlock, then we simply cannot be certain, in advance, that Socrates will die from drinking hemlock. That is, on my interpretation, we cannot deduce the outcome of *particular events* just by contemplating the real essences of things, since there is always the possibility of divine intervention. What we could know *a priori*, on my interpretation, is that it is the *nature* of hemlock to kill humans, that this is what *would* happen in the absence of divine intervention. It is this latter fact that voluntarism fails to capture, though I am in agreement that the outcome of particular events depends on God's will.

I do not pretend to have settled the issue as to whether we ought to interpret Locke as an essentialist or voluntarist. Yet there is, at the very least, sufficient textual evidence to make the essentialist interpretation of Locke plausible.⁴ So, for the sake of argument, let us suppose that this is his view.

⁴ For further defense of the essentialist interpretation of Locke, see Ayers 1981; Downing 2007, 2013; and Ott 2009.

My main concern in this paper is whether Locke's commitment to essentialism (assuming he is so committed) is consistent with the possibility of miracles that violate the laws of nature. We have seen some reason to think that essentialism precludes the possibility of miracles: if the laws of nature are metaphysically necessary and the laws of nature are sufficient to guarantee the outcome of an event on any given particular occasion, then miracles would be metaphysically impossible. I take this to present a serious challenge to Locke's position since, as I understand him, he is both committed to essentialism and the actual occurrence of miracles that violate the laws of nature. I turn now, then, to his discussion of miracles.

2. A COMMITMENT TO MIRACLES

My contention is that Locke thinks that God can perform miracles by violating the laws of nature. It is uncontroversial that Locke believed Biblical miracles occurred. In the *Essay*, for example, he claims that "Moses saw the Bush burn without being consumed, and heard a Voice out of it," and this event serves as one of the "outward Signs" that Moses had received revelation from God (E 4.19.15). In the *Discourse of Miracles* and *The Reasonableness of Christianity*, he repeatedly insists that the miracles Jesus performed are evidence that he is the Messiah and we should therefore believe his message (*Discourse of Miracles*, 259, 261; cf. *Reasonableness of Christianity*, 32, 49, 84–85, 341). So, Locke undoubtedly believes miracles can and have occurred. What is less clear, though, is whether Locke believes these miracles violated the laws of nature.

Ayers argues that Locke's commitment to essentialism makes miracles that violate the laws of nature metaphysically impossible. Moreover, according to Ayers, Locke recognizes this implication and for that very reason believes that these extraordinary events merely *seem* to violate the laws of nature, but they do not actually do so. Call this sort of event a miracle in the subjective sense; and call an event in which God actually violates the laws of nature a miracle in the objective sense. Ayers's claim is that miracles in the subjective sense occur, but no actual violation of the laws of nature ever occurs (i.e., there are no miracles in the objective sense).

At this point a rather obvious objection to Ayers's interpretation emerges: in Locke's view, we ought to believe the miracles recorded in the Bible occurred, and these miracles would (if actual) violate the laws of nature, so he must think that God can and does sometimes violate the laws of nature. Ayers responds to this point by arguing that Locke purposefully defines "miracle" in a way that does not require God to violate the laws of nature. Locke says:

A miracle then I take to be a sensible operation, which, being above the comprehension of the spectator, and *in his opinion contrary to the established course of nature*, is taken by him to be divine. (*Discourse of Miracles*, 256, emphasis added)

Ayers points out that Locke “prefers to understand a miracle as an event contrary to the normal course of our experience” (Ayers 1981, 221). But *appearing* to violate the laws of nature does not require that the laws of nature are *actually* violated. Ayers continues, “The hardly disguised consequence of this account . . . is . . . that no conflict arises between belief in miracles and a belief that God cannot do the naturally impossible” (Ayers 1981, 221). So, according to Ayers’s interpretation, all miracles are miracles in the subjective sense but not in the objective sense.

