

## Interactive, Inclusive Substance Dualism

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**Abstract** This paper argues that a certain kind of substance dualism can adopt the ‘Compatibilist’ solution to the problem of causal exclusion. After sketching a non-Cartesian substance dualism akin to E.J. Lowe’s account (e.g. Lowe in *Erkenntnis*, 65(1), 5–23, 2006, 2008) and considering its shortcomings with respect to mental causation in section one, section two outlines an alternative account of mental causation and argues that this account solves the exclusion problem. Finally, section three considers a challenge to the proposed solution. With the exception of Lowe’s efforts (*Australasian Journal of Philosophy*, 70, 263–76, 1992, 2003, 2006, 2008), very little in defense of substance dualist mental causation is to be found in the recent philosophical literature.

**Keywords** Substance dualism · Mental causation · Exclusion problem · Causal compatibilism · Emergent dualism

This paper articulates a substance dualist solution to the problem of causal exclusion. It argues that a certain kind of substance dualism can adopt the ‘Compatibilist’ solution that is popular among non-reductive physicalists. (See, e.g., Pereboom and Kornblith, 1991; Noordhof, 1997; Sider, 2003; Bennett, 2003) After sketching a non-Cartesian substance dualism akin to E.J. Lowe’s account (e.g. Lowe 2006, 2008) and considering its shortcomings with respect to mental causation, section two outlines an alternative account of mental causation and argues that this account solves the exclusion problem.<sup>1</sup> Section three considers a challenge to the proposed solution. With the exception of Lowe’s efforts (1992, 2003, 2006, 2008), very little in defense of substance dualist mental causation is to be found in the recent philosophical literature.<sup>2</sup>

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<sup>1</sup>The view is articulated further, given additional motivation, applied to other discussions, and compared to competitor theories (e.g. reductive and non-reductive physicalism) in Engelhardt 2015b.

<sup>2</sup>Bennett (2007: 317–322) considers the traditional problem of interaction and the pairing problem. Related issues are discussed briefly in Baker (2000) Zimmerman (2010) and Mackie (2011).

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## 1 Non-Cartesian Substance Dualism

Strictly speaking, “Non-Cartesian substance dualism” refers to any substance dualism that is not Descartes’ dualism. Descartes held that mind and body are separable substances, each of which is characterized by a distinctive feature which is absent in the other. Mental substance is thinking without extension while material substance is extended without thinking. Mental and physical properties are then modes of their respective substances: *believing*, *desiring*, and *intending* are modes of thought while *location*, *size*, and *velocity* are modes of extension. Thanks to this view of properties and the opposing, distinctive features of mental and physical substances, Cartesian minds instantiate no physical properties and bodies instantiate no mental properties.<sup>3</sup>

On the view that E.J. Lowe has dubbed “non-Cartesian substance dualism” (NCSD), *the self* is distinct from the body and from each of a body’s parts, but it is nonetheless extended in space. Lowe’s self-body relation, the relation of *embodiment*, is similar to a constitution relation. One may think that the statue of Achilles and the particular lump of clay constituting Achilles at a time are non-identical since the statue could survive the particular lump’s demise—as when a clay finger falls off and is replaced by a plaster replica. Still, the statue’s existence requires it to be constituted by *something*. According to NCSD, the embodiment relation may be similar: the self is not identical to the body, but its existence may require embodiment.

In differentiating between constitution and embodiment, Lowe claims that the self is simple—i.e. it has no proper parts—whereas statues of course have parts. Lowe draws on this claim to argue for his dualism. Since it is simple, all of one’s self is necessary for every one of an individual’s conscious thoughts and feelings taken separately; since it is not true of one’s brain that all of it is also necessary for *every one* of an individual’s thoughts and feelings taken separately, self and brain are discernible. (Lowe, 2006: 9–10; Lowe, 2008: 96).

Further, embodiment on Lowe’s view is unlike the standard constitution view in claiming not only that the self is *non-identical* to the body but that the two are *distinct*.<sup>4</sup> One might agree that the statue and the clay constituting it are non-identical without accepting that they are distinct.<sup>5</sup> There is of course much more to be said about constitution, embodiment, and distinctness, but it won’t serve our purposes to dwell on it. In what follows I accept that self and body are distinct substances.

The feature of the embodiment relation I would like to emphasize is that its relata *share properties*. Lowe tells us that since the self is extended in space, it possesses spatial properties that Cartesian minds do not—shape, size, location, etc. Further, the self shares these properties with its body necessarily:

<sup>3</sup> This way of characterizing Cartesian Dualism follows Lowe (Lowe, 2006: 6–7) so as to make perspicuous where Lowe deviates from the Cartesian view.

<sup>4</sup> While the cautious language on the matter of separability throughout Lowe 2006 suggests he wants to leave open the possibility that a self is inseparable from its body, I take his settled view to be represented in the later book *Personal Agency* (2008). There, he is explicit in accepting self-body distinctness. See, e.g., Lowe 2008: 93 “...the substance dualist *additionally* holds that the bearers of [mental and physical] properties are distinct...” And, he is explicit in accepting the possibility that a self could exist with a different body than that which embodies it at a time. See, e.g., Ibid 21 “...granted that I need *a* brain in order to be able to think, I don’t need to have the particular brain that I do have.”

<sup>5</sup> See, for instance, Pereboom (2002).

[The self and body] are so intimately related that they exactly coincide spatially at a given time and necessarily share, at that time, many of their physical properties, such as their shape, size, and mass. (Lowe 2006: 9; see also Lowe, 2008: 95)

As we will see below, I take this to be crucial to NCS D’s prospects for solving the exclusion problem.<sup>6</sup>

In considering substance dualist mental causation, then, I will assume a view according to which non-physical substances (selves, minds, souls, etc.) are spatially extended and coincident with some physical substances (at least at times). I won’t assume that mental substances are simple, but nothing said here will turn on this point. Unless I am speaking specifically about Lowe’s view, I will use “mind”, “mental”, and cognates to refer uniformly to non-physical substances, but I don’t intend this be a presumption against selves or souls—just a convenient shorthand for the candidates.

