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# Two Concepts of Double Prevention

BRADFORD SKOW Massachusetts Institute of Technology

Is double prevention causation? Some say yes and some say no, but the answer is yes *and* no. Interrupting double prevention, where A prevents B from continuing to prevent something, is causation, while blocking double prevention, where A intervenes before B has begun preventing anything, is not. I present two arguments for this thesis. First, it sorts canonical examples of double prevention correctly. Second, well-known theoretical arguments that double prevention is not causation only show that blocking double prevention is not causation.

#### 1. Introduction

If A prevents B from preventing C from doing something, that's double prevention. Is A's act a cause of C's? Figuring out the answer is the problem of double prevention. Different cases pull us in different directions. Here is Ned Hall's "Newt's Failed Mission" (see Figure 1, from Hall 2002: 278):

It's a typical day during World War III, and the Good Guys have sent Bomber Billy on a mission to destroy an enemy target. Earlier in the day, one of the Bad Guys' fighter pilots—let it be Nasty Newt—takes off in his fighter plane on a routine patrolling mission. The Bad Guy groundbased radar defense system has just spotted Billy, and orders are about to be sent to Newt to go shoot him down, when a malfunction occurs in Newt's plane, and, sensitive thing that it is, it explodes. Billy's mission goes through completely undisturbed, and he destroys his target. But if the malfunction *hadn't* occurred, Newt would have shot down Billy, and the target would *not* have been destroyed. So the malfunction prevents something (Newt shooting down Billy) which would have prevented something else (Billy destroying the target) [...] (Hall 2002: 277–78)

Contact: Bradford Skow <bskow@mit.edu>

Is the malfunction a cause of the explosion at the target? Intuitively, no.



But other examples of double prevention are quite obviously cases of causation, like Schaffer's firing of a gun (see Figure 2, from Schaffer 2000: 287). The gun fires when the spring uncoils and smashes the striker into the back of the bullet casing, making the gunpowder explode; the explosion fires the bullet out of the barrel. When the gun is cocked, the spring is blocked by the sear, which is connected to the trigger. Pulling the trigger prevents the sear from preventing the spring from uncoiling. And pulling the trigger causes the firing of the gun.



Take Newt's Failed Mission as a guide to double prevention in general, and double prevention is never causation. Take Schaffer's gun as a guide, and it always is. That is why the problem of double prevention is a problem.

But this is not a problem that needs solving. "Is double prevention causation?" is a bad question. The good question is *when* double prevention is causation. And the right answer is the easy one: sometimes it is, and sometimes it isn't. The pulling of the trigger is a cause of the firing, but the malfunction on Newt's plane is not a cause of the explosion at the target.

# 2. Blocking and Interrupting

Of course it is not really that easy. It will not do to insist that the distinction between causal and non-causal double prevention is real without providing an analysis. The problem is that all cases of double prevention, when suitably described, seem indistinguishable. Both Newt's mission and Schaffer's gun have been represented using the same neuron diagram; and if those representations are correct, one might argue, there can be no causal difference between the cases. Figure 3 is Hall's neuron diagram for Newt; Figure 4, Schaffer's neuron diagram for a gun (Hall 2004: 242; Schaffer 2000: 287).<sup>1</sup> As usual, a black neuron represents a "positive" event; a white neuron represents the absence of an event; arrow-headed lines are stimulatory connections; circle-headed ones, inhibitory.<sup>2</sup>



Figure 3

But the examples are not indistinguishable. Double preventions can be divided into the causal and the non-causal. Here is how.

<sup>1.</sup> I have made small but irrelevant changes to the diagrams. The diagram in (Hall 2004) is not labeled with names for events in the story, but the intended labeling is clear. (The story is also slightly different from the one in Hall 2002, in irrelevant ways.) The diagram in (Schaffer 2000) has its neurons in different places, but my moving them does not change their meaning. I have also added a neuron and two labels for clarity: "spring cocked" (in it second occurrence) and "spring uncoiling." If you are wondering about how to interpret the unlabeled white neuron in Figure 4, stay tuned.

