

For what birth will you investigate for it? How
and from what did it grow? I will allow you
neither to say nor to think “from what is not”: for
“is not” is not to be said or thought of.

fr. 8.6-9

PARMENIDES (McKirahan (1994, p. 147))

1 Introduction

Parmenides was wrong. Something can come from that which isn’t. Alright, maybe not from that which isn’t *at all*. But something can come from that which isn’t *actual*.

I don’t mean that just in the innocuous way in which something might pop into existence without any cause at all—whether actual or merely possible. Nor do I mean that just in the less innocuous but still relatively innocuous way in which something might bring about something else, but do so only *relative to* or *in contrast with* some mere possible (see Schaffer (2005), Bernstein (2014, 2016), and my discussion in §3). No, I mean it in the *gobsmackingly spooky* way in which something might be brought into existence wholly and entirely by something non-actual. It’d be like the way in which a ghost might bring into existence an actual human child, despite there being no actual ghosts. If you’re nonplussed by that sort of thing, you’ve probably watched one too many horror films.

My argument will consist in calling attention to a case that is quite plausibly both possible and spooky in the way I have described. The case to which I will call attention is a radical version—even more radical than “the more radical version” Jose Benardete (1964) considers—of so-called Zeno causality. If only Zeno had been the teacher and not the pupil; he could have shown Parmenides the Way to the Truth.

Here’s a plan for the paper. In §2 I clarify my central claim and note a presupposition of my initial formulation of the argument, viz. David Lewis’s Modal Realism. In §3 I discuss some nearby claims—claims about *omissions* and the like—how they differ from the one I put forward here, and, more importantly, why the cases on which they rely can’t be pressed into service for me. Then I turn in §4 to the case of Zeno causality I have in mind. I work my way up to the case and then argue both that it’s possible and spooky. In §5 I make the case that Modal Realism can drop out as a presupposition and make its way back in as an implication of the argument’s conclusion. I conclude in §6 with some theological speculation.

2 Clarifications and Presupposition

My main contention is that it's possible for something to be brought into existence by something that is non-actual. That is,

Spooky*: Possibly, there exists something actual x and something non-actual y such that y brought x into existence

The intended sense of the predicate '...is actual' (and '...is non-actual') is non-rigid. I'm referring to what would have been actual or non-actual had that possibility come off. Thus, putting the claim in terms of possible worlds, we might say¹:

Spooky**: There exists a possible world w and an x and a y such that x exists in w and y does not exist in w and y brought x into existence

But this is ambiguous, and on both readings it is weaker than intended. It is ambiguous because '...exists in w ' is ambiguous—even assuming, as I shall, a possibilist interpretation (see nt. 1). On Lewis's (1986, §1.2) own reading, it means '...is part of w '; on another reading, which Lewis (1986, §4.3) considers, it means '...overlaps w '. Ignoring transworld fusions, these come to the same thing: something is part of a given world iff it overlaps that world. But we cannot ignore transworld fusions, since the spooky cause turns out to be such a fusion (see nt. 9). So which is intended? If we give it Lewis's reading in both occurrences, then Spooky** is consistent with the cause being a transworld fusion that overlaps the world in which the created object exists, *and consistent even with its bringing that about solely in virtue of its parts that are worldmates with the created object*. Not so spooky after all. If we give it the other reading in both occurrences, then Spooky** is consistent with the created object being a transworld fusion that overlaps *some* world in which the cause exists, *and consistent with all the relevant causation being internal to that world*. Again, not so spooky. So I don't mean either; or, I mean both: Lewis's reading of the first instance and the other reading of the second instance. Let's make this explicit by using '...exists *entirely* in w ' to mean (the Lewisian) '...is a part of w ', and '...exists in w ' to mean '...overlaps w ', and then stating the thesis as follows:

¹I'm skipping at least one intermediate formulation. We might try to hew more closely to Spooky* and say this: There exists a possible world w such that in w , there exist an x and a y such that x exists in w and y does not exist in w and y brought x into existence. But this can't be right, because it would follow that there is some possible world w such that in w there exists something that doesn't exist in w . And there is no such possible world. Unless, that is, we distinguish between 'in w , there exists...' and '...exists in w ', the former meaning something like, 'were w actual, it would be the case that there exists (quantifiers wide open)...' and the latter meaning something like, '...is located in w '. But an actualist has no use for the latter, and a possibilist has no use for the former. So I, with the possibilist, have just dropped the first 'in w ', and give 'exists in w ' a "possibilist interpretation".

SPOOKY: There exists a possible world w and an x and a y such that x exists entirely in w and y does not exist in w and y brought x into existence

There you have it. Two things, one which brought the other into existence, but which find themselves together in no possible world. That's pretty undeniably spooky.

Before I turn to my argument's presupposition, let me add one clarification about my *attitude* toward the argument and its conclusion. Contrary to the impression I may have given until now, I don't believe SPOOKY. But I don't disbelieve it either. I don't know what to believe. The case to which I will call attention is genuinely puzzling. And if I had to list the ways to address it in order of plausibility, it *seems* to me, at least in some moods, that SPOOKY is at the top of the list.

Now to what I shall presuppose. It follows from SPOOKY that there exist two things that are not worldmates. So at most one exists in the actual world. So at least one of them is non-actual. Thus, it follows from SPOOKY that there are non-actual things, that actualism—the doctrine that everything is actual—is false, and hence that possibilism—the denial of actualism—is true.

In giving my argument, at least in its first iteration, I will take that component of SPOOKY for granted. Indeed, I will take for granted Modal Realism, *tout court*, with its plenitude of mere possibilia. (It seems reasonable enough to assume that the best version of possibilism is the one Lewis puts forward.) It's hard enough to establish the conditional claim—if Modal Realism is true, then SPOOKY is true—that in seeking to establish SPOOKY I will argue just for the conditional, and simply assume the antecedent. The conditional is anyways *interesting*, since the foremost Modal Realist held views about transworld causation that straightforwardly entail its falsity (see [Lewis \(1986, §1.6\)](#) and my discussion in [§4.3.2](#)).

But I realize that most people who've given the matter serious thought are actualists, and my argument would therefore be much *more* interesting if I could drop Modal Realism as a presupposition. I will try to do just that in the second iteration of the argument. My hope is that the first iteration will serve as a warmup. Once you see the good reason to accept the conditional, I suspect you will see that it, or something very much like it, is also good reason to accept both the conditional and the antecedent together.