### 1.1 Causal Exclusion

In broad outline, the dualist’s problem of causal exclusion is that if my arm’s going up is caused by both an event involving a mental substance and an event involving a distinct physical substance, then it seems my arm’s going up is overdetermined. This overdetermination on its own might not be so bad, but it isn’t on its own. Rather, on a substance dualist account, *every* intentional human action is thus overdetermined. The overdetermination of intentional actions by mental and physical causes is built into the substance dualist worldview.

Why find this bothersome? Given that mental and physical substances are distinct, it would seem to be a coincidence anytime they bring about the same effect at the same time, just as it would be a coincidence if two independent murderers were to bring about the death of the same victim at the same time. If it were claimed that *every* murder is caused by two murderers acting independently, we should be skeptical, and we should want an explanation for the massive coincidence. Similarly, when the dualist tells us that *every* intentional action is caused by events involving distinct substances, we should be skeptical, and we should want to know why distinct substances so regularly converge on the same effects at the same times. The natural explanation

<sup>6</sup> See Engelhardt 2015a for discussion of how two substances may share a single property or property instance. There, I conclude that if the dualist accepts a states of affairs ontology, as in Armstrong 1997, there is no more difficulty in a single property instance being shared by two substances than in a single substance’s having two properties. The difficulty in understanding how two substances could possibly share a single property instance comes from presupposing an ontology according to which every property instance is metaphysically determined by an instantiating substance. With such an ontology, were two substances to share a single property instance, there would be two things determining the one property instance, each with a claim to fully determining the one instance’s nature. This would be problematic, but where the order of metaphysical explanation between substance and property is different, the problem doesn’t arise. If the property instances associated with an object fully metaphysically determine its nature, as on a bundle theory, then there is nothing confounding about saying that one property instance partly determines the nature of two different substances—just as there is no problem on the more familiar view of saying that one substance determines two properties. Similarly, where states of affairs join property instances and substances and are metaphysically prior to both, there is no reason why one property instance can’t be joined to two different substances in two different states of affairs, just as one substance can be joined to two different properties in two different states of affairs.

would seem to be that the substances are not in fact distinct, but this response isn't available to the substance dualist.

Taking these points with some plausible further claims, the problem of causal exclusion is often characterized as the following apparently inconsistent set of propositions:

**Distinctness:** mental causes are distinct from physical causes.

**Completeness:** every physical effect has a sufficient physical cause.

**Mental efficacy:** at least some mental causes have physical effects.

**Overdetermination:** intentional actions are not systematically overdetermined.

**Exclusion:** no effect has more than one sufficient cause unless it is overdetermined.<sup>7</sup>

Although this is how the problem is most commonly formulated in the literature (Block, 2003; Bennett, 2008; Wilson, 2009, 2011; Engelhardt 2015a), Lowe characterizes the problem somewhat differently. Instead of **Completeness** (which, arguably, has overwhelming empirical support<sup>8</sup>), Lowe invokes the claim that “the domain of physical events is *causally closed*” (Lowe, 2006: 11, Lowe’s emphasis):

**Causal closure:** no chain of causation can lead backwards from a purely physical effect to antecedent causes some of which are *non-physical* in character. (Ibid: 11; cf. Lowe, 2008: 100)

**Causal closure** is obviously much stronger than **Completeness**. On its own, the latter is consistent with **Mental efficacy** and **Distinctness** while the former is not. Thus, as Lowe understands the problem, **Overdetermination** and **Exclusion** are unnecessary. If physical effects cannot have non-physical causes and mental causes are non-physical, then mental causes cannot have physical effects.

That said, I propose that whatever support **Causal closure** enjoys comes from **Completeness**, **Overdetermination**, and **Exclusion**. Assuming that intentional actions are physical effects, if we take the latter three propositions together, they prohibit intentional actions from having systematic, sufficient non-physical causes. For, if intentional actions did have systematic, sufficient non-physical causes, then they would be systematically overdetermined (by **Exclusion** and **Completeness**), but they aren't systematically overdetermined (by **Overdetermination**). In assessing Lowe’s account of mental causation and proposing an alternative, I will assume that this is indeed the best way to motivate **Causal closure** as Lowe understands it.

For considerations of space, I’ll review Lowe’s attempted solution only briefly. Lowe proposes that **Causal closure** is false for *facts*: not every physical fact, he says, has purely physical causes; consequently, some physical facts may have non-physical causes. Lowe then proposes that while physical events cause particular intentional movements, a mental cause brings about the fact that some intentional movement or other has occurred. “Intentional causation is *fact* causation, while bodily causation is *event* causation.” (Ibid: 16, Lowe’s emphasis; cf. Lowe, 2008: 110).

<sup>7</sup> Since Bennett (2008) argues that the dualist cannot solve the exclusion problem, I have followed her formulation.

<sup>8</sup> See Papineau (2001). Lowe claims that the empirical evidence usually cited (concerning conservation of energy) is irrelevant to mental causation (Lowe, 2008: 41–2, 57), but he offers very little argument, so I suggest it is better to defer to the majority view here.

As Lowe acknowledges, this solution works only if **Causal closure** is false for physical facts; and yet, he offers no argument against a fact-causation version of **Causal closure**. Instead, he claims that an argument against NCSA that uses a fact version of **Causal closure** simply begs the question against him.

To assert that any cause of anything physical must itself be physical is equivalent to asserting that no cause of anything physical can be non-physical, which directly contradicts the interactive dualist's claim that something physical may have a non-physical cause. A 'causal closure argument' that appeals to a principle of causal closure which is itself *inconsistent* with interactive dualism amounts, in effect, to nothing more than this: *P*, therefore not not-*P*. (Ibid: 21, Lowe's emphasis)

It's quite dubious, however, that **Causal closure** is true for events but false for facts. Now, I myself am skeptical of **Causal closure** for events, but recall that Lowe grants it. Presumably, what he thus grants is that the success of physics has given us sufficient reason to accept **Causal closure** for events. But if this was established by empirical investigation, *prima facie* it was established by empirical investigation into both events and facts. It doesn't appear that physics is the study of physical events *but not of physical facts*. If **Causal closure** is granted for events, then, the presumption should be in favor of **Causal closure** for facts as well. Lowe needs us to reject this presumption, but he does not offer us any reasons to do so.