<sup>2.</sup> When circles in neuron diagrams represent neurons, lines represent axons connecting them. When circles represent events, interpreting the lines is trickier. You can read the arrow from "Newt Flying" to "Newt shooting at Billy" in Figure 3 to mean that (i) if the malfunction had not happened and Newt's flying had still happened, Newt would have shot, and (ii) if the malfunction had not happened and Newt's flying had not happened, Newt (still) would not have shot. And you can read the inhibitory connection from "Malfunction" to "Newt shooting" to mean that if the malfunction happens, then Newt does not shoot.



Figure 4

In Newt's Failed Mission, the malfunction on Newt's plane prevents Newt from intercepting Billy. Newt is a would-be preventer, stopped by the malfunction before he can interfere with Billy. That makes it a case of what I will call blocking double prevention. In blocking double prevention, one process produces the final event, in this case the destruction of the target; and a second process that would have prevented it from doing that is blocked before it can even begin preventing it. At no time is Newt preventing Billy from doing anything. Newt's preventing is purely hypothetical: something he might have done, had the malfunction not happened.

Schaffer's gun, by contrast, exhibits what I will call interrupting double prevention. Pulling the trigger prevents the sear from preventing the spring from uncoiling, yes. But when the trigger does that, the sear has been preventing the spring from uncoiling for a long time. If the gun has been cocked for an hour before it is fired, then the sear has been preventing the spring from uncoiling for an hour. In interrupting double prevention, the process that produces the final event, in this case the spring uncoiling and smashing the striker into the back of the bullet casing, has been interfered with, held back, by something else, for some stretch of time, before something, here the pulling of the trigger, interrupts this interference; it prevents that preventer from continuing to hold it back.

Now here is my thesis: interrupting double prevention is causation, and blocking double prevention is not.

#### 3. Clarifications

Interrupting double prevention is not defined as double prevention that involves some interrupting (so in a way the terminology is less than ideal). When Newt's plane malfunctions, the malfunction interrupts his flight; but this is not a case of interrupting double prevention. Or consider this true case of double prevention:

Judge Tally heard that the Skelton boys were riding to another town to kill one Ross because Ross had seduced the Skeltons' sister. The Judge . . . heard that a warning telegram had been sent to Ross's town to alert Ross to the Skeltons' imminent threat. Tally sent a countermanding telegram to Ross' town, instructing the telegraph operator not to deliver the warning telegram. He did not; the Skeltons caught up with Ross and killed him. (Moore 2009: 68)

The process that aimed to prevent Ross's death began with the sending of the warning telegram and was well on its way before Judge Tally's telegram interrupted it, but this also is not a case of interrupting double prevention.

For interrupting double prevention what matters is not whether the doublepreventer interrupts something or other, but whether it interrupts an act that is preventing the "main process" from causing the ultimate effect. The malfunction does not interrupt any act of Newt's that is preventing Billy from destroying the target, simply because when the malfunction happens Newt is not preventing Billy from destroying the target. Similarly, in the Tally case at no point was anything—the warning telegram or the telegraph operator for example—succeeding in preventing, if only temporarily, the Skelton boys from killing Ross, and so the Judge's telegram did not interrupt any such act of preventing. I cannot interrupt your conversation if you are not yet talking.

There is a complication for my distinction: the so-called "broadness" of the progressive. If I am driving to the grocery store and you ask me why, I might reply that it is because I am making an omlette. And this could be a true thing to say, even though I am not in my kitchen and have not yet cracked any eggs. But if, even in the early stages of preparation, it can be true to say that I am making an omlette, then can it not also be true to say, when Newt is in flight but still miles out of range, that he is preventing Billy from bombing the target? I think the answer is "yes, but." There is a broad use of the progressive where "X is Ving" is true even when preparations have barely begun. But we also recognize a narrower use, as when we say, truly, "well, really you are going to make an omlette, but you haven't actually starting making it yet." Interrupting double prevention is when something has already—in the narrow sense begun preventing the main process from causing the ultimate effect, and the double-preventer interrupts this act of preventing. (There will, of course, be borderline cases between broad and narrow preventing, but that is true of any distinction.)

# 4. First Argument: Getting Examples Right

I have two arguments for my thesis. My first argument is that it gets the examples right. I have discussed two; here are two more.

Two pillars are leaning against each other, holding each other up. You push one of the pillars away, and the other falls. This is double prevention: you prevent the first pillar from preventing the second pillar from falling. And it is causation: your shoving the first pillar is a cause of the falling of the second (Paul & Hall 2013: 191). My thesis agrees, since this is interrupting double prevention. The first pillar was already preventing the second from falling before you acted. When you shoved it, you stopped it from continuing to prevent this.