3 Omissions

Some philosophers, in reflecting upon omissions, absences, failures, and such-like oddities, have put forward claims that sound superficially similar to my central claim. But surface appearances are misleading here. The claims are very different. And the cases upon which they reflect are inadequate for my purposes, even if

they are adequate for theirs. To forestall confusion or suspicions of reinventing the wheel, I will dwell briefly on these other cases and claims.

Suppose a gardener falls asleep on the job, neglects to water the flowers, and the flowers wilt and die. We might naturally say, “The gardener’s failure to water the flowers caused the demise of the flowers.” If that sentence is both *true* and *maximally metaphysically revealing*, then there’s some *thing*—the gardener’s failure to water the flowers—that caused some other thing—the demise of the flowers. But what is that first thing? If all causes are events, then the gardener’s failure to water the flowers is an event, some *worldly bit*. But what an odd bit of the world it is! We might ask such things as: When did it occur? Where did it occur? Is it distinct from or identical with the gardener’s failure to water the trees? No answers seem forthcoming, and we might reasonably suspect that no answers exist. What to do?

One might reply that it’s not true that all causes are events. Indeed, maybe *no* causes are events, but there are causes nonetheless. It has been suggested (Mellor (2002)) instead that only *facts* are causes, where facts are supposed to be more like propositions—*representations* of how a world might be—than like worldly bits. So then the gardener’s failure to water the flowers, if it’s a cause, is a fact, not an event. The questions we raised about there being such an *event* as the gardener’s failure to water the flowers are either moot or easily answered, once we switch to a fact framework: Facts don’t occur at all, they obtain; with respect to a huge number of facts, it’s not clear that it even makes sense to ask where and when it obtains; and the proposition that the gardener failed to water the flowers is certainly distinct from the proposition that the gardener failed to water the trees. But adopting this position comes at the high cost of removing causation from the “world”, since it’s no longer a relation between worldly bits. One could instead bite the bullet—and maintain that there really is such an event as the gardener’s failure to water the flowers—and either provide answers to the questions we raised or contend that they need not be answered (Payton (2018), Silver (2018)). But those routes are clearly very costly in their own right.

These difficulties have led some philosophers to deny that the gardener sentence is *maximally metaphysically revealing*, even if it’s true. You can’t just read the sober ontological truth straight off of the surface grammar. So even if the sentence is true, there might not really be any such *thing*—whether event *or* fact—as the gardener’s failure to water the flowers. Nevertheless, assuming that the sentence *is* in fact true—and can one plausibly claim it’s simply *false*?—then presumably *something* having to do with the gardener was a cause of the flowers’ demise.² What is that thing?

One natural thought is that it’s whatever the gardener was doing when he

² Although Beebe (2004) has denied that the sentence is true, and Beebe (2004), Lewis (2004), and Varzi (2007) have said that in the final analysis nothing having to do with the gardener caused the wilting—at most the gardener figures into a causal explanation, not a genuine causal relation.

should have been watering the flowers—or when he *would* have been watering the flowers, had he done so—i.e. napping. The gardener’s nap is a metaphysically, if not professionally, respectable worldly bit. Its spatiotemporal location and identity conditions are about as clear as those of any event. There is no need to fret about its existence. So you might suggest that in the final analysis—and this is what makes the gardener sentence true—the gardener’s nap caused the flowers to wilt. The trouble, however, is that left unadorned and unembellished this suggestion is implausible, at least as a general account of neglectful gardener cases (Schaffer (2005), Bernstein (2014)). Suppose that our gardener is particularly derelict, derelict also in his *dispositions* to discharge his duties. If he hadn’t fallen asleep on the job, he would have made a run to Dunkin’ Donuts instead, and would have thus neglected to water the flowers regardless. Now we don’t have the right pattern of counterfactual dependence between the flowers’ demise and the gardener’s nap to undergird a causal relation: even if the gardener hadn’t napped, the flowers would still have wilted. But we’d be just as inclined under these suppositions to say “The gardener’s failure to water the flowers caused the demise of the flowers”. Somehow the gardener’s watering the flowers has to get in on the action, while not being the *only* thing that gets in on the action.

That’s exactly what several philosophers (Schaffer (2005), Bernstein (2014)) have suggested. To simplify a bit and elide some differences between Schaffer and Bernstein: on their view, the gardener’s nap, *relative to*, or *as contrasted with*, the gardener’s watering the flowers, caused the demise of the flowers.³ Since the watering is a non-actual event, it turns out on their view that at least sometimes non-actual events play a causal role.⁴ Now, causing the death of a flower might not be quite as impressive as bringing something into existence, but that’s an artifact of our example. Replace failure to water the flowers with failure to use a contraceptive, and there you have it: a non-actual event playing a causal role in bringing a human child into existence.

But as metaphysically interesting as that would be, it wouldn’t be *spooky*. More importantly, it wouldn’t involve a non-actual event being a *cause* of an actual event. It doesn’t make any sense to say—in the cases Schaffer and Bernstein are discussing—that the non-actual event is a cause of the relevant effect. To say so

³According to Schaffer, the relativization is built into causation itself. Causation, on his view, is always a four-place relation: Causal claims that are maximally metaphysically revealing have the form, *c* rather than *c** caused *e* rather than *e**. According to Bernstein, there is no relativization built into causation itself: Causal claims that are maximally metaphysically revealing have the form *c* caused *e*. But there is relativization built into the relation of *causal salience*; in certain contexts, certain non-actual events—the *omitted*, as opposed to merely *absent*, ones—are causally salient, and therefore relevant to the cause’s bringing about the effect.

⁴Indeed, Bernstein subsequently argued (2016) that at least sometimes *impossible* events—like proving that $2 + 2 = 5$ —can play a causal role.