Worse, Lowe's solution requires us to reject a version of **Completeness** that applies to facts. If mental causes are to bring about physical facts without any 'competition' from physical causes, it can't be that every physical fact can be explained completely by reference only to other physical facts. But given that **Completeness** holds for events, this is dubious. *Prima facie*, for every physical event, there is at least one physical fact, viz., the fact that the event occurred. Thus, since Lowe grants that physical causes are physical events, he should grant that there is a physical fact for every sufficient cause of a physical effect; and, of course, one such fact for every physical effect as well. That is, for any physical effect, *e*, and its sufficient physical cause, *c*, there is the physical fact that *c* occurred and the physical fact that *e* occurred. Furthermore, since *c* causes *e*, it should be that the first fact explains the second—where the explanation is backed by the causal relation. This line of reasoning is both consistent with Lowe's view and exceedingly plausible; I take it, then, that **Completeness** holds for fact causation as well as event causation.

If this is right, then Lowe leaves unsolved the exclusion problem as we initially sketched it. If mental causes suffice to bring about physical facts, then since every physical fact also has a sufficient physical cause, the effects of mental causes shall have two sufficient causes. But, by **Exclusion**, no effect has more than one sufficient cause unless it is overdetermined. The effects of mental causes are thus systematically overdetermined. But, of course, the effects of mental causes are intentional actions, and **Overdetermination** tells us that intentional actions are not systematically overdetermined. In other words, Lowe has not solved the problem of causal exclusion for substance dualism.

Perhaps there is an account of the difference between fact causation and event causation Lowe could've given to circumvent these difficulties and answer them. Unfortunately, however, he gives us little guidance for understanding the distinction, and as it is, these problems seem to arise. Perhaps the obscurity of the distinction is at the heart of the problems here. Perhaps clarity would solve these problems. The dualist

should either clarify the distinction or look elsewhere for a solution. I propose the latter.<sup>9</sup> The next section gives an account of substance dualist mental causation that does solve the problem of causal exclusion. Rather than use Lowe's distinction between event causation and fact causation, the solution given here shows that NCSD can solve the exclusion problem for event causation.

## 2 Compatibilism

Causal Compatibilism is by far the most popular solution to the problem of causal exclusion. (See, for example, Pereboom and Kornblith, 1991; Noordhof, 1997; Sider, 2003; Bennett, 2003; Marras, 2007; Engelhardt 2015c) In terms of the formulation given above, it denies **Exclusion** on grounds that if an effect's two sufficient causes are not independent, then that effect is not overdetermined.<sup>10</sup> Consider a baseball and its parts. A baseball may not be identical to the atoms composing it, but they aren't independent either; further, it's plausible that when one breaks a window, each does. Finally, when each breaks the window, it doesn't seem that the window's breaking is overdetermined. The Causal Compatibilist proposes that this is thanks to the dependence relation between a baseball and its parts: the composition relation explains why they both break the window at the same time. Thus, if the mental and physical causes of intentional actions bear a similar dependence relation, intentional actions may have non-identical mental and physical causes without being systematically overdetermined. According to the Causal Compatibilist, solving the exclusion problem is then a matter of finding a suitable dependence relation/explanation.

### 2.1 Compatibilist Dualism

Can the non-Cartesian substance dualist be a Causal Compatibilist? It seems so. Recall that on Lowe's view, if body *b* and self *s* stand in the *embodiment* relation at a time, then *b* and *s* necessarily share "many of their physical properties" at that time. We should like to know, of course, which physical properties are included in the many, but it's clear what an advocate of NCSD *should* say: it's at least those properties that are causally relevant to bringing about intentional actions.<sup>11</sup> That is, if self *s* is embodied in body *b*, then if *s* performs intentional action *e* and property instance *P* is causally relevant to causing *e*, then necessarily *b* and *s* share the instantiation of *P* at that time. Thus if *b* is *P*, it's necessary that *s* is *P* too, so it is no coincidence that *b* and *s* are both *P* at the same time. Moreover, since this is the case for every physical property that is

<sup>9</sup> I'd like to thank an anonymous referee for this journal for pointing out to me that my criticism plausibly takes root in the obscurity of the distinction.

<sup>10</sup> I say that the effect isn't overdetermined, but some may prefer to say that the effect *is* overdetermined—it just isn't *problematically* overdetermined. The difference is merely terminological, and the reasoning here may easily be translated from its present "isn't overdetermined" idiom into an "isn't *problematically* overdetermined" sibling without loss of argumentative force.

<sup>11</sup> Why might it be that self and body share these properties? Insofar as I'm focusing on how dualists might solve the exclusion problem in this paper, I would like to leave it open for different dualists to secure this claim in different ways. One way to do it is to accept that self and body share *all* physical properties. This is plausibly the position that's most easily defended. Other ways may turn on the nature of selves or of the embodiment relation, but there isn't room here to survey the relevant possibilities.

causally relevant to an intentional action, it is no massive coincidence that *b* and *s* regularly bring about the same intentional actions: the embodiment relation explains the apparent coincidence. Thus, the view here ‘reduces’ the mental properties involved in causation to physical properties.<sup>12</sup> The view is nonetheless dualist for at least three reasons. First, not *all* mental properties reduce to physical properties on this view. Mental properties that aren’t causally relevant to intentional actions may be irreducible. For standard reductivists, by contrast, all mental properties reduce to physical properties. Second, since the reduced mental properties on this view are (also) properties of a non-physical substance, they aren’t the sort of reduced properties that reductive physicalists usually countenance. Reductivists would presumably reject the claim that there can be ‘physically reduced’ properties belonging to non-physical substances. This is a claim distinctive to non-Cartesian substance dualists. Third, and most obviously, this view is dualist because it’s *substance* dualist. It posits non-physical substances.<sup>13</sup>

Compare this approach to Compatibilism with Jessica Wilson’s. For Wilson, mental and physical properties stand in the determinate-determinable relation, the relation that *being scarlet* and *being maroon* both bear to *being red* but not to one another. The relation holds by virtue of the causal powers with which mental and physical properties are associated. Where physical property *P* is a determinate of mental property *M*, the powers associated with *M* are a proper subset of the powers associated with *P*. As a result, when Sally instantiates *P*, she comes to have the powers associated with *P*; and with those powers, she thereby has the powers associated with *M*. Importantly, each of the powers associated with Sally’s instance of *M* is numerically identical to a power associated with *P*. Thus, when *M* and *P* are both causally responsible for some action, it’s not the case that there are duplicate causal powers involved in bringing the action about.