Next is Bennett's heavy rain example:

There was heavy rain in April and electrical storms in the following two months; and in June the lightning took hold and started a forest fire. (1988: 222–23)

The rain is a double-preventer: it prevents the May lightning from preventing the June lightning from burning the forest. But the rain is not a cause of the fire. My thesis agrees, since this is blocking double prevention. When the rain falls, the May lightning has not yet started preventing anything (it has not even happened yet!). The rain prevents the lightning from even beginning to prevent anything.

There are many more examples of double prevention in the literature and I cannot survey them all. But here is a quick trip through a few more. First: a bullet prevents someone's heart from preventing their brain from dying from oxygen starvation. Second: some calcium prevents some tropomyosin from preventing a muscle fiber from contracting. Both, Schaffer (2000) says, are cases of causation; both are interrupting double prevention. Third: in *E. coli*, lactose inactivates a protein that represses the genes that produce the enzymes needed to metabolize lactose. Woodward says that this is causation and that genetics texts agree (2006: 35); it is also interrupting double prevention.

It is worth mentioning here that Woodward has his own hypothesis about double prevention. He holds that we judge double prevention to be causation when it is "stable": roughly, when the counterfactual dependence between the final effect and the double preventer would still hold, under a wide range of changes in circumstance. Note that this is a psychological claim about when we judge a case of double prevention to be causation, not (like my thesis) a metaphysical claim about when a case of double prevention is causation. However, Woodward's claim is still, if correct, a challenge to my thesis, assuming (as I do) that our judgments about cases of double prevention are by and large correct; for then my thesis entails that our judgments track the blocking/interrupting distinction, not the stable/unstable distinction.

Fortunately Woodward's claim is not correct. It entails that unstable interrupting double prevention will not be judged causation, but I submit that it will. Suppose, for example, that Suzy shoves pillar A, so that it stops supporting pillar B, which falls, but this time a backup-shover would have acted if (i) Suzy had not, and (ii) the room's temperature had been the least bit different. Suzy's shove both is and seems to be a cause of the falling. Woodward's claim, however, predicts otherwise, because the conditional "Had Suzy not shoved, the pillar would not have fallen," while true, is not stable; even tiny changes to the background temperature would make it false.

# 5. Supplement: Moral Differences

It at least seems true that doing something that causes a harm is morally worse than doing something, or omitting to do something, which has a harm as a noncausal consequence, at least when other things are equal; this is a version of the doctrine of doing and allowing (DDA for short). In the DDA "morally worse" might mean that causing harm has extra disvalue, or that causing harm is harder to justify, or something else; these differences will not matter. In a classic case, holding someone underwater so they drown is morally worse than standing by while they drown, when you could have saved them.<sup>3</sup> The DDA, if true, supports my thesis, since in moral badness harming through interrupting double prevention patterns with causing harm, and harming through blocking double prevention patterns with allowing harm. Compare a case where Suzy shoves pillar A so that it stops supporting pillar B, and pillar B falls on someone's leg, to a case where a pillar stands unsupported until an earthquake topples it and it falls on someone's leg, while at some distance Suzy intercepts a boulder that, left undisturbed, would have rolled in front of the victim and saved them. Suzy's act is morally worse in the first case than the second; and the first but not the second is interrupting double prevention and so a case of causation. Similarly, modify Newt's Failed Mission so that (1) Bomber Billy is a Bad Guy targeting a school and Newt is a Good Guy trying to stop him, and (2) Newt's plane explodes not because it malfunctions, but because Suzy shoots it down. Suzy is a blocking double-preventer of the destruc-

<sup>3.</sup> For defenses of the DDA see e.g., Foot (1978), and more recently, Moore (2009: 459). The drowning case is due to Rachels (1975). For the DDA as written to be plausible, standing by while someone drowns must not be a case where one's failure to save them (an omission) is a cause of their death. Some prefer to understand the DDA as the thesis that doing harm is morally worse than allowing harm, where causing harm is compatible with allowing it; see, e.g., McGrath (2003), who thinks that omissions can be causes.

tion of the school (and so not a cause), and what she does is less bad, morally, than Billy's act of dropping the bombs, which is a cause of the destruction.