Note: according to Schaffer, *whenever* there is causation there are non-actual events playing a causal role.

would be to flagrantly violate the counterfactual criterion for causation. If the non-actual event hadn't occurred, then the effect would of course still have occurred. After all, the non-actual event *didn't* occur, and the effect still occurred.⁵ That's why it makes no sense to think of the (non-actual) gardener's watering the flowers as causing the wilting of the flowers. What *does* make sense to say is that the (non-actual) gardener's watering of the flowers is the thing such that *had it occurred instead of* the gardener's nap, then the flowers *wouldn't* have wilted. But then if anything in the vicinity is the cause, it's the gardener's nap, not the gardener's watering. At most we can say, what Schaffer and Bernstein *do* say, that the gardener's watering played some *causal role* in the wilting of the flowers.

And there is a vast distance between *playing a causal role* and actually *being a cause*, at least as the former phrase is being employed in our context. To appreciate just how vast the distance is, it seems to me that the Schaffer-Bernstein view—or at least a view that's as good as theirs—is consistent with actualism.⁶ There need not *be* any non-actual events for the contrastive or relative gambit to work: ersatz versions will suffice. After all, the contrasts need not have any causal powers if they are not being called upon to cause anything.

Hopefully it is now clear enough that SPOOKY doesn't begin to follow from the Schaffer-Bernstein view, nor does it gain any support from the pretty ordinary cases they consider.

4 Zeno Causality and Other-Worldly Effects

4.1 THE CASE

But it does gain support from a rather extraordinary case. Jose Benardete famously introduced a number of puzzling scenarios, all of which involve some “open-ended” infinite series and violate some deeply held convictions about causation.

Here are a couple moderately puzzling ones:

Let the peal of a gong be heard in the last half of a minute, a second peal in the preceding 1/4 minute, a third peal in the 1/8 minute before that, etc. *ad infinitum*... Of particular interest is the following puzzling case. Let us assume that each peal is so very loud that, upon

⁵I am assuming that a given subjunctive conditional entails the corresponding material conditional. Given a possible-worlds analysis for subjunctive conditionals, this amounts to the assumption of weak centering (that no world is closer to itself than it is).

⁶It's not clear to me whether their own views are possibilist. They freely quantify over and refer to non-actual events, but they do not flag any commitment to possibilism and so they might intend all such quantification and reference to be understood as a mere *façon de parler*. What is clear to me is that the core of their view is consistent with actualism.

hearing it, anyone is struck deaf—totally and permanently. At the end of the minute we shall be completely deaf (any one peal being sufficient), but we shall not have heard a single peal! For at most we could have heard only *one* of the peals (any single peal striking one deaf *instantly*), and which peal could we have heard? There simply was no first peal. We are all familiar with various physical processes that are followed by what are called after-effects. We are now tempted to coin the barbarous neologism of a *before-effect*...

A man is shot through the heart during the last half of a minute by A. B shoots him through the heart during the preceding $\frac{1}{4}$ minute, C during the $\frac{1}{8}$ minute before that, &c. *ad infinitum*. Assuming that each shot kills instantly (if the man were alive), the man must be already dead before each shot. Thus he cannot be said to have died of a bullet wound. Here, again, the infinite sequence logically entails a before-effect. (1964, 255-59)

These are puzzling cases, indeed. They're puzzling not so much because the effect in each case precedes the cause—we can learn to live with such things. They're puzzling because we're tempted to infer from them that it's possible for something to be caused to occur while *nothing in particular* causes it to occur. Thus, we're tempted to think that we're rendered deaf, *caused* to become deaf, but that *nothing in particular* caused us to become deaf; that the man is killed, *caused* to die, but that *nothing in particular* killed him. That would already be spooky.

But Hawthorne (2000) convincingly argues that this temptation ought to be resisted. In both of these cases, there *is* something that is as good a candidate as any to have been the cause: the *fusion* of the bullets killed the man, and the *fusion* of the sound waves struck us deaf.⁷ It's true that none of the bullets killed the man, and it's true that none of the sound waves killed the man, but it would be fallacious to infer that their fusion didn't do these things.

Indeed, Hawthorne convincingly argues that we should also resist the temptation to infer that it's possible to “conjure up action at a distance out of very mundane objects that do not, when finitely combined, ever act at a distance.” This is tempting to infer once we grant Hawthorne's contention that the fusion of the bullets killed the man. After all, none of the bullets came into contact with the man (until after he died). But Hawthorne notes that we can infer from this fact that the fusion of bullets did not come into contact with the man (until after he died) only if we endorse the following principle about contact:

THE CONTACT PRINCIPLE: If *y* is the fusion of the *x*'s and *z* contacts

⁷Uzquiano (2012) suggests alternatively that it is the *plurality* of the bullets etc. that collectively killed him. As best as I can tell nothing here or throughout this chapter will turn on which one is correct, so I will more-or-less arbitrarily but consistently speak in terms of the fusion as a cause rather than the plurality.

y, then z contacts one of the x's.

While that principle seems correct, and may even *be* correct if there are only finitely many x's, it is not true in full generality. A fusion of infinitely many x's may touch things that none of the x's individually touch. So there needn't even be any spooky action-at-a-distance in this case—just quirky relationships between fusions and their parts.

All this works well and good for the cases I've mentioned so far. But then Benardete introduces an "even more radical version of the paradox":

A man decides to walk one mile from A to B. A god waits in readiness to throw up a wall blocking the man's further advance when the man has travelled $\frac{1}{2}$ mile. A second god (unknown to the first) waits in readiness to throw up a wall of his own blocking the man's further advance when the man has travelled $\frac{1}{4}$ mile. A third god ... &c. ad infinitum. It is clear that this infinite sequence of mere intentions (assuming the contrary-to-fact conditional that each god would succeed in executing his intention if given the opportunity) logically entails the consequence that the man will be arrested at point A; he will not be able to pass beyond it, even though not a single wall will in fact be thrown down in his path. The before-effect here will be described by the man as a strange field of force blocking his passage forward.

Here there is an even greater temptation to infer that it's possible for something to be caused to occur while *nothing in particular* causes it to occur. After all, no wall is even put up, and none of the gods actually *does* anything. Yet the man is stopped dead in his tracks at point A. Apparently, he is stopped, but by nothing in particular. Again, that would already be spooky.

But Hawthorne argues that here too the temptation ought to be resisted. There is, after all, *something* that is a candidate to be the cause the man's arrest, viz. the fusion of the gods. It's true that none of the gods *does* anything—indeed, none of them changes one iota—but we can infer that the fusion *also* does nothing only by relying on something like the following principle:

THE CHANGE PRINCIPLE: If y is the fusion of the x's and the x's are individually capable only of producing effect e by undergoing change, then y cannot (without the addition of some non-supervening causal power) produce effect c without undergoing change.