...on any given occasion whereby a determinable instance enters into producing an effect, this production involves the manifestation of numerically the same power as that had by its determinate instance. (Wilson, 2012: 7; see also 2011: 8–9)

Although there are two properties involved in bringing about the effect, Wilson denies that the effect is overdetermined. After all, only one power is involved.

I hope it’s obvious that the non-Cartesian substance dualist can adopt analogous reasoning. Where *b* embodies *m*, *b* and *m* will share property instances responsible for bringing about intentional actions. Thus, whenever mind *m* is involved in producing an action, this production involves numerically the same property instance as that which is involved in body *b*’s producing that action. Although there are two substances involved in producing the action, then, there is only one property instance responsible. If Wilson’s mental causes don’t overdetermine their effects, then, neither should the non-Cartesian

<sup>12</sup> As such, it won’t satisfy Lowe’s commitment that “in order to qualify as a genuine *substance* in its own right, a self or person must...possess some distinctive and independent causal powers...” (Lowe, 2008: 99) The causal powers here given to minds will not be distinctive or independent. As I see it, mental substance is still deserving of the name because it may be the bearer of other sorts of distinctive and independent properties, e.g. phenomenal properties. (Cf. Zimmerman 2010) That is, this view isn’t reductive because it doesn’t reduce *all* mental properties to physical properties. Moreover, the reductivist view is incompatible with Lowe’s claim that the self is simple; the present view is compatible with it. For an extended comparison of the present view and reductive physicalism, see Engelhardt 2015b, section 3.

<sup>13</sup> Thanks are due to an anonymous referee for this journal for pushing me to be clear here about how this view is dualist.

dualist's. The dualist here is a Causal Compatibilist. Let me make the analogy more explicit. In Wilson's view, two properties—one mental, one physical—share the one causal power involved in a case of mental causation. In the view on offer here, two events—one mental, one physical—share the one property instance that is causally relevant to a case of mental causation. Both theories posit simultaneous causes—one mental, one physical—that share an element involved in mental causation. If this reasoning is permissible for a non-dualist like Wilson, it should be acceptable for a dualist as well.

## 2.2 The Counterfactual Test for Overdetermination

Karen Bennett, however, has argued that the dualist can't avail herself of the compatibilist solution. (Bennett 2008)<sup>14</sup> After all, the dualist thinks that minds and bodies are independent substances, and the dependence of mind on body is exactly what makes Compatibilism work. As Bennett sees it, the Compatibilist solution involves two steps, and the dualist can't take both. First, the Compatibilist gives a necessary condition on overdetermination; second, he shows that mental causation on his theory does not meet the necessary condition. According to Bennett, the dualist might accept the Compatibilist's necessary condition on overdetermination, but she, the dualist, can't show that mental causation on her view fails to meet that condition. After giving the condition as Bennett clarifies it, I'll argue, contra Bennett, that NCSD mental causation fails to meet it.

As we have seen, the guiding idea behind the Compatibilist's necessary condition on overdetermination is that overdetermining causes are independent. In an effort to clarify the intuition, Bennett provides a test for overdetermination such that independent causes pass the test while dependent causes do not. Thus, an effect is overdetermined only if<sup>15</sup> its causes 'pass' the test, and what the dualist wants is for her causes to 'fail' the test.

The test asks whether each cause would have brought about the effect in the absence of the other. Consider a firing squad case of overdetermination. Prima and Secunda both fire at the condemned dictator at noon, each shoots to kill, and each is an expert shot. A common intuition is that what makes the dictator's death overdetermined is that each shot would have killed him even if the other cause of his death had not occurred. According to the intuition, if it's not true that each shot could have occurred without the other and would have been fatal in the absence of the other, then it's not true that the death was overdetermined. Bennett proposes to capture this intuition in the following counterfactuals.

[O1] Had  $c_1$  occurred without  $c_2$ ,  $e$  would still have occurred.

[O2] Had  $c_2$  occurred without  $c_1$ ,  $e$  would still have occurred. (Bennett 2003: 476)<sup>16</sup>

The question is whether  $c_1$  and  $c_2$  overdetermine  $e$ . According to the test, unless both counterfactuals are nonvacuously true, they don't. If  $c_1$  caused  $e$  and  $c_2$  didn't, then  $e$  wasn't overdetermined and O2 will be false. If  $c_1 = c_2$ , then  $e$  wasn't overdetermined by just the one cause, and both O1 and O2 will be vacuous.

<sup>14</sup> Bennett plausibly has *property dualism* in mind, but prima facie, her concerns generalize to substance dualism—they certainly apply to *Cartesian* substance dualism.

<sup>15</sup> But not necessarily *if*—this is a necessary condition; Bennett doesn't commit to its sufficiency.

<sup>16</sup> Bennett is clear that in endorsing this test, she is not endorsing a counterfactual account of causation—only a counterfactual necessary condition for overdetermination.



Before putting the test to Compatibilist use, we should discuss how to interpret the counterfactuals. Bennett argues that we should use neither ‘backtracking’ nor ‘replacement’ interpretations; rather, we should use ‘deletion’ readings. On a backtracking interpretation, one gives a reason why the absent cause fails to occur and builds this reason into the evaluation of the counterfactual. For instance, if  $c_1$  is Prima’s gunshot and  $c_2$  is Secunda’s, a backtracking reading of O1 (“if Prima had shot and Secunda hadn’t...”) might suppose that Secunda is such a professional that she would have failed to fire only if something extremely unsettling had happened, so it must be that something extremely unsettling occurred; and then, supposing that something unsettling had indeed happened and Prima had still fired, we take it that Prima would have been unsettled, and so, we conclude, her shot would have missed the dictator. But if this is how we read O1, it comes out false: had Secunda failed to fire, Prima’s shot wouldn’t have killed the dictator. But then, the classic case of overdetermination isn’t a case of overdetermination after all, which can’t be right. So instead of ‘backtracking’ to account for  $c_2$ ’s absence, we should imagine a world just like the actual world except that  $c_2$  is gone. In this, the ‘deletion’ world, Prima shoots just as she did and Secunda’s shot is simply *deleted*; in which case, of course, the dictator still dies, so O1 comes out nonvacuously true. (Bennett 2003: 477–8).