The DDA is controversial, and I do not place great weight on an argument for my thesis that uses it. While this is not the place to survey the controversy,<sup>4</sup> it is worth noting that double prevention cases are often taken to be counterexamples to the DDA. Moore, for example, who supports the DDA but holds that double prevention is never causation, admits that shooting someone in the heart with a gun so that they die (the gun-firing is the relevant double-prevention) looks as bad, morally, as causing their death by, say, stabbing them in the heart (Moore 2009: 465).<sup>5</sup> Moore feels forced to amend the DDA, saying that being either a cause *or a "near-cause"* of a harm is morally worse than allowing it, where some cases of double prevention are near-causes and some are not; but he cannot define "near-cause" (Moore 2009: 465–66; Rosen 2011: 412). Given my thesis, no amendment is needed and the problem of definition is moot; the double preventions that Moore wants to say are near-causes are of the interrupting variety and so are bona fide causes.

A paper by McGrath is a mirror image of this dialectic (McGrath 2003). She holds that double prevention is always causation, but that some double preventions of harm nevertheless fail to be "makings" of harm, namely those that do not exhibit "causation by connection"; and again the DDA is amended, to say that it is makings that are worse than allowings. McGrath, however, cannot define "causation by connection." Inspection shows that she classifies only interrupting double prevention as causation by connection, so accepting my thesis would remove the need to amend the DDA.<sup>6</sup>

The status of passive euthanasia, however, is a problem. If machines are keeping an ill person alive in a hospital, and there is no prospect of their recovering, then (many think) disconnecting the machines, with death as the result, is easier to

<sup>4.</sup> The literature is huge; for a survey see Woollard and Howard-Snyder (2021).

<sup>5.</sup> We may set aside that in both cases the death involves (interrupting) double prevention at a later stage (as mentioned above): stopping their heart prevents it from preventing their brain from dying from oxygen starvation.

<sup>6.</sup> In the end, however, McGrath rejects the DDA. One more reference: Rickless argues that double preventing harm is (other things equal) only as bad as allowing harm, but tends to focus on cases of blocking double prevention, and so must make an exception for shooting someone with a gun; he says that when the double preventer "initiates a causal sequence" that leads to a harm (a concept he takes from Foot 1978), that is as bad as causing harm (Rickless 2011: 83). So far Rickless and I agree, since double preventers that initiate a causal sequence seem to be cases of interrupting double prevention (it is hard to say for sure since we are left with only our intuitive understanding of "initiating a sequence"). But the converse is false—in an example he uses (Rickless 2011: 81), if someone with a noose around their neck stands on a trap door that has begun breaking, but is held in place by a laser, and you turn the laser away so that the door finishes breaking and the person falls, that is interrupting double prevention that allows a pre-existing causal sequence to continue. I think this is morally on a par with paradigm cases of causing harm, though Rickless disagrees.

justify than injecting them with a (painless) poison. Assuming the DDA is correct, disconnecting the machines should be a way to allow the person to die, rather than a way to cause their death. But passive euthanasia is interrupting double prevention, and so on my view is causation. A possible response: the DDA says causing harm is worse *other things being equal*, and here other things are not equal. When through an act of double prevention you return someone to a "morally appropriate baseline," then your act is morally on a par with allowing a harm, even if, metaphysically, it is a cause of a harm. An agent returns someone to a morally appropriate baseline if (i) "by doing what he did the actor was only returning the victim to the state she would have been in had the defense [e.g., the life-saving machines] never been provided to start with," and (ii) it would have been morally permissible to leave the victim in that state from the beginning (Moore 2009: 61).<sup>7</sup>

## 6. Second Argument: General Principles about Causation

The second argument for my thesis is a kind of meta-argument, concerning three arguments against double prevention being causation. Each argument has, as its first premise, a general principle about causation: that causation is local, or transitive, or that negative events cannot be causes or effects. The second premise, then, is that if double prevention is causation, then causation lacks the relevant feature (for example, the feature of being local). I will show that, in each argument, the second premise is true of blocking double prevention, but not of interrupting double prevention. These arguments, therefore, establish half my thesis: that blocking double prevention is not causation.<sup>8</sup>

What about my thesis's other half, that interrupting double prevention is causation? The fact that certain arguments fail to prove this false is no proof that it is true. Still, what I will say about the arguments is indirect evidence that it is true. If neither kind of double prevention is causation, then presumably the line I have drawn between them is irrelevant; the difference between them that I have isolated makes no difference to their causal status. But then one would expect arguments showing that blocking double prevention is not causation to show this for interrupting causation as well. So the fact that the arguments do not show this tends to confirm my thesis's second half.