There are two problems for Ayers’s interpretation. The first problem is that Locke wants miracles to fulfill a certain epistemic role, namely as evidence for revelation (E 4.19.15; *Discourse of Miracles*, 262, 264), but a miracle in the subjective (but not objective) sense cannot provide *good* evidence for revelation. Suppose, for example, that Jesus rose from the dead. On Ayers’s interpretation, this event must not actually violate the laws of nature. So, to a well-informed person, who both knows what the laws of nature are and the relevant facts of this particular case, it will *not* appear that a violation of the laws of nature has occurred; the well-informed person will instead see how it is that this unusual event was brought about in a perfectly natural way. In other words, for the well-informed person, the event cannot count as a miracle even in the subjective sense. Further, this is true of *all events*. Consequently, a well-informed person could *never* have *any* evidence for divine revelation. This is problematic. Anyone who accepts that a miracle occurred (even in the subjective sense) has simply made a mistake: the person must believe that the laws of nature were violated, but (according to Ayers) this belief is necessarily false. Presumably Locke does not think that the rational foundation of religious belief should be based on making this sort of epistemic error.

A second problem is that there are a number of texts in which Locke asserts that God can and does violate the laws of nature. For example, in the *Essay* Locke argues that testimony of an event that conflicts with the ordinary course of nature normally merits only the lowest degree of evidence (E 4.16.9); but he wants to make an exception for reports of miracles:

there is one Case, wherein the strangeness of the Fact lessens not the Assent to a fair Testimony given of it. For where such supernatural Events are suitable to ends aim’d at by him, **who has the Power to change the course of Nature**, there, under such Circumstances, they may be the fitter to procure Belief, by how much the more they are beyond, or contrary to ordinary Observation. This is the proper

Case of *Miracles*, which well attested, do not only find Credit themselves; but give it also to other Truths, which need such Confirmation. (E 4.16.13, italics in original, emphasis added)

Locke cites two contributing reasons for why we ought to believe a miracle report. First, God uses miracles as evidence that *p* has been divinely revealed. Second, God “has the Power to change the course of Nature.” The course of nature is normally determined by the real essences of material objects. The point here, then, is that God has the power to make objects behave in a way that is *not* dictated by their real essences. This suggests that we should believe the testimony of a miracle (when appropriate) because God has the power to *actually* violate the laws of nature.

Similarly, in the *Reasonableness of Christianity*, Locke affirms that God can violate the laws of nature. He assumes that the powers of material objects determine the laws of nature, saying that God “does constantly . . . bring about his purposes by means operating according to their natures.” Thus, God brings about his will through the natural properties of bodies; that is, “*unless . . . the confirmation of some truth requires it otherwise.*” When we need some evidence to confirm that *p* has been divinely revealed, God does *not* follow the laws of nature. For, he explains, “it [is] easy [for] omnipotent power to do all things by an *immediate over-ruling will*; and so to make any instruments work, *even contrary to their nature*” (*Reasonableness of Christianity*, 84–85, emphasis added). Here Locke seems to assert that it is possible for God to violate the laws of nature and that he will do so in order to confirm the truth of a revelation. Thus, even if it is contrary to the nature of a bush to burn and yet remain unconsumed, God could make this happen. Likewise, even if it is the nature of the human body to die and then remain dead, God could make Jesus come alive again after being dead for three days. So, Locke seems to believe that miracles in the objective sense are possible.

It is perhaps worth returning to Locke’s definition of the term “miracle.” Ayers suggests that Locke gives a subjective definition of miracle because he does not think that miracles in the objective sense are possible. However, we can now see that Locke believes that God can and does violate the laws of nature. Yet this raises the question about why Locke would define miracles in the subjective sense rather than in the objective sense. I suggest he favors the subjective definition of a miracle for two reasons. First, on his view, we cannot know for sure what the laws of nature are, and so the best we can do is identify miracles as those events which seem to us to violate the laws of nature (*Discourse of Miracles*, 259; cf. Mooney and Imbrosciano 2005, 159). Second, he sees miracles as serving an evidential role in justifying belief in revealed religion, and a miraculous event can serve as evidence only if

someone *notices* that the event is a violation of the laws of nature (cf. *Discourse of Miracles*, 256). Thus, only an event which is a miracle in the subjective sense can serve as evidence for revelation, though such an event might also be a miracle in the objective sense. I take it that these reasons provide sufficient motivation for Locke to prefer the subjective definition of miracle even though he believes God can and does actually violate the laws of nature. So, contrary to Ayers's suggestion, Locke's subjective definition of a miracle does not reveal an implicit rejection of God's ability to violate the laws of nature.