Similarly, once we’ve deleted something, we shouldn’t *replace* it. We shouldn’t add a cause that didn’t appear in the original situation. Consider a multiply realizable mental property M that is realized by physical property P1 in the actual world and by P2 in the nearest world from which P1 is absent. When we use O1 and O2 to decide whether M and P1 overdetermine some effect e, and we ask about the case in which M occurs and P1 doesn’t, Bennett says we should not *replace* P1 with P2. “When you are supposed to imagine  $c_1$  gone, you imagine it *gone*.” (Ibid: 482, Bennett’s emphasis) We should see if we can imagine M occurring without P1 *and without any replacement for P1*.

Bennett’s concern is that replacement readings give false positives. Suppose that the members of the firing squad are lined up in two rows behind Prima and Secunda; if Prima’s shot isn’t fatal, the person behind her is instructed to fire; if his shot isn’t fatal, the person behind him is given the command; and so on, with the same instructions given to the line with Secunda at front. And suppose that in this case, Prima and Secunda fire together but Prima’s shot misses the dictator entirely. If we want to know whether the dictator’s death is overdetermined by Prima’s and Secunda’s shots, we ask whether the dictator still would have died if Prima had shot and Secunda hadn’t. Of course, since we’re supposing here that Prima’s shot missed the dictator, it can’t be that he still would have died just from Prima’s shot. So the counterfactual should come out false. But if we permit a replacement reading of the counterfactual, when we ‘delete’ Secunda’s shot, we replace it with the shot fired by the person behind her in line. If this shot would have been fatal, then even if Secunda’s shot hadn’t occurred and Prima had missed him, the dictator still would have died. Thus, if we use the replacement reading, the counterfactual comes out nonvacuously true. But this isn’t right, and the replacement reading is to blame. No replacement readings.

With these counterfactuals and guidelines for interpreting them in hand, Bennett outlines the Compatibilist strategy for showing that mental causes do not overdetermine their effects. As Bennett sees it, the Compatibilist approach should depend on how one conceives of causal sufficiency: strictly or permissively. On a strict conception of causal sufficiency, what is causally sufficient for an effect includes background conditions and

causal intermediaries as well as what we usually think of as a cause, viz., a particular event. If one thinks of causal sufficiency this way, then the physical cause that we should plug into the counterfactuals should include a neural event in a functioning brain, a functioning body, and an environment that causally interacts with the functioning brain via perceptual apparatus. If the physical events we test are like this, then O2 will come out vacuous for many non-reductive physicalists, since they think these sorts of broad conditions necessitate mental properties in the individuals involved. On a permissive conception of causal sufficiency, on the other hand, the physical causes we test will just be particular events, perhaps localized to a brain. On this understanding of causal sufficiency, O2 will come out false. For a neural event in a petri dish won't bring about an intentional action. Thus, if mental causes depend on physical causes in the way non-reductivists claim, the two shall not together overdetermine intentional actions—because they make O2 either vacuous or false. (Bennett, 2003: 490).

Consider proper parthood. Let mental property M be a proper part of physical property P, such that P's instantiation guarantees M's instantiation, and let both be instantiated by individual b at time t. If we take a property exemplification account of events (see, e.g., Kim 1993), we thus have two events,  $\langle b, P, t \rangle$  and  $\langle b, M, t \rangle$ . Suppose each causes an intentional action, e; we now ask whether they make both of Bennett's counterfactuals nonvacuously true. If they do not, they don't overdetermine e.

- [O1] Had  $\langle b, M, t \rangle$  occurred without  $\langle b, P, t \rangle$ , e would still have occurred.  
 [O2] Had  $\langle b, P, t \rangle$  occurred without  $\langle b, M, t \rangle$ , e would still have occurred.

Since P guarantees M, the antecedent of O2 cannot be true. If b instantiates P, b thereby instantiates M. Thus, O2 is true only vacuously. And thus, according to Bennett's test,  $\langle b, P, t \rangle$  and  $\langle b, M, t \rangle$  do not overdetermine e. If mental properties are proper parts of physical properties, it seems that mental causes do not overdetermine their effects. More generally, Compatibilists claim that mental and physical causes are necessarily related, so that one or the other counterfactual comes out vacuous and intentional actions are not systematically overdetermined.

Can the dualist adopt Bennett's strategy? Bennett says no. She claims that since the dualist denies that physical properties necessitate mental properties, the dualist cannot claim that O2 ("had the physical cause occurred without the mental cause...") comes out vacuous on the strict conception of causal sufficiency. (Bennett 2008: 290) Further, claiming that O2 comes out false would seem to violate **Completeness**. What about O1, the case in which the mental cause occurs without the physical cause—might the dualist say it's false or vacuous? Bennett doesn't think so.

She [the dualist] will not claim that it [O1] is either vacuous or false. She will not claim that it is vacuous, because she thinks that *m* [the mental cause] can indeed happen without *p* [the physical cause]. It can certainly happen without *p* in particular, and she will also think that it can happen without any physical realizer at all. Even physicalists, recall, usually think that physicalism is contingent. Cartesian souls are possible, just not actual; worlds where they exist are worlds in which physicalism is false, and mental properties can be instantiated without being physically realized. And the dualist will not want to say that (O1) is false, either. Doing so certainly appears to undermine the claim that *m* is causally

efficacious with respect to *e*. To say that (O1) is false is to say that if *m* were to happen without *p*, *e* might not occur. But that suggests that *p* is required, that *m* is not in fact good enough to do the work. (Bennett 2008: 289)

If Bennett is right, then while it might have appeared above that the dualist can be a Compatibilist, we see with the aid of Bennett's counterfactuals that this is not so. The dualist cannot take the Compatibilist solution.