The first two arguments are due to Hall (2000; 2002). The first one starts from the premise that causation is local in space and time, as long as we can ignore quantum mechanical weirdness. The spatial part of locality says that if C is a cause of E, then either C and E happen right next to each other, or there is a sequence of

<sup>7.</sup> This section owes a great deal to a referee's advice.

<sup>8.</sup> Doubts about these arguments' first premises will be addressed at the end of this section.

intermediaries  $C = X_1, X_2, ..., X_n = E$ , each event a cause of the next, where Xi and Xi+1 happen right next to each other. But if double prevention is causation, it is non-local causation: the malfunction of Newt's plane does not happen right next to the explosion of the target, or any event involving Billy's bombs, or any event involving Billy's plane.<sup>9</sup> The conclusion: double prevention is not causation.

But observe that Newt's mission is a case of blocking double prevention. In general, the argument is certainly right that, if blocking double prevention is causation, then at least some blocking double prevention is non-local causation. For in cases of blocking, the prevention of the would-be preventer can be far away in space from the process leading to the final effect (Billy's flight, leading to the explosion of the factory).

What about interrupting double prevention: does it threaten locality? It does not seem so. Look at the cases. In Schaffer's gun the preventing event, the trigger's pulling on the sear, happens where the sear is. And the sear is right next to the spring, and so right next to the uncoiling of the spring. And there is clearly a sequence satisfying locality's demands from the uncoiling to the firing of the bullet. It is the same with the two pillars: the pillar holding up the other pillar is right next to it. They are in physical contact. The preventing event, someone's pushing of the first pillar, happens where that pillar is; which happens right next to the fall of the second pillar. Locality is satisfied. It stands to reason that what goes for these examples goes for interrupting double prevention generally. In blocking double prevention the double-preventer can stop the would-be preventer far away from the main process, because a merely would-be preventer does not need to be anywhere near the main process. But by definition in interrupting double prevention the preventer is an actual, not a would-be, preventer; it spends some time holding back the main process. And if process X is holding back process Y it seems that it must be locally connected to Y. Similarly, the double-preventer must stop X from holding Y back, and doing this seems to require a local connection to X. This is too hand-wavy to be a proof that interrupting double prevention must be local, but I think it is somewhat persuasive.

Hall's second argument starts from the premise that causation is transitive: if C is a cause of D, and D a cause of E, then C is a cause of E. The second premise says that if double prevention is causation, then there are counterexamples to transitivity. The counterexamples are *short circuits*, which embed an instance of double prevention. In Figure 5 the firing of C, as usual, is the double-preventer: it prevents the firing of D from preventing the firing of E. The circled neurons constitute the short circuit: the firing of S both initiates a process (the S-B-D process) that threatens to prevent E from firing, and simultaneously initiates a process

<sup>9.</sup> A natural thought is, if we accept the existence of omissions, then there is a local (omissioncontaining) sequence connecting the malfunction to the explosion. Hall argues that this thought is false.

(the S-C process) that stops the first process before it can succeed. S cancels a threat that it itself launched; it short circuits. The firing of S is certainly a cause of the firing of C; if double prevention is causation, then the firing of C is a cause of the firing of E; but clearly the firing of S it not a cause of the firing of E.



Figure 5

It helps to think of an instance of this abstract structure. Suppose Suzy drops a tree branch above a bottle (A), and Billy, wanting to protect the bottle, starts running (S) to intercept it, but while running (B) he trips (C), and falls, and fails; the bottle breaks (E). The tripping prevents Billy from reaching the bottle (D), where he could have prevented the branch from breaking the bottle. If double prevention is causation, the tripping is a cause of the breaking. But the running is a cause of the tripping and not also—as transitivity requires—a cause of the breaking.

But observe that Billy's running and tripping is (another) case of blocking double prevention. In general, the argument is right that if blocking double prevention is causation, then counterexamples to transitivity can be constructed. What about interrupting double prevention: does it threaten transitivity? No. Double preventers threaten transitivity when they appear in short circuits, but only blocking double preventers appear in short circuits. When a process X is on its way to causing an event E, a short circuit both launches a process P that threatens to prevent X from causing E, and also interferes with P so that it never succeeds. But only blocking double preventers never succeed.