At this point, we have seen textual evidence that Locke is committed to essentialism and that he also believes miracles in the objective sense are possible. But can Locke *consistently* claim that the laws of nature are metaphysically necessary and yet nonetheless assert that God can and does violate the laws of nature?

3. THE METAPHYSICS OF MIRACLES

In section 1, following Ayers and Downing, I argued that Locke's view is best interpreted as being committed to a kind of essentialism, and, in section 2, I argued that Locke asserts that God can and does perform miracles that violate the laws of nature. In this section, I explain how these two commitments are compatible.

The fundamental difficulty is that, according to essentialism, the laws of nature are metaphysically necessary and so it appears that miracles that violate those laws are not possible. Ayers makes two assumptions about essentialism that give rise to this difficulty. One is that there is a necessary connection between the real essences of objects and their causal powers. The second is that these causal powers, in a given set of circumstances, are sufficient to guarantee the outcome of a given event. This kind of position, which Brian Ellis calls scientific essentialism (Ellis 2001), claims the following:

Scientific essentialism: Necessarily, $X \rightarrow Z$

On this view, X entails Z , and so not even God can make it so that X is the case but Z is not; in other words, it is metaphysically impossible for God to violate the laws of nature. Suppose, for example, X is the claim that (i) fire essentially has the power to burn wood and (ii) there is wood in the fire, and Z is the claim that the wood burns. In that case, it is metaphysically impossible for the wood to be in the fire and yet God prevent the wood from burning.

One proposal, consistent with accepting scientific essentialism, is that God can miraculously change the outcome of a particular event by temporarily

changing the real essences of things. Suppose, for example, that x is fire, fire necessarily has the power to burn wood, and there is wood in the fire. God might prevent x from burning the wood by changing the nature of x . Since fire necessarily burns wood, if God changes x so that it does not burn, then x is no longer fire; let us suppose, then, that God changes the nature of x from fire into fire*. It is not a law of nature (suppose) that fire* burn. Thus, God can miraculously prevent the wood from burning by temporarily changing fire into fire*. More generally, X entails Z , but X^* does *not* entail Z , so God can prevent X from bringing about Z by temporarily changing X into X^* . This, I take it, adequately solves the logical problem for miracles introduced by scientific essentialism, and there is some reason to think this is Locke's position.

Locke gives an explanation of the flood of Noah that looks like the kind of explanation given above. He suggests that God could temporarily change the center of gravity, which would thereby bring about the flood:

And therefore since the deluge cannot be well explained, without admitting something out of the ordinary course of nature, I propose it to be considered, whether God's altering the centre of gravity in the earth for a time (a thing as intelligible as gravity itself, which perhaps a little variation of causes, unknown to us, would produce), will not more easily account for Noah's flood, than any hypothesis yet made use of, to solve it. (*Some Thoughts Concerning Education* §192, in *Works* vol. 9, 184)

The passage implies that gravity has some underlying cause, which according to essentialism is the real essence of matter. As Walter Ott points out, in the parenthetical remark Locke suggests that God could change the real essence of matter which would thereby bring about a change in gravity (Ott 2009, 184; cf. Downing 2007, 376). If this kind of explanation were generalized, then Locke's view would be that God performs miracles by changing the real essences of things.