But while these points may apply to the *Cartesian* dualist, things are different for the non-Cartesian. First, the non-Cartesian should not accept that deleting the mind from a minded body leaves the body's physical properties intact. After all, some of the non-Cartesian mind's properties *are also* the body's properties. If the mind is deleted, some of the body's properties are deleted too. In particular, since the dualist's mental and physical causes share their property instances, deleting a mental cause also deletes a property instance that partly constitutes a physical cause.

Thus, consider two events, a mental substance *m* instantiating property *P* at time *t*,  $\langle m, P, t \rangle$ , and a physical substance *b* with the same instantiation of *P* at time *t*,  $\langle b, P, t \rangle$ . If the mental cause is deleted, so is its instance of *P*. If that instance of *P* is deleted, the physical cause won't occur either—its would-be constitutive property has been deleted. Is it *possible* for the physical cause to occur? That is, can the antecedent of O2 be true when we substitute in these two causes? It seems not. For, property exemplification events are individuated partly by their constitutive properties, and since  $\langle b, P, t \rangle$  has *P* as its constitutive property, it can occur only if an instance of *P* occurs. But if we consider a case in which *b* instantiates *P* to make the antecedent of O2 true, then we are *replacing* the deleted instance of *P* with something very similar—indeed, something as similar as we can get. But this is a replacement reading of the counterfactual, and those are forbidden. Thus, it looks like it is open to the non-Cartesian dualist to say that O2 is vacuous and thus to be a Compatibilist.

You might now suspect that something fishy is going on. The non-reductive physicalist's vacuity claim rests on the claim that physical properties necessitate mental properties, but the dualist denies this. How can the dualist justify the vacuity of O2 without this necessitation relation? The answer has three parts. First, the compatibilist dualist doesn't accept that there's a necessitation relation between the property involved in an embodied mind's causing an intentional behavior and that property involved in a minded body's causing the numerically same intentional behavior. For the compatibilist dualist denies that there are two property instances in this case between which any relation may hold. There is, rather, only the one property instance, i.e. the physical property instance relevant to causing the behavior. Second, this doesn't 'reduce' the token mental cause to the token physical cause; there are two causes for the compatibilist dualist since the two causing events are partly constituted by different individuals. The token mental cause is partly constituted by a self or mind; the token physical cause is partly constituted by a body. Since events are partly individuated by the individuals that partly constitute them, these token events are non-identical. Third, still, as long as this mind/self and body stand in the embodiment relation, it holds by necessity that a mental cause of an intentional action occurs if and only if a physical cause of an intentional action occurs, and in these cases the two causes are both partly constituted by one and the same physical property instance.

Consider again a mental substance  $m$  instantiating property  $P$  at time  $t$  and a physical substance  $b$  with the same instantiation of  $P$  at time  $t$ .

[O1] Had  $\langle m, P, t \rangle$  occurred without  $\langle b, P, t \rangle$ ,  $e$  would not have occurred.

[O2] Had  $\langle b, P, t \rangle$  occurred without  $\langle m, P, t \rangle$ ,  $e$  would not have occurred.

If  $b$  embodies  $m$ , then since it's necessary that  $b$  and  $m$  share  $P$ , it's impossible for either to instantiate  $P$  without the other. Delete one and the other goes with it. Both counterfactuals come out vacuous, and the NCS account of mental causation clearly fails the test for overdetermination. NCS mental causes do not overdetermine their effects, then. Where a mind and body are in 'substantial union', it is not the case that either could bring about an intentional action in the absence of the other.

These considerations make most sense on Bennett's permissive conception of causal sufficiency. Or, rather, they make most sense on conceptions of causal sufficiency that don't include events outside of an agent's body in the causal antecedents of intentional actions. If the physical property that's relevant to bringing about an intentional action is instantiated by a body, then the dualist may say that the body's mind instantiates this same property. In this case, both counterfactuals come out vacuous, as claimed above—the body has the property if and only if the mind does. If the relevant physical property is instantiated by more than just a body, however—if the causal sufficiency conditions are taken to be strict and thus to require features of the body's environment as well—then it's less plausible that the body's mind instantiates the same property. One might try to make sense of how a mind could instantiate the broad, strictly sufficient physical property, but it's not necessary for a dualist solution to the exclusion problem. If what's causally sufficient for an intentional action involves more than a body, the dualist may give up her claim that mental substances themselves instantiate physical properties that are causally sufficient for intentional actions. Instead, she can accept that minds make the same contributions to bringing about intentional actions that their bodies do. In this case, if the events we plug into the counterfactuals are simply each substance, mind and body, instantiating a physical property, then both counterfactuals will come out false. Neither a body instantiating some property nor a mind doing the same is sufficient for an intentional action on Bennett's strict conception of causal sufficiency.

If we're to use the strict conception of causal sufficiency in our test, then, we've got to include environmental features when considering both the mental cause and the bodily cause. Let's use "E" to refer to all the individuals outside a body that together with the body jointly instantiate a (very complex) property  $P$  that is strictly sufficient for bringing about an intentional action. The physical cause of the intentional action, then, will be the body and  $E$  instantiating  $P$  at a time,  $\langle (b, E), P, t \rangle$ . (Let the parentheses indicate that what they enclose are together the event's constitutive substances.) Likewise, the mental cause will be the mind and  $E$  with the same instantiation of  $P$  at the same time,  $\langle (m, E), P, t \rangle$ . Notice, then, that although mental substances themselves don't instantiate physical properties that are strictly sufficient for intentional actions, it remains true that mental *causes*, which include parts of a mind's environment, have the very same instantiations of physical properties that bodily causes do. The reasoning produced above still applies, then. If  $b$  embodies  $m$ , then  $b$  and parts of its environment instantiate a property  $P$  sufficient for an intentional action if and only if  $m$  and parts of its environment have the same instance of  $P$ . Hence, again, both

counterfactuals in Bennett’s test come out vacuous: the bodily cause of an intentional action occurs if and only if the mental cause occurs as well.