Try turning Billy's attempt to stop Suzy's branch into a case of interrupting double prevention, while keeping it a counterexample to transitivity. It cannot be done. Suppose Billy does not trip, but instead kicks a basketball, which caroms off a tree back toward him. He catches the branch for a moment, but then is hit by the ball and drops the branch, which continues on its way down and breaks the bottle. Billy's running is a cause of the ball's hitting him, which is a cause of the branch's falling (this is the interrupting double prevention), and the branch's falling is a cause of the bottle's breaking. For transitivity to fail, it would have to be that Billy's running is not a cause of the branch's falling (or the bottle's breaking). But it is. Interrupting double prevention does not threaten transitivity.

A third theoretical argument that double prevention is not causation uses the premise that omissions, or negative events, cannot be causes or effects. The other premise is that if double prevention is causation, it "runs through" an omission: it contains an omission that is both an effect and a cause (e.g., Dowe 2000; Moore 2009). Support for the second premise comes from looking at the standard neuron diagram for double prevention (Figure 6). Neuron C prevents Neuron D from firing; if D had fired, it would have prevented E from firing. If C's firing (the double-preventer) is a cause of E's firing, the idea goes, it is because it causes "neuron D's not firing," which is then a cause of E's firing.



Figure 6

This argument's second premise has been challenged. If one holds that counterfactual dependence between positive events is sufficient for causation, one can assert that the firing of C is a cause of the firing of E (in Figure 6), without feeling any pressure to say that D's not firing is a causal intermediary (e.g., Rosen 2011; Paul & Hall 2013). Still, in saying this, one is harnessing a litte bit of theory to resist a claim that pre-theoretically seems right. I want to say that the claim that seems pre-theoretically right, even if in the end one rejects it, is that *blocking* double prevention runs through an omission. With interrupting double prevention, the second premise does not even get off the ground. One should not even be tempted to think that interrupting double prevention runs through an omission.

The firing of a gun, for example, which involves interrupting double prevention, does not run through an omission. Before you pull the trigger, the sear is pushing against the spring, and a pushing is a positive event. When you pull the trigger, the sear stops pushing on the spring. This stopping pushing is then a cause of the spring's uncoiling. And a stopping pushing is a positive event; it is not an omission.

Why? First, while failing to push may be an omission, stopping pushing is not the same as failing to push. A stopping must be preceded by pushing, a failing need not. And second, changes are positive events, and stopping pushing is a change: a change from pushing to not pushing.<sup>10</sup>

One argument that all double preventions are the same, causally speaking, was that all are aptly represented by the same neuron diagram (Figure 6). But this discussion of omissions shows that to be false. The diagram in Figure 6 is only apt for blocking double prevention. In interrupting double prevention, the would-be preventer has already done some preventing, before the double-preventer stops it. But, as neuron diagrams are standardly read, neuron D in the diagram never sent any inhibitory signal to neuron E; it was never preventing E from firing.

Look back at how Schaffer labels his neuron diagram for the gun (Figure 4). The neuron labeled "sear up" sends no inhibitory signal to any neuron representing the spring. That makes the diagram wrong: when the sear is up, it is preventing the spring for uncoiling.

To sum up, my claim has been that three well-known arguments that double prevention is not causation are sound if, but only if, their second premises are restricted to blocking double prevention. I should say that the "if" part has received less defense from me than the "only if" part. I have said little about the arguments' first premises. While those premises have considerable intuitive appeal, they are controversial, and each has been rejected. The debate is too big to discuss here (see, e.g., Paul & Hall 2013 for a survey). Instead I will make two points. First, it is enough if one of those first premises is true.<sup>11</sup> Second, even if you think that all the principles fail to be universally true, you should still think that they are good rules of thumb, and you should regard it as suspicious that the rules fail with blocking prevention but not with interrupting double prevention. You should still regard what I have said about the arguments as some—perhaps less than decisive—evidence for my thesis.