While Locke may think that God can change the course of nature by temporarily changing the real essences of things (perhaps the Eucharist is this way), it seems problematic (both for Locke and in general) to say that this is the *only* way God can change the course of nature. For, on the above proposal, it remains the case that, while God can *change* the laws of nature, God cannot *violate* the laws of nature. Consider Moses and the burning bush. If the bush being in the fire entails that the bush will burn, then God *cannot* prevent the bush from burning if it is in fire (only if the bush is in fire*).⁵ This

⁵ A reviewer has pointed out to me that God's changing fire into fire* may itself be a violation of the laws of nature, and yet Ott does not explain how miracles that violate the laws of nature are possible.

seems to limit God's power in an unacceptable way, and therefore this kind of general explanation for miracles is objectionable (cf. Freddoso 1991, 575). Intuitively, the fire and the bush can remain just as they are and yet God could make it so that the bush is not consumed in the flames. (This is again the intuition that a theory of the laws of nature ought to allow for some contingency.) Further, Locke seems to agree since he claims that it is "easy" for God to perform a miracle by making objects behave "contrary to their nature" (*Reasonableness of Christianity*, 84–85). So, Locke holds that God can keep the nature of the fire (and the bush) fixed, and yet still somehow make it so that the bush is not consumed in the flames. Thus, in order for Locke's position to be consistent, there must be some other explanation for how God is able to perform miracles that violate the laws of nature or make objects act contrary to their nature.

So, the problem remains: real essences entail the laws of nature, yet God has the power to violate the laws of nature if he so chooses. The solution to the problem must be that the laws of nature (or the causal powers of objects) are *not sufficient* by themselves to guarantee the outcome of particular events. That is, Locke must deny that X is by itself sufficient for Z. This can be done easily enough by positing some further condition, in addition to the laws of nature (or causal powers of objects), that must be met in order to guarantee the outcome of particular events. For instance, we might think whether X brings about Z depends in some way on God's will. In that case, even if condition X is satisfied, if X's bringing about Z is not in accordance with God's will, then Z is not guaranteed to occur. There are two plausible ways to develop such a view.

Concurrentism is an essentialist position according to which any natural event is caused by both the causal power of material objects and God's concurring will (Freddoso 1991, 554). The causal power of a fire, for example, is a contributing cause to the burning of the wood. On this view, however, by itself this causal power is not sufficient for bringing about the burning of the wood; for the causal power to bring about the effect, it is also necessary that God's will causally contributes to the burning. The presence of God's will, we might say, contributes some of the *causal oomph* necessary for the fire to actually burn anything. Concurrentism can then allow for the possibility of miracles in the following way. When Moses saw the burning bush, the fire necessarily had the causal power to burn, but God withdrew his concurring will, and thus the jointly sufficient conditions for the burning of the bush were not satisfied; thus, it is possible for the fire to necessarily have the causal power to burn wood and yet for the bush to be in the fire without burning (cf. Freddoso 1991, 573–74).

Concurrentism is a coherent position with a distinguished history prior to Locke, it is consistent with essentialism, and it is therefore open to Locke to accept it. This is sufficient to refute Ayers's assertion that essentialism rules out the possibility of miracles that violate the laws of nature. However, there is (so far as I can find) a lack of positive textual evidence that Locke actually holds this position. Moreover, concurrentism explains a miraculous event by an *absence* of a divine volition, whereas Locke seems to appeal to the *presence* of a divine volition to explain miracles. He says, for example, that as an omnipotent being God can perform miracles "by an immediate over-ruling will" that causes objects to act "contrary to their natures" (*Reasonableness of Christianity*, 84–85). Elsewhere he says that miracles carry "the marks of a superior and over-ruling power," and God's "over-ruling power accompan[ies]" miracles (*Discourse of Miracles*, 262, 261). These passages suggest (though not decisively) that the cause of miracles is God's *actively willing* objects to behave contrary to their nature. If this is correct, then Locke does not accept concurrentism. So, it appears that, if he is going to be consistent, he will need some other way to reconcile essentialism with the possibility of miracles.