While that principle seems correct, and may even *be* correct if there are only finitely many x's, Hawthorne contends that it is not true in full generality. A fusion of infinitely many x's may manage to bring something about without any of the x's undergoing any change, *despite the fact* that none of the x's is individually capable of bringing about that effect without undergoing change, and *despite*

the fact that there are no spooky non-supervenient causal powers. So, again: there needn't be anything spooky going on—just quirky relationships between fusions and their parts.

I shall grant that all of this is right. But it is of no help when we take the next step: to a case that is more radical than Benardete's "more radical version", in which there *aren't* any (actual) gods who would act in the ways described, but in which there *would be* if push came to shove.

THE CASE OF THE DRAGON-SLAYING WOULD-BE GODS: A dragon is alive at 12 noon, at which time there are no (actual) dragon-slaying gods in existence. But if the dragon were to survive until 1 pm, a dragon-slaying god would come into existence and slay the dragon at 1 pm; if the dragon were to survive until 12:30 pm, a dragon-slaying god would come into existence and slay the dragon at 12:30 pm; if the dragon were to survive until 12:15 pm...&c. ad infinitum. At no time after 12 pm and before or at 1 pm would a dragon-slaying god come into existence unless the dragon is alive at that time. (Oh, and dragons' lives are not temporally gappy: if a dragon is alive at t_1 and at a later time t_2 , then he is alive at every time between t_1 and t_2 ; so once a dragon is slain, he will never live again.)

It's clear that the infinite sequence of counterfactuals—together with the gaplessness of dragon lives—logically entails the consequence that the dragon doesn't survive past 12 noon.⁸ But it's also clear that the facts of THE CASE (as I shall now call it) logically entail that *if* the dragon does not survive past 12 pm, then there *are no* (actual) dragon-slaying gods in existence at any time between 12 pm and 1 pm. It thus follows as a matter of logic from the facts of THE CASE *both* that the dragon doesn't survive past 12 pm and that there are no (actual) dragon-slaying gods in existence at any time between 12 pm and 1 pm.

Let us grant for the moment that THE CASE is indeed possible. Then there is an exceedingly great temptation to infer that it's possible for something to be caused to occur while nothing in particular causes it to occur. After all, in THE CASE there *are no* actual dragon-slaying gods—at least none hanging around at the relevant time—and so no *fusion* of dragon-slaying gods either. Yet the dragon is slain at 12 pm. Apparently, the dragon is slain, but by nothing in particular.

I suggest that this is *nearly* right; we ought to succumb *almost entirely* to this paradoxical temptation. But not entirely. For while there is nothing that *actually* exists that is a candidate for slaying the dragon, there is—assuming Modal Realism—*something* that exists that is an excellent candidate for slaying the dragon: the fusion of dragon-slaying gods in nearby worlds who, collectively, make the rel-

⁸Again (see nt. 5), I assume weak centering. For a careful version of the argument for this logical entailment, see Hawthorne (2000).

evant counterfactuals true.⁹ It's *because of that fusion* that the dragon perished: If not for the fusion, the dragon would have lived happily ever after.¹⁰ What we have here is not a before-effect but an *other-worldly effect*.

Granting both the possibility of THE CASE and that THE CASE involves an other-worldly effect, SPOOKY is just around the corner. We just need to change THE CASE to one of dragon makings rather than dragon slayings. Consider it done.¹¹

4.2 POSSIBLE?

But is THE CASE really possible? On the surface, yes. My statement of THE CASE involved me in no logical contradiction, and caught me in no analytic falsehoods. But maybe there's an impossibility lurking beneath the surface. Indeed, on a Humean view about counterfactuals, dispositions, laws of nature, and suchlike, the counterfactuals at the heart of THE CASE must ultimately be grounded in truths about so-called occurrent properties and relations, truths about the "Humean Mosaic". So one wonders whether one can fill out THE CASE in such a way that it is still consistent, and consistent with the Humean view. What, one might press, could

⁹Note: this fusion is presumably a transworld fusion. For any fusion of infinitely many dragon-slaying gods that exists entirely in a single world, there is an *even better* candidate fusion of infinitely many dragon-slaying gods that exists entirely in a *different* single world: it'll be one that duplicates the first fusion but with some finite number of gods missing from the beginning of the series (the temporally later part of the series). The world in which the second fusion exists is closer to actuality than the world in which the "bigger," first one exists. And since these two fusions do not overlap—they are each entirely located in different worlds, and according to Modal Realism, distinct worlds do not overlap—the second is simply a better candidate than the first. (If they overlapped, we'd presumably say what we say about the fusions in the original Benardete cases: the fusion of all the bullets and the fusion of all the gods is as good as any proper part that would also have been sufficient to cause the relevant effect—it inherits whatever causal powers its parts have.) But then no fusion of infinitely many dragon-slaying gods that is entirely located in a single world is the *best* candidate for having slayed the dragon. That title goes to a transworld fusion of dragon-slaying gods, a fusion that can't be bested.

¹⁰On how to understand that claim, see nt. 14.

¹¹OK, for those who are skeptical I'll actually go ahead and do it. Behold, THE CASE OF THE DRAGON-MAKING WOULD-BE GODS: There are no dragons at 12 noon, at which time there are no (actual) dragon-making gods in existence. But if there were still no dragons at 1 pm, a dragon-making god would come into existence and make one at 1 pm; if there were still no dragons at 12:30 pm, a dragon-making god would come into existence and make one at 12:30 pm; if there were still no dragons at 12:15 pm...&c. ad infinitum. At no time after 12 pm would a dragon-making god come into existence unless there were still no dragons at that time. (Oh, and if a certain dragon exists neither at t_1 nor at a later time t_2 , then he doesn't exist at any time between t_1 and t_2 ; so once a dragon is created, he will never go out of existence.) It's clear that the infinite sequence of counterfactuals—together with the immortality of dragons—logically entails the consequence that a dragon will be created who will exist at every time after 12 pm. The facts of the new case likewise entail that there are no (actual) dragon-making gods in existence at any time between 12 pm and 1 pm.

possibly ground counterfactuals about the behavior of non-actual dragon-slaying gods?!?