I conclude, then, that the non-Cartesian dualist can indeed adopt the Compatibilist strategy for solving the exclusion problem. Call the dualist view that accounts for mental causation this way “Compatibilist Dualism”.

### 3 An Objection and a more Traditional Dualism

But still something seems wrong. The dualist posits that minds are substances distinct from bodies. If a mind were to become disembodied or a body were to become mindless, wouldn’t mental and physical causes of intentional actions *then* occur without one another? Doesn’t the dualist think that a mindless body can cause intentional actions in the absence of mental causes? And if so, won’t such cases make one of the counterfactuals nonvacuously true for the dualist?

One might spell this objection out by claiming that the dualist has misinterpreted the counterfactuals. The events used in the test above necessitate one another *only if we hold the embodiment relation fixed*. But we shouldn’t hold it fixed; rather, we should take it that O2 is vacuous only if it is metaphysically impossible for a physical event like  $\langle b, P, t \rangle$  or  $\langle (b, E), P, t \rangle$  to occur without an accompanying mental event. The non-Cartesian dualist doesn’t have strong grounds for claiming that a mindless body can’t instantiate the sort of property that brings about apparently intentional actions. But if bodies (or bodies along with their environments) can instantiate such properties and this is the right way to evaluate the counterfactuals, then the dualist can’t claim that O2 is vacuous.

Before responding to the objection, I should note that it doesn’t sink the dualist even if it succeeds. For the dualist’s causes ‘pass’ the overdetermination test only if *both* counterfactuals come out nonvacuously true, and the threat here is only that *one* of them will. The dualist may still say that O1 is vacuous on grounds that a mind can’t instantiate physical properties—and thus there can’t occur mental causes of intentional actions—without a body.

But some dualist might claim that minds and bodies are separable and perhaps that disembodied minds can have physical properties; Lowe himself seems to have left it an open possibility. (Lowe 2001, 154) It is certainly a matter of interest whether such a view might still adopt Compatibilism. Let me consider, then, a non-Cartesian dualist view on which (A) embodied minds share physical property instantiations with their bodies, but (B) it’s also metaphysically possible for a disembodied mind to instantiate physical properties relevant to bringing about intentional actions. Call this “Independence Dualism”. If one holds this view and we evaluate the counterfactuals in the way suggested just above, then O1 won’t come out vacuous either. Both O1 and O2, it seems, come out nonvacuously true, and so the effects of mental causes are overdetermined for the Independence Dualist. It would seem, then, that it doesn’t solve the exclusion problem simply to show that mental and physical causes necessitate one another *provided the physical substance involved embodies the mental substance involved*. Where mind and body are separated, each causes intentional actions on its own.

Can the Independence Dualist answer this objection? I think her options are unattractive, but I also think the objection is too strong: it undermines the Compatibilist position itself. For it requires that when we read the counterfactuals, we consider possibilities in which the Compatibilist’s explanatory relation—the relation that

explains the apparent coincidence in the apparent overdetermination—is broken. Call these “relation-breaking readings”. In testing for overdetermination, they ask what *would have been possible* if the causes under consideration hadn’t been related in the way they were in actuality. I’ll argue that the relation-breaking reading of the test is too strong (1) because it undermines Compatibilism and (2) because when we test for overdetermination we ought to be testing the explanations backed by the relations that such readings ask us to break.

(1) Suppose Lefty is a proper part of a baseball called “Homerun”; if Homerun occurs, so does Lefty. Allegedly, one of the overdetermination counterfactuals comes out vacuous for Lefty and Homerun. But the relation-breaking reading asks us to consider what is possible *if* we break the proper parthood relation. What if Lefty had not been a proper part of Homerun: could Homerun then have occurred without Lefty? It’s a safe assumption that, yes, a baseball can occur in the absence of some other thing that is not one of its proper parts. In general, if *o* is an object and *p* is not a part of *o*, then *o* and *p* need not occur together. Homerun can occur without Lefty, and Lefty can occur without Homerun. On the relation-breaking readings, then, neither of Bennett’s counterfactuals comes out vacuous for a baseball and one of its parts.

Will either counterfactual come out false? There seems no reason why they should. If in their separate worlds Homerun and Lefty are both large enough and traveling with enough velocity toward a window that’s fragile, they’ll break it. And there’s nothing stopping either from being large enough and traveling with enough velocity. On relation-breaking readings, then, both counterfactuals come out nonvacuously true for a baseball and one of its proper parts. Since the insight initially driving Compatibilism was the analogy between mental causation and everyday cases like a baseball’s breaking a window, Compatibilists themselves should reject relation-breaking readings. Recall Wilson’s view that mental properties are proper parts of physical properties. As with Homerun and Lefty, if mental property *M* had not been a proper part of physical property *P*, then each could occur without the other, and they wouldn’t make either *O1* or *O2* vacuous. Further, if each has the causal power(s) sufficient to bring about an intentional action, then both counterfactuals will be nonvacuously true. On views like Jessica Wilson’s, intentional actions *will* be systematically overdetermined.

Indeed, relation-breaking readings can undermine every Compatibilist approach to the exclusion problem. Compatibilists solve the problem by positing some relation between mental and physical causes; this relation ensures that the relevant physical causes don’t occur without their corresponding mental causes or vice versa, rendering one of Bennett’s counterfactuals vacuous. As Bennett puts it, the Compatibilist posits a ‘tight relation’ to differentiate between firing squad cases of overdetermination and mental causation cases.

The difference, the compatibilist will say, is that there is an important tight relation between the mental and the physical that just does not hold between the two shootings... (Bennett 2003, 475; see also *Ibid* 476, 484 and Bennett 2008, 287)

It’s only thanks to such relations that a Compatibilist may deny that both counterfactuals come out nonvacuously true for mental causation. But on relation-breaking readings, we ignore these relations, such that neither counterfactual will come out vacuous. Suppose a Compatibilist says that relation *R* holds between the mental and the physical and is tight enough to distinguish mental causation from firing squad

overdetermination. Then, when we evaluate this Compatibilist's view using the relation-breaking readings, we ask whether mental causation is like a firing squad *if R doesn't hold between the mental and the physical*. But this isn't a test of the Compatibilist's view at all, and it will render both counterfactuals nonvacuous because it ignores any relationship between the causes that might have ensured the vacuity of one counterfactual. Relation-breaking readings, then, undermine the Compatibilist project. Compatibilists of all stripes, not just the dualists, should reject them.