The insight of concurrentism is to deny that the causal powers of material objects are by themselves sufficient to produce the associated effect, and it does this by making both the powers of objects and the will of God causal contributors to the production of the effect. While scientific essentialism holds that X by itself entails Z, concurrentism adds Y, the presence of God's concurring will, as a further condition:

Concurrentism: Necessarily, $(X \ \& \ Y) \rightarrow Z$

Another way to deny that causal powers of material objects are by themselves sufficient to produce the associated effect is to take the causal power and the *absence* of God's overruling will (that the effect *not* occur) as jointly sufficient conditions for the production of the effect.⁶ On this view, fire burns wood on a particular occasion because the fire has the causal power to burn wood and God did not intervene and will that the fire *not* burn the wood. If we take $\sim Y^*$ to represent the *absence* of God's over-ruling will, Locke's view can be stated as follows:

⁶ This is actually an oversimplification. Locke is willing to countenance violations of the laws of nature by other supernatural agents, such as angels and demons (*Discourse of Miracles*, 260). So, more precisely, the jointly sufficient conditions would be the causal powers of objects and the absence of the overruling will of *any* supernatural agent. Since my concern here is with God's ability to violate the laws of nature, I will ignore other supernatural agents.

Lockean essentialism: Necessarily, $(X \ \& \ \sim Y^*) \rightarrow Z$

Locke can consistently claim that a miracle occurs when the jointly sufficient conditions are not satisfied; that is, a miracle occurs when God *does* intervene (by willing that the causal power *not* produce the effect in a given case). For example, even though fire has the power to burn wood, the burning bush Moses saw was not consumed because of the presence of God's overriding will that it *not* burn; that is, the necessary condition $\sim Y^*$ was not satisfied, and so Z did not occur.

There is some controversy in contemporary metaphysics about whether absences can be causes (e.g., Schaffer 2004; Anjum and Mumford 2010). One potential problem is that if we do say that absences can be causes, then not only will the absence of a divine volition count as a cause but a myriad of other absences will count as causes also. For example, if I do not water my potted plant, it will die. The absence of water will (plausibly) be counted as a cause of the plant's death. But this opens the door for other absences (more and less plausibly) to be causes of the plant's death: my failure to water the plant is a cause of its death, the janitor's failure to water the plant is a cause of its death, the president's failure to water the plant is a cause of its death, and so forth. The point here is that the plant's death is counterfactually dependent on all the absences just cited, but only the absence of water could plausibly count as a cause of its death. Arguably, this kind of case shows that there is a difference between counterfactual dependence and causation.

A second potential problem is that Lockean essentialism does not allow for *any* absences to be causes. Locke explains causation in terms of causal powers of objects (E 2.21.1–4). But, as the causal powers theorists Anjum and Mumford say, "Absences are nothing, and how can *nothing* have causal powers? Powers, like properties, must be instantiated by something" (2010, 155). Contrary to what many find intuitive, then, Locke is going to have to deny that the absence of water is the cause of the death of the plant. By extension, Locke cannot say that the absence of God's will is a contributing cause to an event. This might appear to be a problem for my interpretation, but this problem can be resolved. Above I pointed out that there is (arguably) a distinction between causation and counterfactual dependence. Anjum and Mumford take the absences of water to be just one more instance of this distinction: "The absent water does nothing," and so does not cause the plant to die; yet the death of the plant is counterfactually dependent on my watering it (Anjum and Mumford 2010, 155). In a similar way, the absence of God's over-ruling will is nothing and so cannot be a cause; yet the production of a given effect might nonetheless be counterfactually dependent on the absence of God's overruling will.