Why, the behavior of *actual* dragon-slaying gods, of course. Let me supplement THE CASE with the following background:

BACKGROUND: THE CASE happened on January 1, 2020, in the 13,562nd epoch. Some of the previous epochs were dragonless, but many were not. There was no discernible pattern in when dragons would come into existence: dragons would just pop into existence, as we might say. But there most definitely was a discernible pattern in when dragons would go *out* of existence. The pattern revolved around what became known among dragons as “hopeless hour”: the hour between 12 pm and 1 pm on January 1, 2020 in every epoch was a most inauspicious one for dragons. In particular, for every natural number N , no dragon ever survived past $12:\frac{60}{N}$ pm on January 1, 2020. There was the time, in the 2,020th epoch, for example, when a dragon came into existence at 12:45. All was going well for her until 1 pm, and then *boom*. At 1 pm, a dragon-slaying god came into existence—on its left hand was a permanent tattoo with the number ‘2,020’ on it, and on its right hand was a permanent tattoo with the time ‘1 pm’ on it—and just slayed her. Or there was the time, in the 43rd epoch, in which one dragon came into existence at 12:13 pm and another at 12:14 pm. They had nice but very brief lives. For at 12:15 pm, a dragon-slaying god came into existence—this one had on its left hand a permanent tattoo with the number ‘43’ on it, and on its right hand a permanent tattoo with the time ‘12:15 pm’ on it—and just slayed them. Once the dragons started keeping track of the exact times at which they had no hope of survival, the pattern that emerged, which was evidently a law of nature, was unmistakable: for every epoch and for every natural number N , the time $12:\frac{60}{N}$ pm on January 1, 2020 of that epoch had its own associated sort of dragon-slaying god. If some dragon were alive at some such time, a dragon-slaying god with corresponding permanent tattoos (exactly one epoch number on the left, exactly one time on the right) would come into existence and slay all the dragons then alive; otherwise no dragon-slaying god would come into existence. And so it was that when January 1, 2020 of the 13,562nd epoch rolled around, the dragon—the dragon that features in THE CASE—came into existence at 11:27 am, and went out of existence at 12 pm. Not a single other dragon came into existence in that epoch, and so not a single dragon-slaying god came into existence in that epoch.

It seems that the conjunction of BACKGROUND and THE CASE is possible: my statement of both of them together involved me in no logical contradiction, and caught

me in no analytic falsehoods. On top of that the conjunction seems consistent with a Humean view about counterfactuals. Given BACKGROUND, each counterfactual at the heart of the case is backed by a law of nature, a law that is itself backed by perfectly kosher bits of the Humean mosaic.

There might still be some hidden impossibility. But we have no reason to believe so. So I will assume that THE CASE, in conjunction with BACKGROUND, is indeed possible.

4.3 CAUSATION?

But is THE CASE, even so supplemented, really one of other-worldly causation? Some might say, No, it involves causation alright but all of it internal to the world in which the dragon is slain; others might say, No, it involves no causation at all.

4.3.1 Intra-World Causation

Start with the suggestion that it involves causation, but all of it internal to the dragon's world. It's very hard to see how this could be right. Which of the dragon's worldmates is a viable candidate for having slayed him? The only half-decent candidate would be some fusion of those actual dragon-slaying gods who, according to BACKGROUND, exist in other epochs. Perhaps such a fusion, despite not being around at the relevant time in the 13,562nd epoch, was responsible for the slaying of the dragon.

But due a stipulation I made in the BACKGROUND, this isn't really a decent candidate at all. Recall that in every epoch if a dragon were alive at one of the inauspicious times, then a dragon-slaying god, permanently tattooed on his left hand with just the number of that epoch, would come into existence and slay the dragon. So, in THE CASE together with BACKGROUND, *none* of the *actual* dragon-slaying gods—each of whom bears a permanent tattoo on his left hand with just the number of a different epoch—is such that *it* would have slayed the dragon. Their fusion is not a good candidate at all.

4.3.2 No Causation

Consider, instead, the suggestion that THE CASE involves no causation at all. That's not to embrace the paradoxical view that the dragon was slain, but that nothing slayed it. It's to embrace the counterintuitive view that the dragon was not slain at all—nothing caused the dragon to die, and so, naturally, he wasn't caused to die.

I can see three reasons to think that is so. First, one might take note of the final case to which Benardete calls our attention:

In regard to the paradox of the gods, the oddity here may be somewhat diminished if we replace each god *by a law of nature*. It is not, after all, the combined intentions of the gods *as such* which blocks the

man's progress at A. It is rather the following sum-total of hypothetical facts, namely (1) if the man travels $1/2$ mile beyond A, then he will be blocked from further progress, (2) if the man travels $1/4$ mile...&c. *ad infinitum*. (1964, 259, emphasis mine)

That is (modifying the details to be about dragons and slayings), we can get the same result that we get in THE CASE without it being true that if the dragon were to survive until 1 pm, then *a god would come into existence and slay the dragon*. All that's needed is the counterfactual that *follows* from that counterfactual, viz. that if the dragon were to survive until 1 pm, *then the dragon would go out of existence at 1 pm*—and that the same be true for all the other times in the Zeno series. But those counterfactuals can be made true “directly” by some law or laws of nature. That is, there is a possible case—call it THE CASE OF THE DRAGON PERISHINGS—that is just like THE CASE except that there are no actual dragon-slaying gods and no true counterfactuals about dragon slayings: there is just a law of nature that for every natural number N , the time $12:\frac{60}{2^N}$ pm January 1, 2020 spells the end of dragons: any dragon alive at any such time would therewith go out of existence. (To deal with Humean scruples, we could supplement THE CASE OF THE DRAGON PERISHINGS with sufficiently many epochs in which dragons go out of existence at the relevant times to underwrite such a law.)

It equally well follows from the facts of *that* case that the dragon doesn't survive past 12 pm. But it seems clear enough that in THE CASE OF THE DRAGON PERISHINGS, the dragon was not literally slain, for there was nothing at all—whether actual or merely possible—that is a candidate for having slain him. The dragon just perished as a matter of nomic necessity. So why not say the same about THE CASE? Why not say that the dragon wasn't literally slain, for nothing slayed him, that he just perished as a matter of nomic necessity? It *is*, after all, nomically necessary in THE CASE that no dragon survives past 12 pm on January 1, 2020—the result follows as a matter of logic, as we have seen, from the laws of nature.