(2) Moreover, there are independent reasons to reject relation-breaking readings. Recall the problem with systematic overdetermination that Compatibilism was supposed to address: massive, brute coincidence. Compatibilism handles it by offering an explanation for the coincidence. Just as the baseball and its parts both break the window *because the parts compose the ball*, the Compatibilist says that mental and physical causes both bring about intentional actions *because the mental property is part of the physical property*, or *because the physical property constitutes the mental property*, etc. In each case, the Compatibilist posits a relation between mental and physical causes *to explain* why they regularly occur together—to explain why their actual co-occurrence isn't a coincidence. The non-Cartesian dualist offers an explanation as well: when mental causes occur regularly with physical causes, it's because the physical substance involved embodies the mental substance involved. By the Compatibilist's lights, these relations make all the difference between those effects that are overdetermined and those that aren't. The test is misguided if it considers the possibilities wherein the explanatory relation *doesn't* hold. Instead, the test should be a test *of the proposed relations*.<sup>17</sup>

Where  $c_1$  and  $c_2$  are alleged causes of  $e$  and there is some explanation of the apparent coincidence that  $c_1$  and  $c_2$  both cause  $e$ , then, the overdetermination test should be a test of the explanation. Consider a firing squad case. A plausible explanation for why the shots co-occurred might note that the shooters are both members of the same firing squad, that this firing squad was tasked with executing the dictator, that both shooters are expert shots, and so on. *Given this explanation*, we then ask whether it could have happened that one shot,  $c_1$ , occurred and the other,  $c_2$ , didn't, and if so, whether the dictator would still have died,  $e$ . This is O1, and it's nonvacuously true. *Holding the explanation fixed*,  $c_2$ 's gun might have jammed, or the shooter might have failed to hear the command to shoot, etc. And since  $c_1$ 's shot was fatal in actuality, when we delete  $c_2$ , the dictator still dies. Similarly,  $c_2$  could surely have occurred without  $c_1$ , and the dictator would still have died, so O2 comes out nonvacuously true as well. The firing squad case thus 'passes' the overdetermination test. On pain of making the counterfactual test useless for distinguishing overdetermination from non-overdetermination, then, we should prohibit relation-breaking readings.

On its face, this reading of the test looks vulnerable to abuse. The shots from the firing squad stand in many relations: they co-occur, they're simultaneous, they're world-mates; if we can't break these relations in evaluating the counterfactuals, both counterfactuals will come out vacuous, and even the firing squad case won't be a case of overdetermination. The test won't consider any world in which only one of two co-

<sup>17</sup> One might respond that relation-breaking readings *do* test the proposed relations—they test whether the relations hold by metaphysical necessity. But this reply wouldn't carry much force since it wouldn't give anyone except mereological essentialists reason to think that a baseball and its parts don't overdetermine their effects. We shouldn't be forced to choose between the claim that the baseball does overdetermine the window breaking and the claim that the baseball found in the house isn't the same as the ball that broke the window (since they're not made of all the same particles).

occurring causes occurs, and thus every application of the test will yield vacuous counterfactuals. But I think there's an obvious way to handle these and other proposed explanations. Since the relation tested for is supposed to explain why the causes co-occur, why they're simultaneous, and why they're world-mates, these abusive explanations are circular. We should say, then, that each explanation like this fails *as an explanation* independently of the counterfactual test: circular explanations are unacceptable. Note that this way of handling these cases isn't ad hoc. We'll want such responses in any case for explanations that fail the counterfactual test but with false presuppositions, for explanations that implausibly invoke an Occasionalist God to coordinate mental and physical causes, and so on. The counterfactual test is just a supplement to our usual methods for evaluating explanations.

I offer the tentative conclusion, then, that the Independence Dualist has a solution to the problem of causal exclusion; she too can use the Compatibilist strategy popular among non-reductive physicalists. *Where a mind is embodied*, she will say, a mental cause of an intentional action occurs if and only if a certain physical cause does too. The counterfactuals in Bennett's test are true only vacuously for this sort of Independence Dualist. The objection raised in this section fails because it turns on a relation-breaking reading of the counterfactual test. The non-Cartesian dualist and the Independence Dualist explain the apparent massive coincidence by appealing to the embodiment relation. Both counterfactuals come out vacuous so long as the embodiment relation is held fixed while applying the test for overdetermination. The objection says we have to include in our analysis of the counterfactuals what happens when the embodiment relation is broken. But this is to ask how the embodiment relation fares as an explanation of the coincidence *when the relation doesn't hold*. Of course the relation fails to explain the coincidence if the relation doesn't obtain to do any explaining! But this doesn't tell us anything about whether embodiment is an adequate explanation of the apparent coincidence. It just tells us that if embodiment *didn't hold*, then the effects of the dualist's mental and physical causes would be overdetermined. When the explanation is held fixed for the counterfactuals and thereby evaluated as an explanation of the apparent coincidence, we see that the dualist's effects of mental and physical causes are not overdetermined.

## 4 Conclusion

I've shown that the substance dualist can solve the problem of causal exclusion in the same way that many non-reductive physicalists do, i.e. by adopting Causal Compatibilism. I call the view "Compatibilist Dualism". More generally, I've shown that as far as causal exclusion is concerned, Compatibilist Dualism is a viable alternative to non-reductive physicalist Compatibilism. But it is not, of course, a theory without problems. Most glaringly, the Compatibilist Dualist must explain how two spatially extended substances can inhabit the same region at the same time. She must also say more to explain how two substances may share a single property instance.<sup>18</sup> Given that Compatibilist Dualism can solve the problem of causal exclusion as above, I suggest that these challenges deserve more consideration than contemporary philosophers of mind have tended to give them.

<sup>18</sup> Again, see Engelhardt 2015a.



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