<sup>10.</sup> On some views, the causal relata are facts rather than events (see, e.g., Mellor 1995). While proponents of these views tend to think omissions can be causes, this is not required. If facts are the causal relata, the thesis that omissions cannot be causes or effects presupposes a distinction between "positive" facts and "omission" facts; the thesis is that only the former can be causes or effects. The fact that someone failed to perform some act is a canonical omission fact; we need not look closer at exactly how the distinction is drawn. Translated into the framework of such a view, my claim is that the fact that something changed is always a positive fact. The argument in this section is similarly compatible with other claims about the nature of the causal relata.

<sup>11.</sup> Though, to be fair, the premises usually appeal as a package.

## 7. More on Double Prevention and Omissions

The third argument just discussed said that (i) omissions cannot be causes or effects, but (ii) if double prevention is causation it "runs through an omission." My main claim was that the second premise is true only for blocking double prevention.

This argument is dangerous. Even if (ii) is false for interrupting double prevention, it might nevertheless for some other reason be true that, if interrupting double prevention is causation, then an omission is a cause or effect. But this, combined with (i), would show that interrupting double prevention is not causation, and thus refute my thesis.

A referee suggested this argument, focusing on Schaffer's gun: if, as I claimed, pulling the trigger causes the sear to change from *pushing on the spring* to *not pushing on the spring*, then pulling the trigger also causes the sear to *not push on the spring*, which is an omission. Why believe this conditional? Because it seems to hold in other cases. For example, it seems true that if the rain causes the ground to change from dry to wet, then the rain causes the ground to be wet. So in general, if C causes x to change from A to B, then it causes x to be B.

This argument is not successful.<sup>12</sup> The example of the rain and the ground involves non-omissions (the ground's becoming, or being, wet). It is therefore consistent with the restricted principle: *if C causes x to change from A to B*, *then it causes x to be B*, *so long as x*'s *being B is not an omission*. The argument needs the unrestricted principle, but I see no reason to believe it.

I have doubts even about the restricted principle. This is certainly true: the rain caused the ground to change from dry to wet; and (therefore) the rain caused the ground to *become* wet. Is it really also true that the rain caused the ground to *be* wet? Once this later claim is distinguished from the obviously true "become wet" claim, its plausibility diminishes. There is theory to back this up. We should distinguish between events and states: if something changes (more generally, if something does something), an event happens, but if something is a certain way (wet, for example, or tall or red), then a state obtains but no event happens. It is events that can be causes and effects; states cannot. So it cannot be that the rain caused the ground to be wet, because the ground's being wet is not the sort of thing that can be caused.<sup>13</sup>

<sup>12.</sup> I observe, but set aside, the fact that the argument's target is quite large: it purports to show that if stoppings are effects, then some omissions are effects, not (just) that if interrupting double prevention is causation, then some omissions are effects.

<sup>13.</sup> For this theory of events and states, and for arguments against theories—like those of Lewis (1986) or Kim (1993)—that say that the ground's being wet is an event, see, e.g., Steward (1998) or Skow (2018). The referee also gave a second argument, which merits a shorter discussion. First premise: in general, a change, in x, from Aing to Bing, has x's Aing and x's Bing as parts; so, if the pulling of the trigger causes a change, in the sear, from *pushing on the spring* to *not pushing on* 

## 8. Conclusion

In conclusion, we can have our cake and eat it too. If A prevents B from preventing C from doing something, it might be that B had already started preventing C from doing something, when A stopped it; that is interrupting double prevention. Or it might be that B was a merely would-be preventer and had not started; that is blocking double prevention. When an example of double prevention looks like causation, that's because it is; it is a case of interrupting double prevention, and they are cases of causation. And when an example of double prevention does not look like causation, that's because it isn't; it is a case of blocking double prevention, and they are not cases of causation. Theoretical arguments about double prevention and causation—that double prevention cannot be causation, because causation is transitive, or local, or relates only positive events—actually show only that blocking double prevention suggests that it is causation.

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*the spring*, then the pulling of the trigger causes something with an omission as a part. But—second premise—if omissions cannot be effects, then omissions cannot be parts of effects either. Either premise may be rejected. Regarding the first, look at the temporal profile of the change. The change started right when the pulling did; but the sear's pushing on the spring had, by then, been going on for a long time. The pushing is not, therefore, part of the change. Regarding the second, under the supposition that omissions cannot be effects, I find "something with an omission as a part cannot be an effect either" no more plausible than "an effect must have some non-omission as a part."

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