Here is one good answer to the question, “Why not say the same thing about THE CASE as we say about THE CASE OF THE DRAGON PERISHINGS?”. Unlike in THE CASE OF THE DRAGON PERISHINGS, in THE CASE there *is* a fine candidate for being the cause of the dragon's perishing: the fusion of dragon-slaying gods in nearby worlds who, collectively, make the relevant counterfactuals true. So THE CASE is *much* more like Benardete's original cases than like THE CASE OF THE DRAGON PERISHINGS. And no one, presumably, would say that the mere existence of THE CASE OF THE DRAGON PERISHINGS gives us reason to doubt that there is any causation in Benardete's *original* cases. Why would the existence of a possible case in which there is no candidate cause cast any doubt on the presence of a cause in a case in which there *is* a candidate cause? (It wouldn't.)

The second reason to think THE CASE involves no causation is similar to the first. As Gabriel Uzquiano (2012) ingeniously points out, not every case that is structurally just like Benardete's—even in containing actual objects or events (not

mere laws) that play the same role as the gods—is plausibly one in which there is Zeno *causality*. He invites us to consider the following case¹²:

THE CASE OF WORLD PEACE: At no time before 1 pm has world peace come. But there is a lamp. And there is a god who resolves to turn on the lamp 1 hour after 1pm iff world peace has still not come about by then. And there is another god who resolves to turn on the lamp 1/2 hour after 1pm iff world peace has still not come about by then. And so, *ad infinitum*.

It follows from the facts of THE CASE OF WORLD PEACE that these gods will jointly be able to carry out their resolutions if and only if there is world peace at 1pm. But it's not particularly plausible, Uzquiano says, that a situation in which they are so able is one in which they collectively, or their fusion, *brought about* or *caused* world peace; world peace at 1 pm is simply a *precondition* for the joint executability of all of their resolutions. So why not say the same about THE CASE? Why not say that the dragon wasn't literally slain, for nothing slayed him, that his perishing was simply a *precondition* for the joint truth of all the counterfactuals about dragon-slaying gods?

Here is one good answer to the question, "Why not say the same thing about THE CASE as we say about THE CASE OF WORLD PEACE?". In THE CASE, each of the relevant merely possible gods is capable of slaying the dragon; each one is capable of causing its death. In THE CASE OF WORLD PEACE, on the other hand, none of the individual gods has the power to bring about world peace, whether by making a resolution or otherwise. (If they did, then our intuitions about whether they, or their fusion, caused world peace would shift, presumably.) So THE CASE is *much* more like Benardete's original cases than like THE CASE OF WORLD PEACE. And no one, presumably, would say that the mere existence of THE CASE OF WORLD PEACE gives us reason to doubt that there is any causation in Benardete's *original* cases. Why would the existence of a possible case in which none of the members of the Zeno series has the power to bring about the before-effect, and there is no Zeno causality, cast any doubt on the presence of Zeno causality in a case in which *each* of the members of the Zeno series has the power to bring about the before effect? (It wouldn't.¹³)

The third and final reason to think THE CASE involves no causation is very different. It goes as follows: (1) *if* in THE CASE the dragon was caused to die then it's possible for there to be other-worldly causation (as I argued in §4.2 and §4.3.1); but (2) it's not possible for there to be other-worldly causation; so (3) it's not true that in THE CASE the dragon was caused to die.

¹²I have slightly modified the details of his case so as to make it as structurally analogous to Benardete's cases as possible.

¹³Not that Uzquiano suggests otherwise. Indeed, the distinction I've mentioned is his.

The defense of premise (2) is Lewisian (1986, §1.6). Causation is given a counterfactual analysis, and counterfactuals are given a possible-worlds analysis. But there's no way to sensibly apply the possible-worlds analysis to a counterfactual that underwrites a claim of other-worldly causation: the trouble is there is no world at which to sensibly evaluate it. Should we evaluate it at the world in which the cause took place? As Lewis notes, that doesn't seem right: since we're trying to evaluate a case of other-worldly causation, it doesn't seem relevant to ask whether we get the effect at worlds closest to the cause-world, but with the cause removed. Even more obviously it doesn't seem to make sense to ask whether we get the effect at worlds closest to the effect-world, but with the cause removed; that might well be the effect-world itself. So, Lewis concludes, other-worldly causation "comes out as nonsense".

My answer to this is: of course. *Of course* if everything Lewis wrote in *On The Plurality of Worlds* is right then there's no place for other-worldly causation, or for SPOOKY more specifically. What my argument shows, however, is that if you already accept Modal Realism—a largish but still only partial chunk of Lewis's overall view—then you are subject to significant pressure not to accept *both* Lewis's counterfactual analysis of causation *and* his possible-worlds analysis of counterfactuals, at least not without qualification.

In any case, Lewis's counterfactual account of causation is notoriously difficult to square with our judgments about cases of late preemption and other species of redundant causation (see Paul & Hall (2013, Ch. 3)). And his possible-worlds account of counterfactuals is notoriously impossible to square with many of our judgments about counterpossibles (Dorr (2005, §4.1)). If we give up at least one of these, then Lewis's argument against other-worldly causation fails.¹⁴ THE CASE creates still more pressure on top of the already existing pressures on the Modal Realist to allow for other-worldly causation after all. I'd suggest the pressure is now too great to bear.¹⁵

¹⁴Suppose we keep the counterfactual analysis and drop the possible-worlds account *in its full generality*. In particular, say we allow that the latter is still right in cases of possible antecedents, but not in cases of impossible antecedents. Then we should say the following about other-worldly causation (putting it in Lewis's preferred event-causal framework): event E in world *w* was caused by event C not in world *w* just in case had event C not occurred at all (quantifiers wide open)—that is, if event C had just been deleted from modal space—event E would not have occurred. What's relevant in cases of other-worldly causation is the counterpossible in which the *whole of modal space* is different from how it in fact is.