One of the nice features of this position is that, in the normal case, the causal power of a material object is what brings about the effect. I take the most common and intuitively plausible view to be that God could, if he wanted, *stop* the fire from burning wood, but, when there is no divine interference, it is *the fire alone* that (in normal circumstances) causes the wood to burn. One of the theoretically attractive features of essentialism, according to its proponents, is that causal explanations (for natural events) appeal to the properties of the objects involved (Ellis 2001, 2; Mumford 2009, 471; Handfield 2001, 485). The causal explanation for why fire burns the wood, for example, appeals only to properties of the fire and the wood such that, under certain conditions, the fire burns the wood. Moreover, this is the kind of causal explanation that (arguably) science offers for natural events. So, the normal intuition, which seems to be supported by the kinds of causal explanations given in science, is that the fire alone causes the wood to burn. In short, no divine activity is needed to explain why the fire burns the wood. (If God did not exist, for example, I imagine that fire would still burn wood.) Concurrentism, though, goes against this intuition, claiming that the fire would not burn without God's direct causal contribution to the burning of the wood. (This might be especially problematic when, instead of burning wood, the fire is burning a saint.) Lockean essentialism, then, fits better with the intuition that the fire alone is the cause of the burning of the wood.

The downside of Locke's position, if it is one, is that a cause is not sufficient to produce its effect, which may seem counterintuitive.⁷ For the fire is the sole cause of the wood burning, but God might nonetheless stop the fire from burning the wood. However, this is just the sort of claim that is needed to make essentialism consistent with the violation of the laws of nature. This potentially counterintuitive consequence, therefore, turns out to be an advantage of the view. As I understand it, then, Locke's view is that the natural cause of an effect is always the power of a material object, but the actual production of the effect is counterfactually dependent on the absence of divine intervention. To rephrase the point in terms of laws of nature, the laws determine how objects behave *absent divine intervention*. This strikes me as the right kind of thing to say about the laws of nature.

Locke's position also better captures the intuitive notion of miracles. It seems intuitive that God normally lets the world do as it will; occasionally, though, God steps in and intervenes to change the course of nature. The most obvious explanation for how this would happen is that, on special occasions, God wills that the laws of nature be violated and, since God is all

⁷ Anjum and Mumford (2010) argue that a causal powers theory of causation *should* say that a causal power in a given set of circumstances is not sufficient to produce its effect.

powerful, the laws of nature are thereby violated. Thus, miracles occur when God *actively interferes* with the natural course of events. By contrast, according to concurrentism miracles occur when God *withdraws* his causal activity. A withdrawal of God's will might, I suppose, count as some kind of activity. However, it is by far more natural to think of divine intervention in terms of God's *stepping into* the causal chain of events, rather than him *stepping out of* the causal chain of events. For this reason, Lockean essentialism better captures our intuitions about miracles being instances of divine intervention.

Lockean essentialism thus appears to be a relatively plausible version of essentialism. Scientific essentialism is subject to the objection that an omnipotent God *should* be able to violate the laws of nature. As noted above, many take the lack of contingency of any kind to be an objectionable feature of scientific essentialism. It is to Locke's advantage, then, that he allows for the metaphysical possibility of divine intervention. Lockean essentialism also seems to be more plausible than concurrentism because, as noted above, Locke's view better captures how we think of natural causation and miracles.

I take it that Locke's position is a consistent and reasonably attractive way to accept essentialism while also allowing for the possibility of miracles that violate the laws of nature. The interpretation I have offered is supported by the texts which seem to commit Locke to essentialism, together with the texts in which he asserts that God can perform miracles by willing that an object act contrary to its nature. I have shown how these two commitments can be consistent and so (other things being equal) stand in favor of attributing this position to Locke. There are good reasons, then, to think that even though Locke accepts essentialism he also (consistently) holds that God can and does sometimes violate the laws of nature. Moreover, the combination of these views results in a plausible view concerning the nature of causation and God's ability to intervene in nature.⁸

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⁸ I would like to thank Cruz Davis, Lisa Downing, Kenneth Ferguson, Lex Newman, Emily Sutherland, Samuel Rickless, Julie Walsh, Jay Burkett, and anonymous reviewers for providing valuable comments on earlier drafts of this paper, as well as my audience at the Mid-South Philosophy Conference and the graduate students in my seminar on miracles and the laws of nature for helpful discussion of these issues.

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