¹⁵I am not saying that it'll be *easy* for Lewis himself to hold on to his Modal Realism while giving up either his view about causation or his account of counterfactuals. One of Lewis's primary motivations to accept Modal Realism is that it gives us all the modal, counterfactual, and causal claims we need or want, but domesticates them metaphysically (read: reduces them). So if he can't fully pull off the domestication—if there's a surd of unreduced counterpossible queerness—then his holding on to Modal Realism might be less motivated. Why not just go ersatz or fictionalist at that point? These are good questions, but not unanswerable. Ersatzism has other problems, as Lewis (1986, Ch. 3) argues, and fictionalism has other problems, as Rosen (1990) notes.

5 Dropping the Presupposition

Thus concludes my argument for the conditional: If Modal Realism is true, then SPOOKY is true. It would be awfully nice, however, if I could argue for SPOOKY, simpliciter—and not just by combining the argument I’ve given for the conditional with an independent argument for Modal Realism. Is there any way to do that? I think so, or near enough at least.

The argument relies just the same on THE CASE, but against A SLIGHTLY DIFFERENT BACKGROUND:

A SLIGHTLY DIFFERENT BACKGROUND: THE CASE happened on January 1, 2020, in the 13,562nd epoch. Some of the previous epochs were dragonless, but many were not. There was no discernible pattern in when dragons would come into existence: dragons would just pop into existence, as we might say. But there most definitely was a discernible pattern in when dragons would go *out* of existence. The pattern revolved around what became known among dragons as “hopeless hour”: the hour between 12 pm and 1 pm on January 1, 2020 in every epoch was a most inauspicious one for dragons. In particular, for every natural number N , no dragon ever survived past $12:\frac{60}{2^N}$ pm on January 1, 2020. There was the time, in the 2,020th epoch, for example, when a dragon came into existence at 12:45. All was going well for her until 1 pm, and then *boom*. At 1 pm, a dragon-slaying god came into existence—on its right hand was a permanent tattoo with the time ‘1 pm’ on it, nothing on its left hand—and just slayed her. Or there was the time, in the 43rd epoch, in which one dragon came into existence at 12:13 pm and another at 12:14 pm. They had nice but very brief lives. For at 12:15 pm, a dragon-slaying god came into existence—this one had on its right hand a permanent tattoo with the time ‘12:15 pm’ on it—and just slayed them. And then there was the time, in the 5,412th epoch in which a dragon came into existence at 12:47, and then the “1 pm dragon-slayer”—the one who came into existence in the 2,020th epoch, with the 1 pm tattoo on its right hand, and never went out of existence—slayed her at 1 pm. Once the dragons started keeping track of the exact times at which they had no hope of survival, the pattern that emerged, which was evidently a law of nature, was unmistakable: for every epoch and for every natural number N , the time $12:\frac{60}{2^N}$ pm on January 1, 2020 of that epoch had its own associated sort of dragon-slaying god. If some dragon were alive at some such time, a dragon-slaying god with a corresponding permanent tattoo (exactly one time between 12 and 1 tattooed on the right hand) would come into existence—unless it had already slayed in a previous epoch, in which case it would already exist—and slay

all the dragons then alive; otherwise, no dragon-slaying god would come into existence. And so it was that when January 1, 2020 of the 13,562nd epoch rolled around, the dragon—the dragon that features in THE CASE—came into existence at 11:27 am, and went out of existence at 12 pm. Not a single other dragon came into existence in that epoch, and so not a single dragon-slaying god came into existence in that epoch. (Note well: It's not that for *every* natural number N there was some actual instance in some epoch in which a dragon was alive at $12:\frac{60}{2^N}$ pm and a dragon-slaying god with the right tattoo slayed it. It's just that for *enough* natural numbers there were actual instances of that sort, so that by far the best balance of simplicity and strength was struck by the claim that generalized over *all* natural numbers.)

Whether or not Modal Realism is presupposed, the conjunction of A SLIGHTLY DIFFERENT BACKGROUND and THE CASE seems possible: my statement of both of them together involved me in no logical contradiction, and caught me in no analytic falsehoods. On top of that the conjunction seems consistent with a Humean view about counterfactuals. Modal Realism is simply irrelevant to the question of their joint possibility.

More interestingly, it seems to me that even without presupposing Modal Realism there is significant pressure to accept that the conjunction involves other-worldly causation: something slayed the dragon, and the only good candidate for having done so is the transworld fusion of all the dragon-slaying gods—some actual, some in nearby possible worlds—who, collectively, make the relevant counterfactuals true.

5.1 INTRA-WORLD CAUSATION, TAKE TWO

Consider the alternative that THE CASE, against A SLIGHTLY DIFFERENT BACKGROUND, involves causation alright, but all of it internal to the dragon's world. Unlike in BACKGROUND, in A SLIGHTLY DIFFERENT BACKGROUND dragon-slaying gods can and actually have slain more than once. So there is a fusion of actual dragon-slaying gods that is a better candidate for having slain the dragon than any we could find in BACKGROUND. If we're not presupposing Modal Realism, then that we might think that fusion is the *best* candidate for having slain the dragon.

But due to two stipulations I made in A SLIGHTLY DIFFERENT BACKGROUND it's not a very good candidate at all. First, I stipulated that each time in the Zeno-series is nomically associated with a dragon-slaying god that has a permanent tattoo of just that time. Second, I stipulated that it *wasn't* the case that for every natural number N there was some actual instance in some epoch in which a dragon was alive at $12:\frac{60}{2^N}$ pm and a dragon-slaying god with the corresponding tattoo came into existence and slayed it. So at least one of the relevant counterfactuals is going

to be made true not by any actual gods but by some non-actual god (or by some fusion of non-actual gods). But then the actual dragon-slaying gods just aren't variegated enough—there's a missing shade of god—for their fusion to be the cause of the dragon's death.

If it's not evident enough that the fusion of actual gods is insufficiently variegated to have caused the death of the dragon, consider the following moral point. Suppose that A SLIGHTLY DIFFERENT BACKGROUND is slightly modified, so that only one dragon-slaying god has ever slain before.¹⁶ Then endorsing this alternative regarding THE CASE, against our twice-modified background, would lead to the conclusion that the single dragon-slaying god was *solely causally responsible* for the dragon's death, that he *slayed the dragon*. (That is, of course, "the dragon" that features in THE CASE; he had already slain some other dragon in a previous epoch.) And if dragon-slaying gods in general are morally responsible for slaying dragons that they slay—we can consistently stipulate that they satisfy whatever metaphysical and epistemic conditions have to be met for that—then this dragon-slayer will be morally responsible for slaying the dragon, and *solely* responsible for having done so. But that's absurd. He didn't lift a finger, and he shouldn't be taking the fall for all the rest of the dragon-slayers.

5.2 NO CAUSATION, TAKE TWO

Consider instead the alternative that THE CASE, against A SLIGHTLY DIFFERENT BACKGROUND, involves no causation at all. Given what I've just argued in §5.1, there isn't any good *actual* candidate for having slain the dragon. So absent any presupposition of Modal Realism, perhaps we ought to just concede the point (§4.3.2) that THE CASE is relevantly like THE CASE OF THE DRAGON PERISHINGS, where the dragon perishes at 12 pm, but simply as a matter of nomic necessity, not because someone slayed him.

But it *isn't* relevantly like THE CASE OF THE DRAGON PERISHINGS, so we shouldn't concede that it is. The crucial difference is that (1) in THE CASE there is a *causal explanation* for the death of the dragon, while in THE CASE OF THE DRAGON PERISHINGS there isn't. And (2) where there is a causal explanation, there is a cause.

The reason to believe (1) is this: in THE CASE there is a perfectly satisfactory explanation of the dragon's death, at least some part of which invokes the features of *actual dragon-slayers*, i.e. the ones who have already slain and would slay again if their time came. That explanation is clearly not *constitutive*, since the explanation and the explanandum "involve" wholly distinct things; *mutatis mutandis* for *metaphysical* explanation more broadly. And it is clearly not purely *logical*, *mathematical*, or *nomical*, since it invokes the features of actual concrete objects. What

¹⁶Ignore any Humean scruples you have. If the Humean can't make sense of the claim I'm about to make, because the modified SLIGHTLY DIFFERENT BACKGROUND is allegedly not compossible with THE CASE—that's her problem, not mine.

else could it be but *causal*? In THE CASE OF THE DRAGON PERISHINGS, on the other hand, there is no such explanation.

And to assume (2) is not to deny that the relation of causal explanation is distinct from the relation of causation, or that there can be a fact/event that figures into a causal explanation of E but that is no part of the cause of E (Beebe (2004), Varzi (2007)). It's just to make the very weak claim that if something has *no cause at all*, then it has no causal explanation either.¹⁷ What sense could there be in a *causal* explanation of something that wasn't caused? None, as far as I can tell.

5.3 THE UPSHOT

So even without presupposing Modal Realism, there is significant pressure to grant that THE CASE against A SLIGHTLY DIFFERENT BACKGROUND involves causation, and that the causation is other-worldly. This won't quite get us to SPOOKY—even if we make the requisite modifications for dragon-making in place of dragon-slayings—since the dragon-slaying fusion *overlaps* the world of the dragon. But we nonetheless get something stronger than SPOOKY** and near enough to SPOOKY:

SUFFICIENTLY SPOOKY: There exists a possible world *w* and an *x* and a *y* such that *x* exists entirely in *w* and *y* does not exist entirely in *w* and *y* brought *x* into existence *at least partly in virtue of parts of y that do not exist in w*

Still pretty spooky. And if we accept it, then we must accept Modal Realism as a consequence. We have in THE CASE a new kind of argument for Modal Realism, and for SUFFICIENTLY SPOOKY to boot.

6 Concluding Unphilosophical Postscript

I shall conclude with some theological speculation. A number of medieval mystics—Jewish, Muslim, and Christian, all roughly contemporaneous—shared a certain deeply puzzling view about God. Indeed, their view amounts to a riddle wrapped in a mystery.

The riddle is their reinterpretation of the traditional doctrine of creation *ex nihilo*. Gershom Scholem (1990, 422) puts their suggestion succinctly: “For it is not, in fact, out of nought in the usual sense of the term that God created the world, but from a Nought that he is Himself”.¹⁸ In other words, it's not that the world was created by God, and not made out of anything at all (as the traditional doctrine would have it). On the contrary, the world was brought into existence by, *and was made out of*, Nothing—the 'ayin, as the Kabbalists (Jewish mystics) call it.

¹⁷Beebe (2004), one of the architects of the distinction, makes this very point.

¹⁸See also Wolfson (1948) and Wolfson (1970).

Of course, on their view, it's also true that the world was brought into existence by God, and by nothing else. That leaves us no alternative but to conclude that God is the very mysterious Nothing.

So much for the riddle. The mystery is that these same mystics *also* held, together with a larger circle of thinkers, that God is infinite, indeed, that God can properly be characterized as *the* Infinite—the '*en-sof*', as the Kabbalists call it. Thus, Azriel of Gerona (c. 1160—c. 1238) says:

This teaches us that the Nought is the Being and the Being is the Nought...Do not take on too much in your speculation, for our finite intellect cannot grasp the perfection of the Impenetrable which is one with '*en-sof*' (cited in Scholem (1990, 424))

Perhaps there isn't any great difficulty in identifying God with the Infinite. But for someone who has *already* identified God with Nothing, this further commitment surely wraps *that* riddle in a mystery. Now we have something that is both Nothing and the Infinite, and which somehow brings other things into existence.

I do not know what they meant by this. Nor am I foolhardy enough to think they could possibly have intended the model I am about to propose. But I think there is something to be said for showing that what they said isn't *nonsense*, that there is a model for how it could be true.¹⁹ The model should be clear at this point: A fusion of infinitely many non-actual dragon-making gods that brings a dragon into existence. Such a fusion is both infinite, in a pretty clear sense, and Nothing, in another pretty clear sense.

The upshot: It's least possible for Parmenides to be wrong, and the Kabbalists to be right.²⁰

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¹⁹At the very least I will have refuted the Talmudic scholar, Saul Lieberman, who reportedly once introduced Scholem, the historian of Kabbalah, by saying, "nonsense is nonsense, but the history of nonsense is scholarship".

²⁰I am indebted to very helpful feedback from Menachem Danishefsky, Tyron Goldschmidt, Graham Priest, and members of the audience at my talk at the 93rd Joint Meeting of the Aristotelian Society and Mind Association, where I presented a number of the ideas in this paper.

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